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**Lessons learned and unlearned, the theory and  
practice of employing airpower in small wars, the  
RAF, 1910 – 2010.**

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## ***A Note on Abbreviations / Naming Conventions***

Within the footnotes a number of abbreviations are used for efficiency, these are explained below:

- HC Deb – House of Commons debate
- HL Deb – House of Lords debate
- IWM – Imperial War Museum
- RAF Hendon – The RAF Museum and Archives, Hendon
- TNA – The National Archives, Kew

In the early 1920s Mesopotamia became Iraq, for the avoidance of doubt the territory is referred to as Iraq throughout the text.

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## Introduction

The evolution of airpower from its inception in the first decade of the twentieth century has been something that historians and theorists have written about extensively. The focus of much of this writing has been on the traditional role of airpower in conventional warfare. While this is understandable given the interest in large-scale conventional wars, such as the First and Second World Wars, it is not an accurate reflection of airpower's diverse utility and application since its inception on the eve of The First World War. This work will focus on the use of airpower by the RAF in unconventional operations. In particular it focuses on the relationship between theory, doctrine and operations, and how each of these influence the other.

The Royal Air Force (RAF) has a long history and tradition of operating in overseas territories, this has spanned both conventional and unconventional conflict. In its formative years the RAF was heavily engaged in performing overseas policing duties, in the interwar years this approach to colonial policing became known as air control. The recent conflicts in Libya, Syria and Iraq in the 2010s<sup>1</sup>, all demonstrate a preference by the British government to intervene at arm's length, with an inclination not to put substantial combat forces on the ground. Although at times significant ground forces commitment has been necessary, for example in Afghanistan, the preference is still to use airpower to support special forces and local military forces. This is in contrast with prior experience that necessitated significant ground force commitment. In each of these contemporary engagements the RAF has

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<sup>1</sup> The conflict in Libya against Gadafi's regime was as part of a multinational force led by NATO.

played a leading role, while ground force participation has been restricted to specialist roles, including; training, special forces and engineers. This strategy is reminiscent of the overseas operations that the RAF undertook in the interwar years, known as air control, or air policing operations. The importance of this capability in the twenty-first century will be significant, as John Andreas Olsen argues:

Placing increasing emphasis on the “second grammar,” [i.e. unconventional operations] as we should, the application of airpower must change in order to stay relevant, the fundamentals of airpower remain the same, but the use of airpower, and the concepts governing its utility, may be very different in the second century of manned flight than they were in its first.<sup>2</sup>

### ***Aim of this work***

Since the end of The First World War, airpower has been used extensively by some states in unconventional operations. Surprisingly, very little has been written about this role of airpower in comparison to conventional operations, both by historians and theorists, and even more surprisingly by air forces themselves. Historians have tended to focus on large scale airpower centric events, such as the Battle of Britain, the strategic bombing campaigns of the Second World War, cold war dog fighting in Korea etc, while theorists have in the main focused on the strategic level, in particular the nuclear dimension. Historians for their part have focused on large scale airpower centric events due to the large quantities of primary source material available, and also undoubtedly due to the appetite for output related to these well known events in history. Unsurprisingly air forces have tended to focus their attention on the ability of airpower to provide an edge over their traditional

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<sup>2</sup> John Andreas Olsen, *Global airpower* (Washington, D.C. 2011), p. xvii

opponents (i.e. other air forces). This was also a feature of early naval theorists.<sup>3</sup> This focus by air forces can be explained due to the need for air forces of all sizes to justify the heavy investment required by states to maintain a modern, capable air component. These large budgets can be justified by planning for large scale conventional conflict against a peer, not so much for countering insurgents in second and third world countries. In contrast, this work will shine a light on the topic of airpower in small wars, in particular focusing on the relationship between the theory and the practice of deploying airpower in small wars and thus look to fill the gap in historiography, as highlighted above.

It will achieve this by focusing on several research areas. Firstly, it will examine the development of air power theory and doctrine during this period, providing a high level overview of the entirety of airpower theory, and then focusing specifically on doctrine and theory relevant to the utilisation of airpower in small wars . Secondly, it will examine the practical application of air power in small wars during this period, and throughout it will use organizational learning as an analytical framework to determine whether or not during this period the RAF can be considered a learning organisation. By understanding this a better determination can be made as to the effectiveness of the RAF in a small wars environment in the past, and its ability to be successful in current and future operations. This determination will be based on an understanding of whether or not theory and doctrine impacted practical application, and whether lessons learned through practical application impacted subsequent

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<sup>3</sup> For example see the work of Alfred Thayer Mahan, in particular *The Influence of Sea Power Upon History, 1660–1783* (1890)

theory and doctrine. The outcome of this research will provide information of relevance to both the professional and academic fields within this area and will undoubtedly have policy relevance to air forces and governments around the world. Furthermore, the focus on organizational learning will have broader appeal as the outcome will have applicability in several fields and allow organizations of all types to become more efficient and effective at learning and adapting. The following section outlines the structure of this work and provides a chapter outline.

### ***Chapter Outline***

To provide a framework through which the different periods can be viewed the first chapter of this work will be a theoretical review and methodology. This chapter will provide a view on the evolution of airpower theory throughout the entire period, this is important to understand how the theory of airpower has developed and evolved over the last one hundred years. In addition, this chapter will highlight the sparsity of focus on the utility of airpower in small wars. This first chapter will also briefly provide context in relation to the development and evolution of counterinsurgency theory. Furthermore, this chapter will focus on the area of organisational learning and will provide an overview of approaches to this topic while also creating a framework through which the information highlighted in the subsequent chapters can be viewed. The result of which will be to provide an understanding of how air forces learn, why some lessons were learned, and if these learnings can be seen in

subsequent theory, doctrine and operational practice. Following this theoretical chapter, the subsequent chapters will focus on specific time periods.<sup>4</sup>

The structure of the historical narrative chapters will be based on specific time periods throughout the last 100 years that logically dissect the period into sections that reflect the main thinking around airpower theory and the approaches of the RAF to operations. Each chapter will contain three key sections. The first section will discuss the prevalent theory and doctrine of the time. The second will discuss the practical application of airpower in the period. The third will act to connect the chapters by discussing the issue of organisational learning and whether the practical application during one period, influenced the theory and doctrine of the subsequent period.

Chapter two covers the period from 1919 to 1939 and will discuss the development of airpower theory and doctrine during this time, as well as the practical application of airpower in small wars. This will include case studies covering the British experience of airpower in the Middle East, Africa and the North-Western Frontier. The third chapter will analyse the period 1945 to 1975, this period represents a low point in terms of airpower theory and doctrine development, mainly due to the now nuclear dimension, however there are particularly interesting case studies during this period. The case studies include the British experience in Malaya and Kenya. The fourth chapter will focus on the application of airpower in contemporary counterinsurgency environments, while also highlighting contemporary thinking on

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<sup>4</sup> These time periods are; the interwar period (1919-1939), post-second World War (1945-1975), and Contemporary (2000-2010)

airpower doctrine and theory during this time. This chapter will also focus on current RAF thinking on asymmetric warfare, and finally it will discuss the portents for the use of airpower in these operational environments in the twenty first century.

The concluding chapter will look to provide a summary of findings of this work by reference to the key research questions outlined earlier in this introduction.

Before proceeding, it is important to examine the existing literature relevant to this area. Furthermore, this section will outline how this work will add to and enhance this body of literature.

## ***Literature Review***

### **Airpower in small wars**

Relatively speaking, the subject of airpower and its utility in small wars has had little academic or professional focus over the last one hundred years. This is not surprising considering the popularity of the study of conventional airpower in major conflicts; however, it has resulted in a history of airpower that is unrepresentative of its actual diverse utility. In the late 1980's and early 1990's three books appeared that had this topic as their central focus. In 1989 Philip Towle published a short monograph entitled *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988*.<sup>5</sup> Also in 1989, RAND published a work by Bruce Hoffman titled, *British air power in*

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<sup>5</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London; Washington, 1989)

*peripheral conflict, 1919-1976*.<sup>6</sup> This was followed quickly by David Omissi's work, *Airpower and colonial control: the Royal Air Force, 1919-1939*.<sup>7</sup> For the next decade or so these three works would represent the key monographs focusing on the area of airpower in small wars, however in 2003 James Corum and Wray Johnson published *Airpower in small wars: fighting insurgents and terrorists*.<sup>8</sup> Later still in 2009, the Royal Air Force Centre for Airpower Studies published a work titled *Air power, insurgency and the "war on terror"*, edited by Joel Hayward.<sup>9</sup> In 2011 the Royal Air Force Centre for Airpower Studies published another work on this topic, *The RAF, small wars and insurgencies in the Middle East, 1919-1939*, by Sebastian Ritchie.<sup>10</sup> This latter work would be the first of a two part series, the second of which would focus on the post Second World War period. Also by Sebastian Ritchie, this work was titled *The RAF, small wars and insurgencies: later colonial operations, 1945-1975*.<sup>11</sup> In 2015 we saw the publication of *Wings of empire: The forgotten wars of the Royal Air Force, 1919-1939*<sup>12</sup>, by Barry Renfrew.

Philip Towle's work, while short, is a significant contribution to this area of study. Towle's background is in strategic studies and international relations and this is clear in his work as he successfully places the history in the wider political context.

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<sup>6</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989)

<sup>7</sup> David E Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester England; New York, NY, 1990)

<sup>8</sup> James S Corum and Wray R Johnson, *Airpower in small wars: fighting insurgents and terrorists* (Lawrence, Kan., 2003)

<sup>9</sup> Joel Hayward (ed.), *Air power, insurgency and the "war on terror"* (Royal Air Force Centre for Airpower Studies, Cranwell, 2009)

<sup>10</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011)

<sup>11</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011)

<sup>12</sup> Barry, Renfrew, *Wings of empire: the forgotten wars of the Royal Air Force, 1919-1939* (Stroud, UK, 2015)

Within the book he charts the ways in which airpower has been used to attack and also to support insurgents, from the RAF policing of colonial territory in the 1920s through to the *Mujahadeen* fight against the Soviets in Afghanistan in the 1980s. Towle's research is impressive and yet he himself admits that studying this particular area is difficult due to the lack of primary sources from the rebel's perspective.<sup>13</sup> The one area in which Towle's analysis is lacking is the fact that he does not relate his history to the wider development of airpower theory and doctrine; this context would have proved very beneficial. Nevertheless, Towle's work is concise, illuminating, and based on good primary research.

*British air power in peripheral conflict* by Bruce Hoffman, is a short work, however it provides a concise overview of the different small wars that the RAF were involved in during the period, from British Somaliland in 1919, through to Dhofar in the early 1970s. The work was published by the RAND Corporation, and sponsored by the United States Air Force; because of this its conclusions are focused around what the RAF experience in these conflicts could potentially mean to the United States Air Force. In conclusion, it addresses some of the issues that were relevant to the United States Air Force at the time of its publication, these include themes on air defence, the role of technology, the role of helicopters, as well as the role of air forces in cooperation and coordination with other military services.<sup>14</sup> This publication however must be viewed in the light of the period in which it was published. What is interesting about this period of reflection within the United States Air Force is the fact that the contextual background to this work was still heavily

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<sup>13</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 8

<sup>14</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989)



influenced by the experiences of the Vietnam conflict. It could be argued that the focus on the lessons of the British use of airpower in peripheral conflict was a nod to the seeming inability of the US to successfully prosecute airpower in Vietnam, particularly in the earlier stages of the war prior to its evolution into a more conventional conflict.

*Airpower and colonial control* is an in-depth academic study of the British policy of air control used during the interwar period to police some of Britain's colonial territories. Omissi's work covers the origins of air policing, its initial use in Iraq and its subsequent wider use, he also examines in detail the elements that attributed to its adoption for this role, for example geographical considerations, technology, and indigenous peoples' responses to air control. Finally, Omissi compares British experience to that of other colonial powers and finds that air control was not a purely British phenomenon. Omissi's work is important for two reasons; firstly, it offers an in-depth study of *why* air control emerged as an approach to colonial policing in the interwar years, secondly it considers *how* airpower was deployed in this operational environment and what the results were. Omissi's work offers a good template for the case studies that will be included within this work. Where this work will differ from Omissi is in relation to its focus on the relationship between theory, doctrine and operations, and how each of these influenced the other. In essence, how did operations impact theory and doctrine, and consequently, did changes in theory and doctrine impact how operations were conducted? This impact and influence will be analysed with reference to organisational learning.<sup>15</sup>

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<sup>15</sup> David E Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester England; New York, NY, 1990)

*Airpower in small wars* by Corum and Johnson is another significant contribution to this area of study. Contained within one work is a history of airpower's utility within this operational environment from the early use of airpower by the US in Central America and the Caribbean in the 1910s and 1920s, right through to the use of airpower in Middle Eastern small wars up to the year 2000. Throughout this work, the authors also provide some varied case studies including; the Greek Civil War, counterinsurgency operations in South Africa, as well as the use of airpower by South American governments in counter guerilla operations. While both authors currently work in academia it is apparent from their approach that they are very much writing from a professional military perspective. Both authors have taught at American military institutes, and both have served in the armed forces (Johnson is a retired USAF Colonel, while Corum is a retired Lieutenant Colonel in the US Army reserves). While this approach does not detract from the usefulness of this work, it does mean that the result is more of a straightforward history, as opposed to an academic analysis (this can be evidenced in the fact that the bibliography is comprised of two pages of text, mentioning only a small number of relevant works). However, this is the purpose of the work, and in this regard, it succeeds.<sup>16</sup>

*Air power, insurgency and the "war on terror"* is a collection of essays edited by Joel Hayward and the book is based on a series of presentations given at a conference of the same name held in 2007. In this work, the essays seek to analyse historical instances of the use of airpower in small wars and counterinsurgency

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<sup>16</sup> James S Corum and Wray R Johnson, *Airpower in small wars: fighting insurgents and terrorists* (Lawrence, Kan., 2003)

operations and from this to discern if a pattern exists, if lessons were or could be learned, and if a historical analysis can provide information to allow air forces to be more efficient and effective in supporting counterinsurgency operations today and into the future. This book is extremely relevant to what this work is trying to accomplish. Whereas this collection focuses on historical case studies and supplements this with two chapters on the future direction of air power in counterinsurgency operations, this work will expand on this and look to connect it with two key factors that will illuminate the issue further. Firstly, the connection between practical experience on the one hand and doctrine and theory on the other, and secondly the influence of organisational learning on the past and future ability of air forces to learn appropriate lessons from historical experience.<sup>17</sup> This work will argue that the effectiveness of air forces in prosecuting airpower in small wars is directly related to the extent that the air force can be considered a learning organisation.

In Barry Renfrew's *Wings of Empire*, the author focuses on the period 1919 to 1939. This narrow focus allows Renfrew to provide a significant amount of detail in relation to the policy of air substitution and air control pursued by the British authorities in the interwar years. One disappointing aspect of Renfrew's work is that he concludes that with the outbreak of the Second World War, that the application and experience of air control would be lost to the RAF forever. It is hoped that this work will show that air control was not lost to the RAF, but rather in the post war period their thinking had evolved and that the approach to using airpower in colonial

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<sup>17</sup> Joel Hayward (ed.), *Air power, insurgency and the "war on terror"* (Royal Air Force Centre for Airpower Studies, Cranwell, 2009)

conflicts had developed. This evolution and development had been possible because of air control, and it owed quite a lot of its DNA to the experiences of the air control period.<sup>18</sup> As Lieutenant Colonel Richard Newton (Retd.) has stated, what is unique about Renfrew's work is his extensive use of oral histories, diaries and papers of those involved, this first-person perspective certainly gives the work a lot of credence.<sup>19</sup> The use of these sources are certainly of interest to this work, however, as Newton also noted, what lets this work down is its lack of scholarly precision, however the source material has proved beneficial.

While the works above have had airpower in small wars as their central topic, their approach in the main has been to tell the history of airpower in small wars. While some have placed this history in the context of the wider development of airpower, surprisingly little attention has been given to the relationship between the conduct of operations and the theory and doctrine relevant to that environment. This is the key theme running throughout this work, and is a new approach to this topic that will provide valuable analysis of the relationship between the theory, doctrine and the practical utilisation of airpower in small wars. While monographs have not in the main focused on this relationship, significant scholarly articles have looked at this issue, works by Priya Satia and Jafna Cox,<sup>20</sup> amongst many others, have been used extensively in this work.

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<sup>18</sup> Barry, Renfrew, *Wings of empire: the forgotten wars of the Royal Air Force, 1919-1939* (Stroud, UK, 2015)

<sup>19</sup> Lieutenant Colonel Richard Newton (retd.), review of Barry Renfrew, 'Wings of Empire', in *Air Power Review*, vol. 19, no. 1 (Spring, 2016), pp 144-6, p. 114

<sup>20</sup> Priya Satia, 'The defense of inhumanity: air control and the British idea of Arabia', in *The American Historical Review*, vol. 111, no. 1 (February, 2006), pp. 16-51; Jafna L. Cox, 'A splendid training ground: The importance to the Royal air force of its role in Iraq, 1919-32', *The Journal of Imperial and Commonwealth History*, vol. 13, no. 2 (1985) pp 157-184, p. 163

The other works identified that contained a significant amount of information on this area was Victor Flinatham's 1990 work, *Air wars and aircraft: a detailed record of air combat, 1945 to the present*.<sup>21</sup> Flinatham's book is an excellent reference work for all air combat from 1945 to the 1980s. The work is heavy on detail and yet light on opinion, thus making it ideal reference material; of particular utility are the numerous orders of battle and over 200 pictures contained within the book.

As can be seen from the above section there are several published monographs on this particular area of study, furthermore, in the past decade there has been a proliferation of journal articles published that do address the use of airpower in small wars. This undoubtedly has been precipitated by the situation in which western coalitions have found themselves in, particularly in Iraq and Afghanistan.

Throughout this study journal articles will be used extensively as secondary sources. The sources of these articles vary from professional military journals to academic journals. Of particular relevance to this study are the articles that have appeared in professional military journals. These articles, written in the main by military officers, provide an insight into a practitioner's view of the use of air power in small wars. These opinions will be contrasted against the published doctrine and theory, to see what if any divergence appears between doctrine and theory on the one hand and practical experience on the other. The key professional military journals reviewed include; *Airpower Journal*, *Airpower Magazine*, *Air and Space Power Journal*, *Royal United Services Institute Journal* and *Military affairs*. The key academic

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<sup>21</sup> Victor Flinatham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990)

journals reviewed were; *Journal of Military History*, *Journal of Contemporary History* and the *Journal of Strategic Studies*.

This work will add to the literature outlined above and it is hoped enhance it in two particular areas. Firstly, in the context of small wars, it will for the first time trace the association of theory and doctrine on the one hand, to practical application on the other, and secondly, it will use an interdisciplinary approach to look at this association through the lense of organisation learning, thus determining whether the RAF can be considered a learning organisation. A learning organisation is one that:

[...] typically adds to, transforms, or reduces organizational knowledge. Theories of organizational learning attempt to understand the processes which lead to (or prevent) changes in organizational knowledge, as well as the effects of learning and knowledge on behaviours and organizational outcomes.<sup>22</sup>

Organisational learning will inform this work by trying to show how air forces, specifically the RAF, add to, transform or reduce organisational knowledge, while also trying to understand the cause and effect of the processes that do this.

To provide further context to this work, it is also important to look at the published literature of two related areas, that of general airpower and the other of counterinsurgency. Both of which have been researched extensively to provide perspective for this work.

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<sup>22</sup> Martin Schulz, 'Organizational learning' in *The blackwell companion to organizations* (2002), available at <http://www.unc.edu/~healdric/Classes/Soci245/Schulz.pdf> (accessed 17 April 2014), p. 1

## Airpower

There is a large historiography on airpower, none more so than in recent years. The key secondary texts used to provide context for this work include; *A history of air warfare*, by John Andreas Olsen, *Airpower history: turning points from Kitty Hawk to Kosovo*, by Sebastian Cox and Peter Gray, *The age of airpower*, by Martin Van Creveld, *Airpower: the men, machines and ideas that revolutionized war, from Kitty Hawk to Gulf War II*, by Stephen Budiansky, *Air warfare: history, theory and practice*, by Peter Gray and *Air Power*, by Jeremy Black.<sup>23</sup>

All of these works offer similar analysis of the history of airpower; each charts the development of airpower and its utility, while also highlighting key points in its history that influenced its application. In the main these works focus on the use of airpower in a conventional context. Surprisingly, what they do not include is any significant analysis of the use of airpower in unconventional warfare. While Jeremy Black does attempt to do this, his work is very broad and as a result lacks any significant depth. This gap is surprising when one considers that the bulk of air actions in the interwar period were indeed in unconventional operations.

While the above works are general airpower history works, and tend to focus on the history of airpower from its inception onwards, there has been a large volume of work that focuses on the use of airpower in specific conflicts. Specific works on all

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<sup>23</sup> John Andreas Olsen, *A history of air warfare* (2010); Sebastian Cox and Peter Gray, *Air power history: turning points from Kitty Hawk to Kosovo* (London; Portland, OR, 2002); Martin Van Creveld, *The age of airpower* (1st ed., New York, 2011); Stephen Budiansky, *Air power: the men, machines, and ideas that revolutionized war, from Kitty Hawk to Gulf War II* (New York, N.Y., 2004); Gray, Peter, *Air warfare: history, theory and practice* (London, 2016); Jeremy Black, *Air power* (Lanham, MD, 2016)

the major unconventional conflicts have been used, while specific works on airpower technology have also proved very useful, a key example of this is David Wragg's, *Helicopters at war*.<sup>24</sup> Further to these there have been several works that have focused solely on the history of airpower theory, and these have been of major importance to this work. Foremost amongst these have been two works by Philip Meilinger, *Paths to Heaven*, and *Airwar: theory and practice*.<sup>26</sup>

All the aforementioned works, and many more, have provided important context to the topic of this work. When analysing a specific subsection of a topic, it is always important to understand the broader concepts at play, thus this perspective has proven very beneficial. As has been shown in relation to the airpower theory works cited above, these have focussed primarily on the use of airpower in conventional conflict. This work will use these works as a starting point, but will then divert from these to look at airpower theory relevant to unconventional warfare.

### Counterinsurgency

Of equal importance from a contextual perspective has been an analysis of texts related to the field of counterinsurgency history and theory. There has been a proliferation of works in the last decade that have sought to understand and analyse the insurgencies in Iraq and Afghanistan and some have researched historical counterinsurgency campaigns to try to uncover approaches that may be applicable to these twenty first century insurgencies. In the main the modern literature on this

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<sup>24</sup> David Wragg, *Helicopters at war, a pictorial history* (London, 1983)

<sup>26</sup> Colonel Philip S. Meilinger, *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001); Colonel Philip S. Meilinger, *Airwar: theory and practice* (London; Portland, OR, 2003)



topic is too focused on the most recent conflicts and so lacks context and perspective. However, those that have sought to place the current insurgencies within a wider historical context have proven to be very valuable. The ability to analyse current conflicts in the context of historical operations is useful for several reasons. Firstly, the ability to trace the evolution in theory and practice related to how counterinsurgency operations are conducted provides an insight into themes of interest to this study, such as organizational learning. Secondly, comparative analysis of different counterinsurgency operations is very illuminating in providing specific insight into how differing approaches can lead to differing outcomes.

*Counterinsurgency in modern warfare*, edited by Daniel Marston and Carter Malkasian, is one such work. This work is comprised of a series of essays, written by leading counterinsurgency experts that address the full historical perspective of twentieth century counterinsurgency campaigns, from the Philippines to the modern conflicts in Iraq and Afghanistan. Of interest in this work is the focus on patterns and lessons learned, which will be a key consideration of this work.<sup>27</sup>

Other works of a similar vein include; *War in the shadows* by Robert Asprey, this work focuses in the main on the history of US counterinsurgency operations.<sup>28</sup>

*Learning to eat soup with a knife: counterinsurgency lessons from Malaya and Vietnam*, by John Nagl, is a particularly interesting work. As the title suggests, Nagl focuses on the approaches to the operations in Malaya (by the British) and Vietnam (by the United States) and analyses these to discern if and how British and US forces

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<sup>27</sup> Daniel Marston and Carter Malkasian (eds.), *Counterinsurgency in modern warfare* (Oxford; New York, 2010)

<sup>28</sup> Robert B Asprey, *War in the shadows* (Lincoln, NE, 2002)

altered their approach to each operation based on the lessons they were learning at the time. Nagl's approach is very applicable to the idea in this work of trying to understand whether operational experience influenced subsequent theoretical and doctrinal approaches (i.e. were lessons learned?).<sup>29</sup> Contextually important to this work was also literature critical of counterinsurgency approaches, among the authors reviewed were Douglas Porch and Colonel Gian Gentile.<sup>30</sup>

Works that brought together different perspectives on counterinsurgency also proved very valuable. The works consulted included *The Routledge handbook of insurgency and countersurgency*, edited by Paul Rich and Isabelle Duyvesteyn, and *Understanding counterinsurgency*, edited by Thomas Rid and Thomas Keaney.<sup>31</sup>

The emphasis on counterinsurgency writing in the last fifteen years has been warranted. As western powers have become embroiled in lengthy campaigns against insurgents and terrorists, there is a natural inclination within the professional and academic world to try and better understand the challenges that these engagements pose. The conclusions of many of these writers are quite similar. They espouse an integrated political-military approach to these types of engagements where the armed forces are subordinated to the political authority and where emphasis is placed on political, social and cultural aspects of the conflict. The concept of 'hearts and

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<sup>29</sup> John A Nagl, *Learning to eat soup with a knife: counterinsurgency lessons from Malaya and Vietnam* (Chicago, 2005)

<sup>30</sup> Douglas Porch, *Counterinsurgency, exposing the myths of the new way of war* (Cambridge, 2013); Colonel Gian Gentile, *Wrong turn: America's deadly embrace of counterinsurgency* (New York, 2013)

<sup>31</sup> Paul B. Rich and Isabelle Duyvesteyn (eds.), *The Routledge handbook of insurgency and counterinsurgency* (Oxon, UK, 2014); Thomas Rid and Thomas Keaney (eds.), *Understanding counterinsurgency, doctrine, operations, and challenges* (Oxon, UK, 2010)

minds' is a key example of this. There are certainly those that do address the military aspects of such conflicts, and in the main the conclusions here focus on the advantages of supporting indigenous security forces to carry out operations. However there appears to be a glaring deficit in all of this, and that is the understanding of the potential role that airpower, in all its guises, can play in these types of conflicts. Air strike operations are just one-component of an ever-widening role that airpower can play, and it is the intention of this work to demonstrate not only where this utility has proved beneficial in the past, but also to ascertain the role of airpower in small wars today, and in the future.

### Organisational Learning

Finally, to provide some context for the organisational learning theme of this work it is important to provide some insight into the works that have influenced this analysis. Organisational learning is a very complex concept within organisational theory. For the purposes of this work some of the key theorists within this area have been reviewed and some of the key concepts about organisation learning will be used to frame an analysis of the learning process within air forces. At its core, organisational learning is concerned with 'attempt[ing] to understand the processes which lead to (or prevent) changes in organizational knowledge, as well as the effects of learning and knowledge on behaviours and organizational outcomes'.<sup>32</sup>

Chris Argyris was one of the first theorists to propose two different kinds of learning within organisations; what he termed single-loop and double-loop learning. In his

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<sup>32</sup> M. Schulz, 'Organizational learning' in *The blackwell companion to organizations* (2002), available at [www.unc.edu/~healdric/Classes/Soci245/Schulz.pdf](http://www.unc.edu/~healdric/Classes/Soci245/Schulz.pdf) (accessed 04 January 2015)

1978 work with David Schön, *Organizational learning: a theory of action perspective*, they detail this theory and the work provides some relevant approaches that can be used within this work when analysing the air force learning process.<sup>33</sup>

In 1990 Peter Senge published *The fifth discipline: the art and practice of the learning organization*, in this work Senge seeks to outline the elements that make up the ideal learning organisation.<sup>34</sup> Senge outlines key elements that must be present within an organisation and discusses how these can be implemented, if not already present. This work offers key insights into what is required to be a learning organisation and thus provides an interesting approach that can be used to analyse the RAF and to discern whether they have the elements required to be a learning organisation.

### Systems Theory

Following on from the area of organisation learning is the related discipline of systems theory. Systems theory allows the researcher to study a system in-depth and consequently understand principles that have applicability in broader contexts. A key text that has influenced this area of the research is Robert Flood's 1999 work, *Rethinking the fifth discipline: learning within the unknowable*.<sup>35</sup> What is particularly relevant about this work is Flood's approach to connecting organisational learning and systems theory. Whereas Peter Senge tells us the characteristics required to be a learning organisation, David Flood tells us the steps

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<sup>33</sup> Chris Argyris and Donald A Schön, *Organizational learning* (Reading, Mass., 1978)

<sup>34</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (1st ed., New York, 1990)

<sup>35</sup> Robert L. Flood, *Rethinking the fifth discipline: learning within the unknowable* (London; New York, 1999)

required to improve the organisation to the degree required to become the learning organisation so espoused by Senge. Flood's approach is very relevant in this work as it provides key strategies for change that can be suggested, if required, to turn air forces into the ultimate learning organisations.

As can be seen from the literature review above there is certainly a gap in research in this area and this work will focus on bridging this gap in three specific areas. Firstly, there appears to be a lack of academic research related to airpower's utility in small wars. To address this, this work will provide an analysis of the RAF use of airpower in small wars in the period 1910-2010.<sup>36</sup> This analysis will be based on archival research focused not only on the operations conducted by the RAF in small wars, but also the policy that governed these operations, as well as the opinion of officers and the rank and file in the success, or otherwise, of these operations. Furthermore, this analysis will also place these operations in the relevant political and social context.

Secondly, there is a lack of research on the connection between airpower's utility in this operational environment, and the theory and doctrine that precipitates its practical application. For the most part research to date has tended to focus separately on operations, theory or doctrine. This work will argue, and demonstrate, that practical application on the one hand, and doctrine and theory on the other, are inextricably linked, and that any thorough analysis must take each into consideration.

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<sup>36</sup> While the analysis in this work nominally concludes in 2010, in conclusion, it will also look at more recent RAF publications and doctrine that influence the conclusions that have been drawn.

Finally, there appears to be a gap in our understanding of how interrelated the concepts of learning are with the development, dissemination and practical application of doctrine. This work will, through an analysis of past experience, proffer an opinion on how historical experience can prove beneficial to understanding how modern armed forces can become better learning organisations.

The following section outlines the research methodology used that will address these gaps.

### ***Research Methodology***

This work will trace the evolution of the theory and practice of the deployment of airpower in small wars from 1910 to 2010. This work will focus on the British experience, and thus on the RAF. It will achieve this by examining several research areas. Firstly, it will analyse the development of airpower theory and doctrine during this period. Secondly, it will examine the practical application of this theory and doctrine through a historical analysis of the utility of airpower in small wars.

Thirdly, this work will assess the issue of organisational learning and through this come to a determination as to whether or not the RAF can be considered a learning organisation.

While in the main this work will focus on the use of airpower by British forces, it will also look at how other air forces have applied airpower within this operational environment, particularly from a contemporary perspective. The focus on British forces is for two main reasons. Firstly, from the earliest days of military airpower, the Royal Naval Air Service, the Royal Flying Corps (RFC), and its successor the

Royal Air Force (RAF), were at the forefront of airpower theory and practice.<sup>37</sup>

Secondly, the British have used airpower in unconventional ways, from its inception, right through to current operations and so is an obvious choice for a study that focuses on airpower in small wars. The outcome of this research will provide information of relevance to both the professional and academic fields within this area. Furthermore, the focus on organisational learning will have broader appeal.

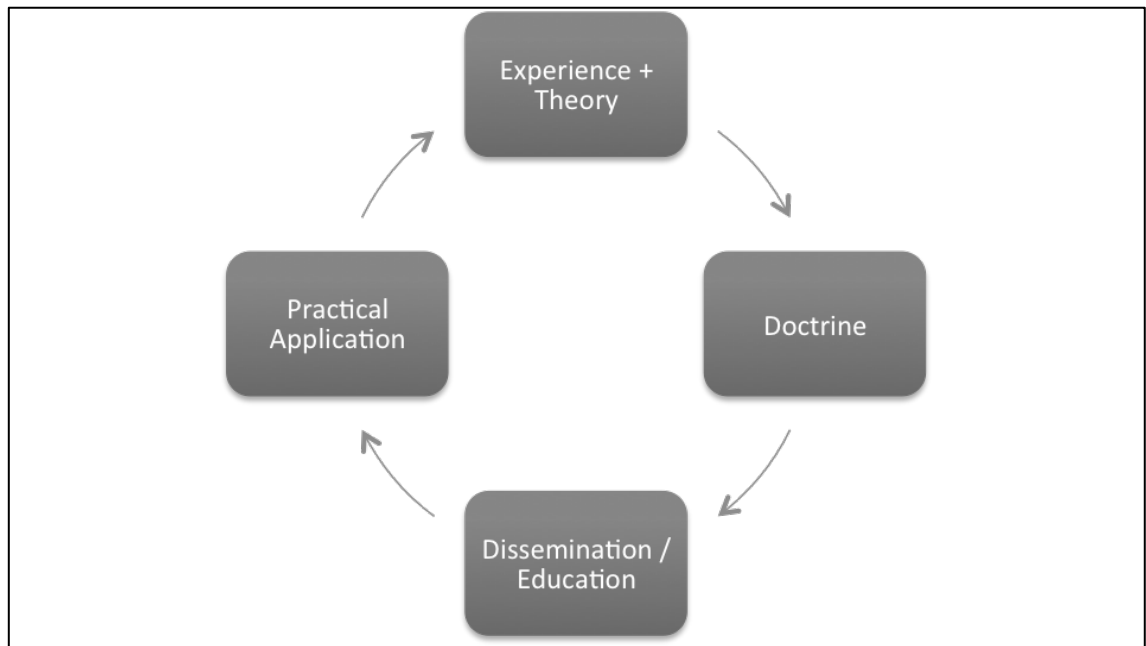
This work sets out to redress the imbalance in coverage outlined earlier and will do so by focusing on some key research questions. Namely, was there an evolution in airpower doctrine, relative to small wars, in the period 1910-2010? Was airpower theory during this period reflected in airpower doctrine?<sup>38</sup> Did practical experiences of airpower in small wars during this period filter through into subsequent airpower doctrine and theory? Does the application of airpower in small wars throughout the period provide lessons for its utility in the 21st century? Does the development of doctrine during this period tell us something about the ability, or inability, of the RAF to implement practical changes based on the evidence of operational experience? A key to understanding these different questions is the ability to understand the process that governs the development of theory and doctrine, its dissemination and education, and its practical application. This process is summarised in the following graphic.

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<sup>37</sup> The Royal Flying Corps became the Royal Air Force in 1918 after the publication of The Smuts Report in 1917.

<sup>38</sup> Airpower theory in the main are theoretical works published outside of the official military structure, whereas doctrine represents the official theory of military forces.

**Figure 1 - Organisational Learning Process**



**Source:** Created by the author.

It is worth noting that doctrine was not always present in the period that is under analysis, however in the main the learning process is valid, in earlier periods the capturing of operational lessons and dissemination of this would have been on an informal basis. This is evidenced in the publication of articles by service men returning from duty and also the curricula of staff college courses.

The above graphic demonstrates a standard learning process that has been adapted to address the learning process within military organisations. While it would be naïve to believe that all military organisations learn in the same way, it is beneficial to utilize a generic model to be able to analyse learning throughout the historical period of this study. It is felt that the disadvantages of using this generic framework will be outweighed by the insight that such an analysis will provide. Firstly, information is gathered from two sources; experience and theory, this is then typically formulated into doctrine where the lessons learned are deemed to be of wider application, is



disseminated, and provides the basis for education of personnel, and finally this doctrine is applied within operational environments. This application then feeds back into the initial step (experience and theory) and the process begins once again. This work will trace this cyclical process; furthermore, it will seek to understand if and why the process has been successful or failed throughout this period. For example, were lessons learned from operational experience, if not, why not? Was doctrine applied correctly, did doctrine even exist? It will also discuss political and cultural context, as the political and cultural environment undoubtedly plays a part in influencing armed services, and as a consequence their doctrinal teachings.

These questions will provide very useful information on several key areas. Firstly, it will show the evolution of theory and doctrine during the period, while also highlighting the successes and failures that have occurred in its practical application. It will also help to understand this organisational learning process and through this provide some insight into how the process can be improved.

The methodological approach for this work will differ for each of the key research themes; airpower doctrine and theory, historical application of airpower in small wars, and organisational learning. Firstly, to understand the theoretical and doctrinal approach to airpower during the period, an analysis of published doctrine and theory on airpower will be conducted. The focus of this analysis will be primarily on doctrine published by the Royal Air Force. This analysis will focus on the sections of air force and army doctrine relevant to airpower and small wars and will span the period from 1910 until 2010. In parallel, this section will examine the theory espoused by airpower theorists and understand how and if this was reflected in

doctrine. The methodology for this research area will utilise two main archives; the *UK National Archives* in Kew, London and the *RAF archives* in Hendon.

The second research methodology that this work relies on is an historical analysis of the deployment of airpower in small wars. This area of the research relies heavily on primary sources and involved archival research in Great Britain, as well as the utilisation of primary resources available online. Also of importance was key secondary texts, details of which are in the literature review included above. The focus of this research is on several case studies that offer a wide range of examples of the use of airpower in small wars. Specific case studies examined include RAF operations in Iraq in the interwar period, operations in Malaya in the post war period, along with RAF operations in Afghanistan and Iraq after 2000. Furthermore, this work provides a snapshot view of other appropriate case studies that analyse the use of airpower in small wars, for example RAF operations in British Somaliland, Aden, Palestine, the Northwest Frontier, and Kenya.

The final research area will involve an analysis of how theory and doctrine were translated into practical application; this will be done with an organisational analysis framework. Organisational analysis will focus on the area of organisational learning and systems theory. Approaches to this will rely heavily on models as proposed by Argyris and Schon (1976), Senge (1990) and Flood (1999). It will seek to confirm the applicability of the organisation learning process outlined earlier in this work (see figure 1) and look to deconstruct this and understand the connections and flow of this process.

## ***Definition of key terms***

Before proceeding it is useful at this juncture to define some of the terms that will be used extensively within this work. Firstly, the *theory* referred to in the title of this work, refers to not only airpower theory, but also doctrinal theory. Airpower theory in the main are theoretical works published outside of the official military structure, whereas doctrine represents the official theory of military forces. Doctrine can be defined as:

Military doctrine is the fundamental set of principles that guides military forces as they pursue national security objectives.<sup>39</sup>

Theory has been around since the emergence of manned flight; however, it must be highlighted that doctrine was not always present, and certainly the early aviators went to war without an official doctrinal approach. As Group Captain Andrew Vallance has said, ‘doctrine is not theory per se, but an inter-active matrix of theory and practice’.<sup>40</sup> Doctrine in the context of this work encompasses formal as well as informal doctrine. Jim Storr summarised the difference eloquently; Storr believed that doctrine could be both explicit (i.e. official, published) and implicit (i.e. received wisdom).<sup>41</sup> Building on this theme, Neville Parton in his analysis of early RAF doctrine talks about the body of information that needs to be analysed as including official doctrinal publications, interim guidance and notes, as well as staff lectures and presentations to institutions like the Royal United Services Institute (RUSI).<sup>42</sup>

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<sup>39</sup> RAND, available at <https://www.rand.org/topics/military-doctrine.html> (accessed 17 July 2017)

<sup>40</sup> Group Captin Andrew Vallance, *Air power, collected essays on doctrine* (London, 1990), p. xix

<sup>41</sup> as quoted in Dr. Paul Latawski, *The inherent tensions in military doctrine*, Sandhurst Occasional Papers No. 5 (Surrey, 2011), p. 8

<sup>42</sup> Neville Parton, ‘The development of early RAF doctrine’, in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178.

The *practice* of airpower simply refers to the operational activity of airpower, including army, navy and air force assets. Finally, the use of the term *small wars* is significant. In recent times, many terms have come to be used to describe the use of military force in unconventional operations (i.e. military activity where the opponent is a non-state actor). These terms include; unconventional warfare, low-intensity conflict, and military operations other than war (MOOTW), however the term small wars, while popular in the late nineteenth and first half of the twentieth century, seems to have become unfashionable. So why use it? The term is flexible and thus can be used to describe many different types of operations and military conflicts, as the *Small Wars Journal* puts it:

‘Small Wars’ is an imperfect term used to describe a broad spectrum of spirited continuation of politics by other means, falling somewhere in the middle bit of the continuum between feisty diplomatic words and global thermonuclear war.<sup>43</sup>

For this work its definition is simple, it refers to conflict other than state on state conventional warfare. This definition differs little from that posited by Major C.E. Callwell in his seminal work *Small Wars, their principles & practice*, published in 1896, ‘practically it [small wars] may be said to include all campaigns other than those where both the opposing sides consist of regular troops’.<sup>44</sup> Thus it encompasses many of the previously mentioned terms (i.e. unconventional warfare, MOOTW etc.). It is believed that the use of this all-encompassing term will allow

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<sup>43</sup> <http://smallwarsjournal.com/content/about> (accessed 30 December 2013)

<sup>44</sup> Callwell, C E, *Small wars. Their principles and practice* (3rd ed., London, 1906), p. 1

for a greater view of airpowers wide utility in these types of conflicts, without getting bogged down in trying to categorise each type of conflict.

This work will show that the history of the RAF is inextricably linked to small wars and counterinsurgencies, it will argue that in the interwar period the RAF developed and evolved a system for the successful employment of airpower in small wars, a system that would come to be known as air control. Thus, in the interwar years the RAF showed all the outwards signs of being a learning organisation. It captured knowledge from its experiences, codified this knowledge in ever-evolving doctrine, and applied this doctrine to successfully prosecute small wars. However, with the end of the Second World War the RAF had lost this connection with small wars, it seemed to forget many of the lessons that had been learned in Iraq and elsewhere in the interwar period, and when conflicts arose in Malaya and Kenya it needed to relearn these lessons. The learning organisation was no more, the connection with past experiences had been broken, the knowledge seemingly lost. In contemporary operations, the RAF once again needed to relearn earlier lessons, only with the publication of AP3000 (4<sup>th</sup> edition), do we see the emergence once again of the RAFs understanding of what it takes to successfully prosecute small wars.<sup>45</sup> This was a case not so much of the institutional knowledge being lost, but rather of the doctrine not reflecting this knowledge.

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<sup>45</sup> RAF, *AP3000* (4<sup>th</sup> edition, 2009)

## **Chapter 1 – Theoretical Review and Methodology**

To provide contextual background to this work, this chapter will seek to trace the development of theory in the areas of airpower and counterinsurgency (COIN), and discuss briefly the confluence of these two areas. Furthermore, this chapter will provide an outline of organisational learning theory and discuss its applicability as an analytical tool to assess an organisation's ability to learn. This chapter will not discuss airpower doctrine, as this will be covered in detail in the subsequent chapters. This chapter will also not discuss the theory behind airpower in small wars and this is important for a number of reasons; firstly it is important to understand the prevalent (i.e. conventional) airpower theory and how it developed over time, thus making it easier to place airpower theory relevant to small wars in the wider theoretical context and debate; secondly tracing the development of airpower theory throughout this period will provide a context in which the subsequent chapters can be viewed. For example, in the interwar period the focus of airpower theorists was on strategic bombing, however as will be shown later, what the air forces were doing during this period was anything but strategic bombing.

### ***Airpower Theory***

The development of airpower theory, unlike its naval and land warfare counterparts, has been condensed into what is a very short period of time. It is now only a little over a century since the first use of powered aircraft in military operations, however within that time a huge amount has been written about its correct employment.

Airpower theorists have enunciated the advantages of airpower in military operations

throughout the last century, however their approaches to, and theories on, the correct employment of airpower are varied.

What is important to remember when analysing airpower theory is that theory is written for varying reasons and for varying audiences. As Peter Gray has said:

The immediate challenge for the student of air warfare, at any level, is to ascertain what is being said by the theorist and, arguably more importantly, to analyse why it was written and who was actually influenced by the work.<sup>46</sup>

This is echoed by David Jordan when he talks about the ebb and flow of airpower theory, and the fact that its central message seemed to change depending on the current viewpoint and the perception of what was deemed to be right at the time.<sup>47</sup>

Through the analysis in this chapter, these points will be illuminated.

During the First World War, most of the modern roles of air forces were established; close air support (CAS), interdiction, strategic bombing, reconnaissance and supply.<sup>48</sup> After the First World War however, the emphasis from air theorists was centered on the use of airpower in strategic bombardment. The Italian theorist Giulio Douhet, the American Billy Mitchell and the Briton Hugh Trenchard, expressed this view most notably. However, when one analyses the use of airpower in the First World War the primacy of strategic bombardment is certainly not apparent, indeed it

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<sup>46</sup> Peter Gray, *Air warfare, history, theory and practice* (London, 2016), p. 37

<sup>47</sup> David Jordan, 'Air and space power in the contemporary era: 1990-2030', in David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016)

<sup>48</sup> Beatrice Heuser, *The evolution of strategy, thinking war from antiquity to the present* (New York, 2010), kindle edition, p. 298, location 5979.

is obvious that air superiority, close air support and interdiction played a more significant part than strategic bombing; reconnaissance certainly did. Also, if one looks at the actual employment of airpower in the interwar years, the role of strategic bombardment was minimal. The belief of these airpower theorists was that strategic bombardment offered a panacea to the inherent stagnation of land warfare as experienced in the First World War, this certainly was true of the Italian theorist Giulio Douhet.

### Giulio Douhet

In his 1921 publication *The Command of the Air*, Douhet argued that airpower during the First World War was developed within an environment that caused it to grow rapidly without enough thought as to its most useful employment. He argued that the lessons of the First World War showed that what was required was an independent air force, one that would be ‘accorded equal importance with the army and navy’.<sup>49</sup> Douhet went so far as to espouse the invulnerability of airpower when he stated that ‘nothing man can do on the surface of the earth can interfere with a plane in flight’.<sup>50</sup> While the above statements represented bold views at the time, what drew the most ire from commentators was Douhet’s assertion that aerial bombardment transformed the civilian populations of belligerent countries into combatants.<sup>51</sup> Douhet thought long and hard about this idea and formulated a strategy for strategic bombardment, utilising bacteriological weapons that would

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<sup>49</sup> Giulio Douhet, *The command of the air* (1921), in David Jablonsky, *Roots of strategy: book 4: military classics* (Mechanicsburg, PA, 1999), p. 278.

<sup>50</sup> *Ibid.*, p. 283.

<sup>51</sup> *Ibid.*, p. 283.



seem inhumane today. Douhet argued that in order to create the biggest impact a strategic bombing force should utilise three types of bombs, firstly high explosive weapons should be used to destroy buildings, secondly incendiary weapons should be used to set fire to the destroyed buildings, and finally bacteriological weapons should be used to keep emergency services away from affected areas to reduce the likelihood of them being able to contain the conflagration.<sup>52</sup> In reaction to the criticism directed at his 1921 publication of *The command of the air*, Douhet published a second edition of the work in 1927. This second edition built on the theories of the first, however his viewpoints were even more radicalized, this was probably in response to his perception that the criticism he had received to date had been unfair.<sup>53</sup> While the theories espoused by Douhet were not new (the French writer Clement Ader and the British writer Sir Frederick Lanchester, were among many who wrote about airpower prior to and during the First World War), his writing did bring together various theoretical strands into a format that received wider attention. As John Buckley so succinctly argues, ‘[...] Douhet had little new to say, but as a propagandist and prophet Douhet proved important, even if retrospectively so’.<sup>54</sup>

The influence of Douhet’s writing was important, his ideas can be seen in the airpower theory of countries such as France, Germany, the Soviet Union and the US, in the inter-war period.<sup>55</sup> However, in the main Douhet’s theories remained insular

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<sup>52</sup> Giulio Douhet, *The command of the air* (1921), in David Jablonsky, *Roots of strategy: book 4: military classics* (Mechanicsburg, PA, 1999), p. 294.

<sup>53</sup> Azar Gat, *A history of military thought : from the Enlightenment to the Cold War* (Oxford; New York, 2001), p.580.

<sup>54</sup> John Buckley, *Airpower in the age of total war* (Bloomington, Ind., 1999), p. 73

<sup>55</sup> Azar Gat, *A history of military thought: from the Enlightenment to the Cold War* (Oxford ; New York, 2001), p. 588

and received widest attention in his native country of Italy. Certainly, other services were aware of Douhet's work during this time, however the strategic bombing theories developed in Britain and the U.S. developed independently of Douhet, but undoubtedly there was an awareness of his work. For example, although Douhet's *The Command of the air* was not translated into English until 1942, excerpts had been translated and were circulating in the US Air Service by 1923.<sup>56</sup> One theorist who met Douhet after the war and was directly influenced by his ideas was General William 'Billy' Mitchell.

### General Billy Mitchell

General Billy Mitchell was a US Army officer, originally from the Signal Corps, who would eventually go on to lead all US air forces in Europe by the end of the First World War. Throughout his career Mitchell was driven, driven by his belief in himself and in his ideas. This manifested itself particularly once Mitchell had decided that airpower represented the single most important military factor in the world after the First World War. He believed that 'airpower [...] has caused a complete rearrangement of the existing systems of national defense'.<sup>57</sup> In 1925 Mitchell published his best-known work, *Winged defense*, this work represented a collage of articles and opinion pieces that Mitchell had previously written and he openly admits that the work was 'thrown together'.<sup>58</sup> While not as well-crafted or structured as Douhet's work, *Winged defense* successfully communicates Mitchell's

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<sup>56</sup> Peter Gray, *Air warfare, history, theory and practice* (London, 2016), p. 42

<sup>57</sup> William Mitchell, *Winged defense* (1925), in David Jablonsky, *Roots of strategy: book 4: military classics* (Mechanicsburg, PA, 1999), p. 421

<sup>58</sup> *Ibid.*, p. 422

key theories. *Winged defense* was not widely read at the time, however Philip Meilinger argues that 'Mitchell remains America's foremost airpower prophet'.<sup>59</sup> The debate as to Mitchell's impact on interwar airpower theory is ongoing and beyond the scope of this introduction, however Mitchell most certainly had an impact on US airpower thinking with his establishment of the Air Corps Tactical School (ACTS). The degree to which his theories influenced the output of ACTS is open to debate, however its establishment alone is very significant. ACTS would provide the incubator for American ideas about strategic bombardment in the interwar period, specifically it developed the concept of high altitude precision daylight bombing (HAPDB). Mitchell did not make many friends during the post war period as his drive to espouse the benefits of airpower took little consideration for his peers. Mitchell's relationship with the navy, but also his own army leadership, was openly hostile, antagonistic and at times bordered on vitriolic. Speaking in 1934 Army Brigadier General Charles E. Kilbourne commented, 'for many years the general staff of the army has suffered a feeling of disgust amounting at times to nausea over statements publicly made by General William Mitchell and those who followed his lead'.<sup>60</sup> It was this inability to tread softly that would lead to Mitchell's court martial in 1925 and his resignation from the Army in February 1926.<sup>61</sup> To a certain extent his resignation from the Army led to him embarking on a 10-year crusade to promote his ideas on air power and its importance in any future conflict. In the ten years before his death in 1936, Mitchell published extensively and toured the US

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<sup>59</sup> Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 102

<sup>60</sup> as quoted in Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 106

<sup>61</sup> Stephen Budiansky, *Airpower: the men, machines, and ideas that revolutionized war, from Kitty Hawk to Gulf War II* (New York, N.Y., 2004), pp 150-1

promoting his ideas. While Billy Mitchell lamented the lack of focus on US Army air power, the United States Marine Corp was heavily utilising air power in Central and South America, the fact that Mitchell seemingly ignored this is somewhat surprising.

Mitchell's key theories as outlined in *Winged defense* were similar to those of Douhet, but contained some key divergences. Ultimately Mitchell believed in the supremacy of airpower over the other services, and argued that 'neither armies or navies can exist unless the air is controlled over them'.<sup>62</sup> Due to this importance Mitchell argued unceasingly for an independent air force, one that held equal power with the army and navy and was controlled by a unified Department of Defence.<sup>63</sup> Mitchell argued that the US forces at the time were inadequate and that ultimately 'the influence of airpower on the ability of one nation to impress its will on another in an armed conflict will be decisive'.<sup>64</sup> Where Mitchell's ideas diverged from Douhet was that Mitchell believed that both air defence and pursuit aviation had a part to play in national airpower strategy, whereas Douhet did not.<sup>65</sup> Also a significant divergence is apparent in relation to the targeting philosophy that underlined each man's theories, whereas Douhet identified civilians as legitimate targets in the era of total war, Mitchell focused more specifically on targeting key enemy infrastructure, however later in his life he 'vacillated about the propriety of bombing civilians'.<sup>66</sup> Mitchell's belief in the importance of 'pursuit' aviation would

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<sup>62</sup> William Mitchell, *Winged defense* (1925), in David Jablonsky, *Roots of strategy: book 4: military classics* (Mechanicsburg, PA, 1999), p. 427

<sup>63</sup> *Ibid.*, p. 484

<sup>64</sup> *Ibid.*, p. 508

<sup>65</sup> David Jablonsky, *Roots of strategy: book 4: military classics* (Mechanicsburg, PA, 1999), p. 419

<sup>66</sup> Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 96

wane within air force circles before the Second World War, although some like Chenault espoused its importance, the key focus would be on bombing.<sup>67</sup>

As mentioned previously John Buckley's opinion of Douhet was that he was a propagandist and prophet, more than he was a theorist, similarly Buckley argues that Mitchell was more of an airpower 'advocate [and] vociferous publicist', than he was a theorist.<sup>68</sup> Mitchell focused too much of his effort on putting airpower on a pedestal, above the more traditional services, and in doing so he minimised the impact his writing could have. While Mitchell certainly was well known within the military establishment in the U.S., his wider influence during this period is minimal. Hap Arnold lamented that despite the work of Billy Mitchell, 'we could not have had any real air power much sooner than we got it'.<sup>69</sup> However, one of the lasting legacies of Mitchell was his establishment of the Air Corps Tactical Schools (ACTS). ACTS would be at the forefront of developing interwar airpower theory in the US.

### ACTS

In the US, as elsewhere in the world, in the wake of the First World War there was a divergence of opinion as to the role that airpower had played, and the role it would play in future conflicts. This divergence of opinion in the US is aptly demonstrated through two quotes, the first from General Pershing (Commanding Officer of the

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<sup>67</sup> Claire Lee Chennault, *The role of defensive pursuit* (1935)

<sup>68</sup> John Buckley, *Airpower in the age of total war* (Bloomington, Ind., 1999), p. 91

<sup>69</sup> Henry H. Arnold, *Global Mission*. (New York, 1949), pp 121-2.

American Expeditionary Force [AEF] in Europe); '...an Air Force acting independently can of its own account neither win a war at present, nor, so far as we can tell at any time in the future', in opposition we have Captain Robert Webster, who stated during an Air Corps Tactical School (ACTS) introductory lecture in 1935, 'airpower is not a new weapon-it constitutes a new force, as separate from land power and sea power as each is separate from the other. It has created a trimorph or trinity of national defense which now consists of land power, sea power and airpower'.<sup>70</sup> If the Army Air Service were to survive and thrive in the post war environment it would need to differentiate itself from the older services. The establishment of the Air Force Field Officers School in 1920, later to be renamed the Air Corps Tactical School (ACTS) in 1926, began the process that would lead to the enunciation and codification of American airpower doctrine and theory that would be central to the early strategic bombing campaigns of the Second World War.

As Peter Faber has argued the development of this theory can be understood as a three-phase process carried out at ACTS. Firstly, in the period 1920-6 the primacy of the bomber was established and the principles of its core employment identified. In the period 1927-34 the concept that would govern American airpower doctrine was expanded and communicated. This concept would be known as high altitude precision daylight bombing, or HAPDB for short. HAPDB was a concept developed by a group within ACTS known as the 'bomber mafia', this concept would be central to the approach known as 'industrial web theory' which involved the precision

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<sup>70</sup> Lt. Col. Peter R. Faber, 'Interwar US army aviation and the Air Corps Tactical School: incubators of American airpower', in Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), pp 183-4.

bombing of an enemy's industrial and economic infrastructure.<sup>71</sup> The third phase outlined by Faber would run from 1935-40 and would involve the formalisation of this theory into doctrine and the development of target lists that would support its employment.<sup>72</sup>

When in July 1941 President Roosevelt sought submissions to a war plan, Lt. Col. Harold Lee George gathered some former ACTS colleagues together and in nine days they created the air portion of the requested plan; AWPD-1, while nominally a list of material needed to win the war, was in effect 'a blueprint for strategic air warfare in Europe'.<sup>73</sup> When the US went to war, it was AWPD-1 that they relied upon. While the theory formulated and refined over twenty years at ACTS was flawed, it did provide a starting point for the development of a war winning strategy, and it would subsequently be the 'basis for the development of modern airpower theory'.<sup>74</sup> Where HAPDB failed was in its belief that strategic bombing could be performed during daylight and that strategic bombers would have suitable armament to enable them to be self-defensive. This view would be disproven in the early sorties flown by the U.S. Eighth Air Force over occupied Europe. The inability of the Norden Bombsight to bomb through cloud, and the lack, at that time, of fighter escorts, led to some early lessons that needed to be learned. However, it is certainly true that this approach would have a significant influence on modern air power theory as espoused most notably by John Warden in the late 1980s and early 1990s,

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<sup>71</sup> W. J. Boyne, 'The tactical school' in *Air Force Magazine* (September, 2003), p. 82.

<sup>72</sup> Lt. Col. Peter R. Faber, 'Interwar US army aviation and the Air Corps Tactical School: incubators of American airpower', in Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 211.

<sup>73</sup> *Ibid.* p. 224.

<sup>74</sup> W. J. Boyne, 'The tactical school', in *Air Force Magazine* (September, 2003), p. 83.

however by this stage technology had developed to the point whereby the vision of ACTS could become operational reality. While ACTS and the U.S. Army Air Force was undoubtedly influenced by the theories of General Billy Mitchell, on the other side of the Atlantic, the theories that lay at the core of the Royal Air Force, were undoubtedly those of Hugh Trenchard.

### Hugh Trenchard

Trenchard represented a polar opposite to General Billy Mitchell in some regards, the latter being confident, brash and populist, the former being particularly inarticulate, however Trenchard's strength was his immense knowledge and sheer determination.<sup>75</sup> As Tami Davis Biddle has noted, 'Trenchard's bureaucratic talents, intransigence, and force of will were to make him a crucial asset to the survival of the still-fragile RAF'.<sup>76</sup> It was sheer determination that would be required to ensure the survival of the RAF in the post war period and then to develop that fledgling service into something that could stand alongside the more established services of the army and navy.

Whereas both Douhet and Mitchell put pen to paper and published their views in monograph form, Trenchard did not, however his theories on airpower can be seen in the doctrine publications of the RAF in the 1920s, in his sparse journal publications and the publication in *Flight* of speeches he gave, and also in the way in which he

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<sup>75</sup> Max Hastings, *Bomber command* (London, 1999), p. 40; Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 47; Wing Commander Sophy Gardner, 'The prophet's interpreter: Sir Samuel Hoare, Hugh Trenchard and their campaign for influence', *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 48-72, p. 52

<sup>76</sup> Tami Davis Biddle, *Rhetoric and reality in air warfare: the evolution of British and American ideas about strategic bombing, 1914-1945* (Princeton, N.J., 2002), p. 81



deployed airpower during this period.<sup>77</sup> The RAF had come into existence on the 01 April 1918 following the publication of *The Smuts Report* into the best organization for British airpower.<sup>78</sup> However, in the immediate post-war period the RAF fought to maintain its independence in the face of drastic budget cuts and rivalry from the older services. Trenchard's determination to ensure this survival is one of his greatest legacies, however from a reading of RAF doctrine publications during and after his reign as Chief of the Air Staff (CAS) one can also discern an airpower theory that resonates still. His ability to promote the RAF was aided by Sir Samuel Hoare in the Air Ministry, between them these men promoted not only the concept of air power but also the idea that the RAF was the best organisation to deliver this new military force. As Sophy Gardner has argued, the appointment of Sir Samuel Hoare was 'arguably one of the most important ministerial appointments in the RAF's history'.<sup>79</sup>

Trenchard's theory of airpower occupies a middle ground between that of Douhet and Mitchell, already discussed. As Philip Meilinger argues, 'they [the RAF] chose the Douhetian objective of morale, but the Tactical School [Air Corps Tactical School] industrial targeting scheme'.<sup>80</sup> Trenchard believed that the key use of airpower was to influence the will of the *enemy* population, he believed the way to accomplish this was not through terror bombing of population centres, as Douhet

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<sup>77</sup> for example, Sir Hugh Trenchard, 'Aspects of service aviation', *The Army Quarterly* 2 (April 1921), pp 10–21; Sir Hugh Trenchard, 'The effect of the rise of air power on war', in *Air power: three papers* (London: Directorate of Staff Studies, Air Ministry, 1946); for Flight archive see <https://www.flightglobal.com/pdfarchive/index.html>

<sup>78</sup> *Report by General Smuts on air organisation and the direction of aerial operations* (August, 1917), available at <https://www.rafmuseum.org.uk/london/whats-going-on/news/read-the-smuts-report/> (accessed 16 August 2018)

<sup>79</sup> Wing Commander Sophy Gardner, 'The prophet's interpreter: Sir Samuel Hoare, Hugh Trenchard and their campaign for influence', *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 48-72, p. 49

<sup>80</sup> Phillip S. Meilinger, *Airwar: theory and practice* (London ; Portland, OR, 2003), p.58

did, but through targeting the industrial infrastructure of an enemy in order to influence the will of the people, specifically the workers, and by extension the whole of the population. While Trenchard was undoubtedly a proponent of strategic bombing, he also had a keen understanding of the tactical role that the RAF could play in supporting ground forces, and indeed this is the area in which he concentrated his resources in the First World War, prior to the establishment of the Independent Air Force. During his time in the First World War, Trenchard learned three key lessons, firstly that air superiority was crucial, secondly that airpower was an inherently offensive weapon, and thirdly that the moral effects of air bombardment were greater than the material affects it could cause.<sup>81</sup> His thoughts on airpower would coalesce with the publication, in 1922, of *CD-22 (Operations)*, the first RAF doctrine publication.<sup>82</sup> While this document represented the first major doctrinal publication of the RAF, it was not without its issues during the drafting stage. Trenchard reviewed proposed changes from the Navy and Army, and immediately after its publication the Staff College began revising it as part of its first course.<sup>83</sup>

*CD-22* very much drew on the lessons of World War I, furthermore it expounded a vision for what the RAF wanted to become. It emphasized three key areas, firstly that the air force must cooperate with land forces, secondly it stressed the importance of the morale effect of air operations and thirdly, it acknowledged the importance of air superiority.<sup>84</sup> *CD-22* was superseded by *API300* published in 1928, *API300*

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<sup>81</sup> Phillip S. Meilinger, *Airwar: theory and practice* (London ; Portland, OR, 2003), p.46

<sup>82</sup> 'Royal Air Force War Manual, CD22 Operations', 1922, TNA, Air 5/299

<sup>83</sup> Neville Parton, 'The development of early RAF doctrine', in *The Journal of Military History*, vol. 72, no. 4 (October, 2008), pp 1155-1178, p. 1173.

<sup>84</sup> 'Royal Air Force War Manual, CD22 Operations', 1922, TNA, Air 5/299, pp 47-8

reiterated the key points of its predecessor, however it differed in that it proclaimed the primacy of strategic bombing above air superiority.<sup>85</sup> What is interesting is that *CD-22* only devoted a single chapter to air policing, something that since 1919 had become the central focus of RAF operations, indeed air policing would be the role that Trenchard would focus on in order to ensure the survival of the fledgling RAF.

Air policing, also known as Air Control, was pivotal in presenting the RAF with a role to play in the post war world. Due to the ever-increasing focus on budgetary restraint, the ability of the RAF to provide a policing function for British overseas colonies at a price point that was significantly less than the army was immense. To cite one example, the ability of the RAF, in conjunction with ground forces, to put down the rebellion in Somaliland at a total cost of £77,000, and in only six weeks, represented a saving of millions to Whitehall, who had considered army proposals that involved two divisions and millions of pounds.<sup>86</sup> While this operation was very much a joint operation, the introduction of airpower into this theatre had a decisive impact on the ability of British forces to rout and ultimately defeat the rebel forces. Based on this success it was unsurprising that the RAF would be looked upon to provide similar services in Iraq, Palestine and Afghanistan, other British colonial territories that required extensive policing.

Although these operations were not always successful, they gave the RAF a role, and protected them from the aspirations of the army and navy to get rid of the third service altogether. Although these operations kept the RAF busy, ‘the RAF’s only

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<sup>85</sup> ‘Royal Air Force War Manual, AP1300’, 1928, RAF Hendon, 017691

<sup>86</sup> Andrew Boyle, *Trenchard* (London, 1962), p. 369

operational experience [in the interwar period] was gained through dropping bombs, usually without opposition, on the hillside villages of rebellious peasants', this was not something that would prepare them well for the forthcoming war.<sup>87</sup> Indeed, it is worth noting that the RAF learned different lessons than their peers during the interwar period, as Richard Overy argues, while other air forces focused on the lessons to be derived from the Spanish Civil War, notably the importance of close air support and air superiority, the RAF believed that strategic bombardment should be the focus of independent air forces. The lessons from Air Control seemed to point to the effect that bombing had on the morale of the targeted population.<sup>88</sup> While Trenchard and his protégés espoused strategic bombardment as the key priority of the RAF, others within the service also discussed the use of tactical airpower, this was the topic of John Slessor's 1936 book *Airpower and armies*.<sup>89</sup>

### John Slessor

John Slessor was an RAF officer, he was a flight commander in World War I, a squadron commander between the wars and he finished The Second World War as deputy commander of Allied air forces in the Mediterranean. Slessor's seminal work, published in 1936, was *Airpower and armies*, and represents a compendium of lectures that he delivered at Camberley in the early 1930s.<sup>90</sup> Slessor made the transition from planning to teaching in the late 1920s. In 1928, he was on the staff of the Directorate of Operations and Intelligence, however by 1930 he was on the staff of the School of Army Co-operation, and would subsequently teach at Camberley.

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<sup>87</sup> Max Hastings, *Bomber command* (London, 1992), p. 39

<sup>88</sup> Richard Overy, *The bombing war, Europe 1939-1945* (London, 2014), pp 48-9

<sup>89</sup> John Slessor, *Airpower and armies* (London, 1936)

<sup>90</sup> *Ibid.*, introduction (no page number)

What is interesting about this book is that an officer who was fundamentally a Trenchardian strategic bombing advocate wrote it, and yet it detailed how armies and air forces should and could work together in a potential future continental conflict. This was undoubtedly due to his work at the School of Army Co-operation in 1930. What is also significant about this work is that an RAF officer delivered the lectures upon which it was based at Camberley, an *army* officer staff college. While exchange staff postings were not unusual, it is interesting at a time when the army and air force were still very much in opposition. Philip Meilinger has called this book 'the best treatise on airpower theory written in English before World War II' and certainly the book represents a significant evolution in British airpower theory.<sup>91</sup> This evolution can be seen in the move away from a purely strategic focus for airpower to one in which airpower supported ground forces. It discussed openly the concept of joint operations and support of the Army, something which senior RAF officers had been loath to do in the preceding twenty years. Furthermore Slessor discussed airpower in the operational sense (i.e. at a theatre level), something that had not been done to a great extent by that time and in this way he advocated that one of the best uses of the air force to support the army would be in the role of interdiction.<sup>92</sup> This interdiction role was solidified in RAF doctrine with the publication of *RAF manual AP1176, employment of Army co-operation squadrons*.<sup>93</sup> It was this role that he felt should occupy air forces, with the result that 'the Air [force] may stop men and their supplies arriving at the battle-field at all'.<sup>94</sup> The emphasis by Slessor on army cooperation was not a singular opinion. Sir Trafford

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<sup>91</sup> Phillip S. Meilinger, *Airwar: theory and practice* (London ; Portland, OR, 2003), p. 67

<sup>92</sup> *Ibid.*, p. 71

<sup>93</sup> 'RAF manual AP 1176, employment of Army co-operation squadrons', 1932, RAF Hendon, 8951

<sup>94</sup> John Slessor, *Airpower and armies* (London, 1936), p. 200

Leigh-Mallory wrote on this topic during this period and his writings can be found in the *Journal of the Royal United Services Institute*.<sup>95</sup> Leigh-Mallory was a significant figure in the RAF and by 1930 had become an expert on Army co-operation, he commanded the School of Army Co-operation from 1927, before taking up a post at the Army Staff College at Camberely in 1930.

In spite of the tone and topic of *Airpower and armies*, Slessor was very much a Trenchardian at heart, his belief was still very much focused on the ability of a strategic bomber force to dislocate and destroy the war making ability and morale of an enemy. It was very much this view that would be at the forefront of RAF theory and doctrine on the eve of the Second World War. As the Second World War proceeded and Allied armies were initially defeated and their air forces proven to be a non-factor, an airpower advocate from the US would write a book that would have a significant impact on airpower theory.

### Alexander de Seversky

Alexander de Seversky was a 'fighter ace, war hero, aircraft designer, entrepreneur, stunt pilot, writer, and theorist'.<sup>96</sup> By 1942 the apparent lessons of the Second World War were becoming clear, at least in some minds. De Seversky believed that the engagements in Norway, during the Battle of Britain, and over Crete, proved emphatically that airpower was the 'first and decisive arena of modern conflict'.<sup>97</sup> De

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<sup>95</sup> Trafford Leigh-Mallory, Wing Commander, DSO 'Air co-operation with mechanized forces' *Journal of the Royal United Services Institution*, vol. 75, no. 499 (1930) pp. 565 – 577

<sup>96</sup> Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 239

<sup>97</sup> Alexander P. De Seversky, *Victory through air power* (New York, 1942), p. 333

Seversky was well positioned to spread the message of airpower. He was a veteran of the Great War, had worked for the US Government in aircraft design, had founded his own aircraft corporation (later to become Republic) and was known and respected within America. Interestingly he perceived his message as directed not at the military establishment, but rather at the wider US population, he believed that only through taking this route would the weight of public opinion force the establishment to wake up to the potential of airpower. Where de Seversky differed from Billy Mitchell and other airpower advocates was that he was unencumbered by service obligations, this is an important point in understanding de Seversky's impact. Peter Gray has argued that because de Seversky was a civilian 'he expressed controversial theories more openly than his military counterparts'.<sup>98</sup> At the time of writing his 1942 book, *Victory through airpower*, deSeversky had no ties to the U.S. Army Air Force, as such his point of view can be said to be of someone who was not influenced by the political manoeuvring associated with inter-service rivalry that was rife during this period.<sup>99</sup> This neutrality meant that he could deliver his message without having to consider the political nuances of inter-service relations, something that his peers like Mitchell, Trenchard and Slessor were certainly influenced by. Furthermore, de Seversky had a technical background and thus his opinions and predictions on airpower technology held more weight.

De Seversky's 1942 book, *Victory through airpower*, would become a *Book of the Month* selection and was read by an estimated 5 million people, furthermore his

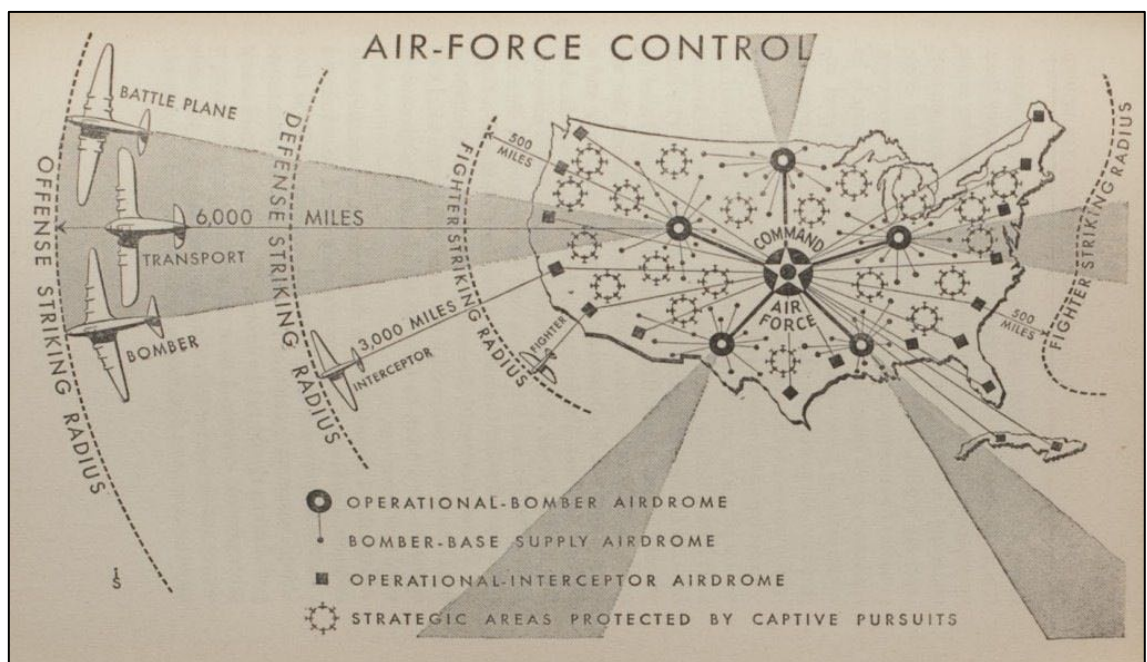
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<sup>98</sup> Peter Gray, *Air warfare, history, theory and practice* (London, 2016), p. 45

<sup>99</sup> Alexander P. De Seversky, *Victory through airpower* (New York, 1942)

book was adapted for the screen and released by Disney in 1943.<sup>100</sup> De Seversky's underlying thesis was not wholly different from that which had gone before. Like Mitchell and Douhet his theories were not very original, however his ability to present a coherent treatise on airpower was what he excelled at. As Philip Meilinger has stated 'he was a synthesizer and popularizer - a purveyor of second hand ideas', however the fact that he reached 5 million readers and translated his ideas onto film bears testimony to the influence he exerted.<sup>101</sup> De Seversky advocated the use of long-range bombers to strike at the heart of the enemy, which is depicted well in this graphic from the aforementioned work:

**Figure 2 - Air Force control**



**Source:** De Seversky, Alexander P., *Victory through airpower* (New York 1942), p. 309.

<sup>100</sup> Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 256

<sup>101</sup> *Ibid.*, p. 239



De Seversky argued that if the US did not develop this capability, and develop it quickly, that the enemy would appear over American skies and deliver untold punishment on the American people. The central premise of *Victory through airpower* was that the lessons of the then three-year-old war needed to be digested and acted upon. De Seversky highlighted eleven key lessons:<sup>102</sup>

1. No land or sea operations are possible without first assuming control of the air above
2. Navies have lost their function of strategic offensive
3. The blockade of an enemy nation has become a function of airpower
4. Only airpower can defeat airpower
5. Land based aviation is always superior to ship-borne aviation
6. The striking radius of airpower must be equal to the maximum dimensions of the theatre of operations
7. In aerial warfare the factor of quality is relatively more decisive than the factor of quantity
8. Aircraft types must be specialized to fit not only the general strategy but the tactical problems of a specific campaign
9. Destruction of enemy morale from the air can be accomplished only by precision bombing
10. The principle of unity of command, long recognized on land and on sea, applies with no less force to the air
11. Airpower must have its own transport

De Seversky's points may have seemed valid at the time, a mere three years into the war, however like his forbears he fell down in a number of particular areas. Firstly,

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<sup>102</sup> Alexander P. De Seversky, *Victory through airpower* (New York, 1942), pp 123-49

de Seversky's work is based significantly on future capability and as such is more prophecy than theory.<sup>103</sup> The second is that along with his pronouncements on airpower went a scathing attack of the capability and future relevance of the Navy, finally, his message was muddled in later years by ill-advised and surprising pronouncements, in de Seversky's case the latter point took the form of a belittling of the impact that atomic and later nuclear weapons had on military strategy.<sup>104</sup> Undoubtedly the advent of the nuclear age was to have a profound effect on military strategy, and on theory.

### Nuclear Theory

In the first twenty years after the end of the Second World War, nuclear strategy or theory, developed several key concepts that define it to this day. Concepts such as *deterrence*, *mutually assured destruction* and *credibility of threat* laid the foundation for nuclear theory. The irony is that very quickly theorists came to the realization that the only credible approach was one that did not involve conflict between two nuclear powers. Hence, we see the development of ideas like *deterrence* and *mutually assured destruction*. This belief was succinctly communicated in *National Security Decision Memorandum 242*, from 1974, it stated that the

fundamental mission of U.S. nuclear forces is to deter nuclear war [...] in the event that escalation cannot be controlled, the objective for employment of nuclear forces is to obtain the best possible outcome for the United States and its allies.<sup>105</sup>

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<sup>103</sup> Edward Meade Earle (ed.), *Makers of modern strategy* (Princeton, 1944), p. 502

<sup>104</sup> Col Philip S. Meilinger (ed.), *The paths of heaven, the evolution of airpower theory* (Maxwell AFB, Alabama, 2001), p. 260

<sup>105</sup> 'National security decision memorandum 242' (1974), pp 1-2

It is not surprising that several nuclear strategists came from a background of game theory, none more prominent than Thomas Schelling. Game theory allowed strategists to run numerous scenarios to see what the outcome of a nuclear conflict would be, as mentioned earlier, unsurprisingly, theorists quickly realized that no winner would emerge and so a delicate balance of power was required. Bernard Brodie was another significant voice amongst nuclear theorists. Brodie's central premise was that deterrence was now the key role of nuclear weapons.<sup>106</sup> However, in 1979 Colin Gray argued that in the period since the Second World War nuclear strategy and theory had been too concerned with the concept of deterrence and the balance of power, and had not actually addressed the fundamental principles of strategy that would need to be used should a nuclear conflict break out. In his paper, *Nuclear strategy, the case for a theory of victory*, Gray argues that no matter how well deterrence has or will work, fundamentally there is always the possibility for nuclear conflict if nuclear weapons exist, thus there had to be strategy dictating how nuclear weapons should be employed.<sup>107</sup>

Thankfully so far, this conflict has not occurred, however Gray's argument is sound and relates in many ways to the perceived deficit in modern airpower theory. Prior to the Second World War there were several notable airpower theorists, as outlined earlier, after the war nuclear strategists came to the fore. This pivot towards nuclear theory is encapsulated in the writing of one of the eminent interwar airpower

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<sup>106</sup> Bernard Brodie, *The absolute weapon, atomic power and world order* (New Haven, Connecticut, 1946), available at <https://www.osti.gov/opennet/servlets/purl/16380564-wvLB09/16380564.pdf>, accessed 02 September 2018

<sup>107</sup> Colin S. Gray, 'Nuclear strategy, the case for a theory of victory', in *International Security*, vol. 4, no. 1 (2014), pp 54–87

theorists, John Slessor, as Chief of the Air Staff in the 1950s Slessor's writing became more and more focused on the nuclear paradigm.<sup>108</sup>

With the conflicts in Korea and Vietnam there would be a requirement for airpower theory to once again address some fundamental problems that were experienced during these two conflicts. In Korea, the air force set about relearning lessons that had been forgotten from the Second World War, Korea, like the Second World War, would be one in which tactical airpower would play a key role. Subsequently, when US involvement in Vietnam began, tactical airpower was initially demoted; civilian and military leaders sought once again to assert the primacy of strategic airpower as a decisive war winning strategy. Much to the disagreement of military leaders, the civilian decision-makers would decide that airpower should be used in a graduated manner, thus the concept of *gradualism* was adopted, and it would be this theoretical concept that would define the approach to the strategic air war in Vietnam.

### Gradual Escalation

At the outset of the war in Vietnam the United States faced several significant challenges to its efficient use of airpower. As Philip Meilinger has argued 'they had the wrong doctrine, the wrong aircraft, the wrong ordnance, and the wrong C 2 system'.<sup>110</sup> Meilinger's conclusions were based on the type of war that the US faced, which initially was an unconventional war. However, the US believed that they could circumvent these problems by moulding the war to suit their capabilities, to

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<sup>108</sup> Sir John Slessor, *The great deterrent* (London, 1957)

<sup>110</sup> Philip Meilinger, *Airmen and air theory, a review of the sources* (Maxwell AFB, Alabama, 2001), p. 135

this end they believed that a strategic bombing campaign against North Vietnam would be able to coerce the North Vietnamese into stopping their aggression against the South. The theoretical framework for this approach was to become known as *gradual escalation*. Gradual escalation was a theory put forward by Thomas Schelling in his 1966 book *Arms and Influence*.<sup>111</sup> Schelling argued that the use of strategic airpower should be done in a graduated manner to communicate to your adversary that if they did not comply with your demands that the intensity of the bombing would gradually increase. Pauses in activity should be used to allow the enemy to consider their options and conclude that continuing their current course of action would be futile. There were several issues with *gradual escalation* and its use in Vietnam. Firstly, in the period during which the initial strategic air campaign was waged (1965-8) the conflict in Vietnam was very much an unconventional war. Guerrilla forces operating in the South relied very little on supply from the North and lived mainly from local resources, furthermore the North had little by way of strategic targets for the campaign to destroy, thus the amount of coercion that could be gained during this phase of the war was minimal. As Meilinger surmises ‘we tried Schelling’s theory in Vietnam but found it wanting’.<sup>112</sup> This points to a lack of understanding by the US of their enemy.

Many have argued that the use of strategic bombing later in the war was much more successful and essentially forced the North Vietnamese to negotiate a settlement.<sup>113</sup>

However this success needs to be put in context, by this time the nature of the

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<sup>111</sup> Thomas Schelling, *Arms and influence* (New Haven ; London, 2008)

<sup>112</sup> Philip Meilinger, *Airmen and air theory, a review of the sources* (Maxwell AFB, Alabama, 2001), p. 137

<sup>113</sup> Walter J. Boyne, ‘Linebacker II’ in *Air Force Magazine* (November, 1997), p. 57, also see Robert Pape, *Bombing to win, air power and coercion in war* (Ithaca; London, 1996)

conflict in Vietnam had changed. It now resembled a conventional conflict, in which the North Vietnamese could not cope with the casualties in men and materials that the US was able to inflict. There have been arguments posited to say that the theory of gradualism has its place in airpower theory, and that it was successful during the conflict in Kosovo in 1999, however this is a hotly contested issue and one in which much more research and analysis is required.<sup>114</sup> After the end of the Vietnam War we see a re-appraisal of the American armed forces, including the Air Force, airpower theorists would also make a departure from the more traditional approaches of their forbears. As Philip Meilinger has argued:

the various air theorists tended to become distinguished from one another based on their belief as to what was the main centre of gravity that should be the focus of a strategic bombing campaign. They did, however, tend to assume that air warfare was an inherently economic weapon - similar to the blockades and disruption of sea lanes characteristic of sea power. Modern air theorists have begun to move away from this economic/industrial focus and turned instead towards a more leadership or culturally-centered model.<sup>115</sup>

### John Boyd

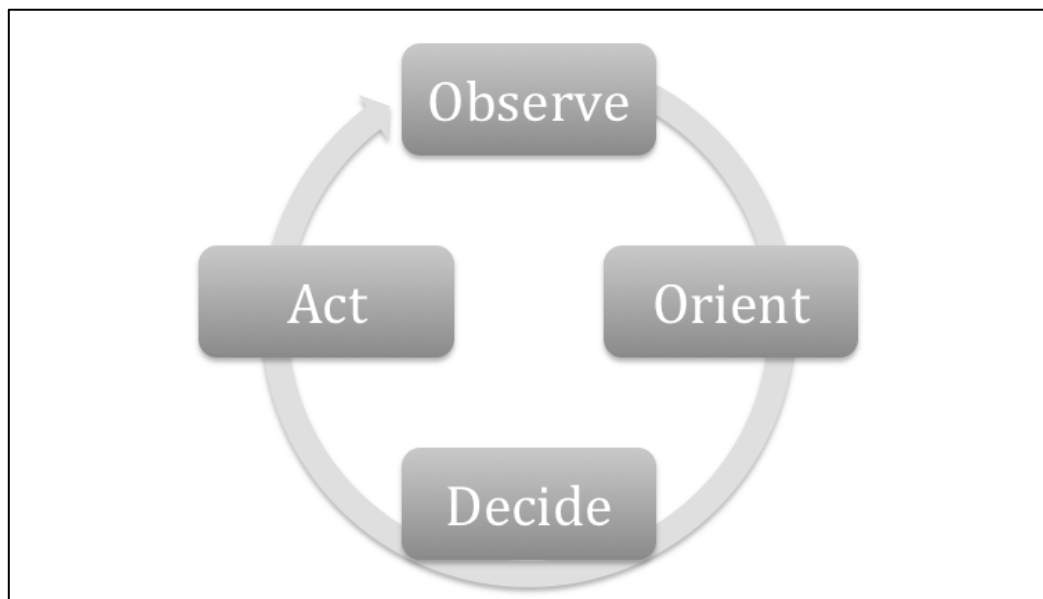
One of these modern airpower theorists was Colonel John Boyd. Boyd was a United States Air Force fighter pilot who fought in Korea and Vietnam. The air combat lessons of these two conflicts were clear to Boyd. If you could think and act faster than your opponent you would win. Boyd promoted this idea through a cyclical construct he called the OODA loop (observe, orient, decide, act).

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<sup>114</sup> P.W. Huggins, *Airpower and gradual escalation: reconsidering the conventional wisdom* (School of Advanced Airpower Studies, Maxwell AFB, Alabama, 2000)

<sup>115</sup> Philip S. Meilinger, *Airwar: theory and practice*, in Cass series--studies in airpower, (London ; Portland, OR, 2003), pp 170-86, at p. 170.

**Figure 3 - John Boyd: The OODA Loop**



**Source:** recreated from, John Boyd, *Patterns of conflict*<sup>116</sup>

Boyd argued that in air-to-air combat the pilot who could progress through this decision cycle faster than his opponent would have a decided advantage, also the result of this speed would be to slow down the OODA loop of your adversary, thus ensuring victory. It is important to note that the OODA loop is cyclical, and not a single event, thus it is important to continue the cycle.<sup>117</sup> Boyd stated that the most important stage of the loop was the orient phase, within this phase was a process of creation and destruction, in which you can breakdown and reconstruct elements and use them to your advantage, 'put differently, the aim of Boyd's maneuver warfare is to render the enemy powerless by denying him the time to mentally cope with the rapidly unfolding, and naturally uncertain, circumstances of war'.<sup>118</sup> Although

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<sup>116</sup> John R. Boyd, *Patterns of conflict*, available online at <http://www.projectwhitehorse.com/pdfs/boyd/patterns%20of%20conflict.pdf> (accessed 01 February 2014)

<sup>117</sup> Peter Gray, *Air warfare, history, theory and practice* (London, 2016), p. 49

<sup>118</sup> David S. Fadok, *John Boyd and John Warden: airpower's quest for strategic paralysis* (School of Advanced Airpower Studies, Maxwell AFB, Alabama, 1995), p. 14.

Boyd never published a monograph of his ideas, the core of his beliefs are to be found in a presentation that he worked on for a number of years entitled *Patterns of conflict*.<sup>119</sup> Later Boyd would argue that his theories had applicability in a wider military historical context, and helped in understanding victory in conflict. While this assertion is questionable, what Boyd did in expanding the applicability of his theory was to highlight the fact that if you can disrupt the enemy's thought processes at the highest level, then this can lead to significant advantages.<sup>120</sup>

Boyd was important within an RAF context. Obviously, his experiences in Korea were relevant to the RAF, in fact his flight leader in Korea was an RAF exchange officer called Jock Maitland. Furthermore, his work on fighter development would have an influence on British thinking in this area, in particular in the wake of the Falklands War. Boyd's work on developing the next generation of US fighter aircraft, which would become the ubiquitous F-16, certainly influenced the British as they too embarked on the development of a new fighter for the RAF. In 1983, a mere year after the Falklands conflict, the British would embark on the *Future European Fighter Aircraft programme*.

Another theorist who influenced the RAF on contemporary airpower theory was Colonel John Warden.<sup>121</sup>

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<sup>119</sup> John R. Boyd, *Patterns of conflict*, available online at <http://www.projectwhitehorse.com/pdfs/boyd/patterns%20of%20conflict.pdf> (accessed 01 February 2014)

<sup>120</sup> Philip S. Meilinger, *Airmen and air theory, a review of the sources* (Maxwell AFB, Alabama, 2001), p. 142

<sup>121</sup> The influence of Boyd and Warden on contemporary RAF thinking would seem to be natural, however it is difficult to support this influence with documentary evidence. This would represent an interesting and beneficial area of study for future work.



## John Warden

In 1988 John A. Warden III published a monograph entitled *The air campaign: planning for combat*, this work was the result of research conducted during study at the National War College.<sup>122</sup> *The air campaign* focused on the operational level of air warfare and discussed how an operational commander should approach a given situation. Warden extensively used historical examples to demonstrate his points. After this Warden argued that at the strategic level the main target for any air campaign should be an enemy's leadership. Warden demonstrated this through his five-ring model:

**Figure 4 – John Warden: Five-Ring Model**



**Source:** created by the author.

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<sup>122</sup> Colonel John A. Warden III, *The air campaign* (Washington, 1991)

Warden's theory was that the priority in targeting should be the inner ring of the five-ring model and that target priorities should then emanate out from this. As Warden states 'the leaders, are at the strategic center, and in strategic warfare must be the figurative, and sometimes the literal, target of our every action'.<sup>123</sup> It is argued that the precision available in modern airpower allows for this exactitude in targeting, as Charles Dunlap argued:

Where once airpower pioneers sought to use bombing to crush the morale of entire populations, the technological prowess of today's airpower creates opportunities for airmen to impose extreme stress on *specific* individuals and groups.<sup>124</sup>

This thinking was not the norm in the late 1980's. US military doctrine then emphasized the concept of *AirLand Battle*, that essentially focused on the use of airpower in support of ground forces. Warden believed that in essence the fielded forces of the enemy were the least significant target set, 'fighting is not the essence of war, nor even a desirable part of it. The real essence is doing what is necessary to make the enemy accept our objectives as his objectives'.<sup>125</sup> What Warden's theory did was to hark back more to the interwar airpower theorists, who at the time advocated the strategic benefit of airpower, over its tactical and operational utility. Warden argued that if you could attack and disrupt the leadership of the enemy then the potentiality existed for a 'house of cards' scenario. Warden's theories would be put to the test when he was involved in planning the air campaign against Saddam

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<sup>123</sup> Colonel John A. Warden III, 'The enemy as a system' in *Airpower Journal* (Spring, 1995), p. 3

<sup>124</sup> Charles J. Dunlap Jr., 'Airpower', in Thomas Rid and Thomas Keaney (eds.), *Understanding counterinsurgency, doctrine, operations, and challenges* (Oxon, UK, 2010), p. 105

<sup>125</sup> *Ibid.*, p. 14

Hussein's Iraq in the First Gulf War. The efficacy of the strategic air campaign in the First Gulf War is still very much debated,<sup>126</sup> however the First Gulf War provides an example of how airpower theorists still focus on the strategic effect that they believe airpower can offer.

From an RAF perspective, the influence of Warden would appear to be understandable. As the main coalition partner in the First Gulf War, the RAF and USAF worked closely to execute the air campaign that was architected by Warden and ultimately executed by David Deptula.

While Warden's theory very much focused on targeting leadership, another theorist emphasized the power of coercive airpower, however this coercion would be achieved through targeting an enemy's military capability.

### Robert Pape

Robert Pape in his 1996 book *Bombing to win: airpower and coercion in war* argues that as the ability of the American public to tolerate military casualties has waned, the use of airpower in overseas conflict has risen, he argues that this has led civilian leaders to view the use of coercion as a potential shortcut to military success. In this book Pape looked to 'determine the conditions under which coercion has succeeded

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<sup>126</sup> for example Daryl G. Press argues that, 'Although air power played an important role in the coalition's victory, its role has been exaggerated and misunderstood'; Daryl G. Press, 'The myths of air power in the Persian Gulf War and the future of warfare', in *International Security*, vol. 26, no. 2 (Fall, 2011), pp 5-44, p. 7

and failed in the past in order to predict when it is likely to succeed and fail in the future', he argued that 'coercion, at least in conventional wars, succeeds when force is used to exploit the opponent's military vulnerabilities'. Pape's theory essentially argues that to achieve coercive success in conventional conflict, the approach should be one based on denial, rather than on punishment. Denial essentially is the targeting of an enemies' military capability, to coerce the enemy into believing that his military strategy will not work.<sup>127</sup>

The concepts of coercion and denial are complex ones, however in a conventional military context they can be very useful, particularly in a situation where your opponent is weaker than yourself. In the realm of unconventional warfare, the idea of coercion is very valuable, however in the main it would be the norm for strategies of coercion in this operational environment to be promulgated by political forces, such as the police, as opposed to military forces. However, as will be demonstrated later in this work, at times airpower was used very much to pursue strategies of coercion and denial, most notably in the Air Control policies of the RAF in the interwar years.

### Airpower Theory Conclusion

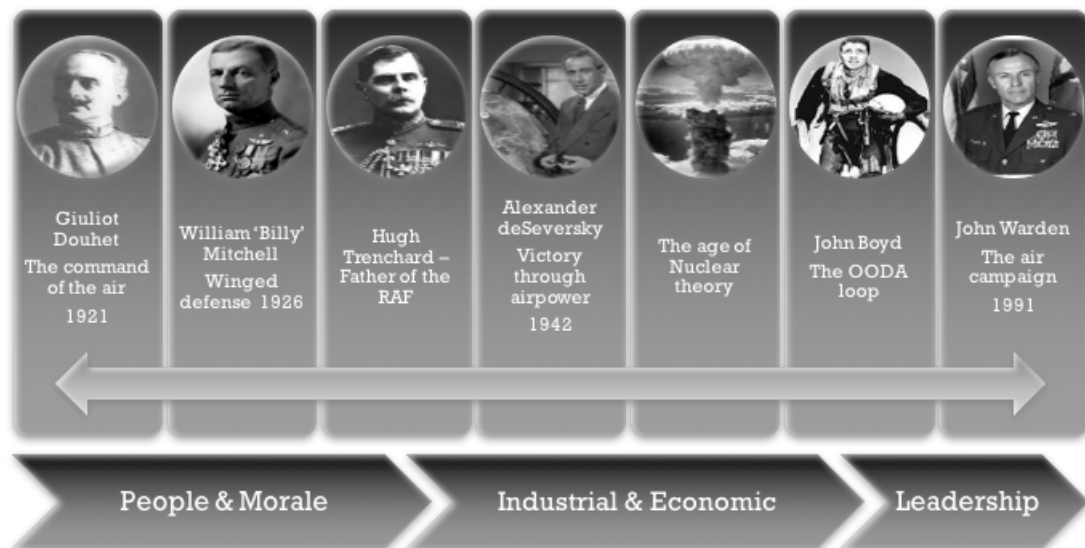
The preceding sections have outlined the evolution of airpower theory from the end of the First World War until the 1990's. There are several conclusions that can be drawn from this evolution. The first is that in the main airpower theorists have argued for the strategic employment of airpower in conflict, they believe that

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<sup>127</sup> Robert A. Pape, *Bombing to win: air power and coercion in war* (Ithaca; London, 1996), p. 1

airpower is an inherently strategic weapon. This focus on strategic effect has meant that the use of airpower in small wars has been nearly totally neglected from a theoretical perspective until more recently. The second point is that the evolution of airpower theory can be said to centre on the theory of targeting. There is a clear evolution in thought about the most important target set for airpower, this evolution has moved from a focus on people/morale, through industrial/economic targeting, to one focused on leadership (see graphic below).

**Figure 5 - The Evolution of Airpower Theory**



**Source** – Created by the author.

While this evolution is interesting, it must be remembered that it was not a linear progression, however it is a useful lens through which to think about the evolution of airpower theory. In the context of the use of airpower in small wars, all of these target sets should play a role in the use of airpower in this environment. What is also interesting when analysing the evolution of airpower theory is the golden periods. Undoubtedly the first golden age was during the interwar period, this is where the fundamental theories of airpower were worked out. We then see a significant pivot

in the post war period to a discussion dominated by the nuclear dimension. This pivot is epitomised in John Slessor. A man in the 1930s writing about army air force cooperation, by the 1950s he was talking about nuclear deterrence.<sup>128</sup> Finally we see a second golden age of airpower theory that encompasses the work of John Boyd and John Warden, amongst others.

To provide further context for this work, it is important at this stage to provide a brief overview of counterinsurgency (COIN) theory, and how it has developed over the last one hundred years.

### ***Counterinsurgency Theory***

The concept of insurgency and counterinsurgency is not new. However, one of the reasons it is so hard to comprehend is the ever-changing semantics that accompanies it. In essence, an insurgency in its most basic form is an armed opposition to the legitimate state power, thus counterinsurgency is the strategy or tactics used to defeat an insurgency. James Kiras' definition of irregular warfare is apt in this regard as in the main the tactics used by insurgents are irregular or unconventional,

irregular warfare is defined as the use of violence by sub-state actors or groups within states for political purposes of achieving power, control and legitimacy, using unorthodox or unconventional approaches to warfare owing to a fundamental weakness in resources or capabilities.<sup>129</sup>

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<sup>128</sup> Sir John Slessor, *The great deterrent* (New York, 1957)

<sup>129</sup> James D. Kiras, 'Irregular warfare', in David Jordan (et al), *Understanding modern warfare* (Cambridge, 2008), p. 232.

As mentioned counterinsurgency is not new and has been around ever since armed conflict began, however in the context of this work we will focus attention on counterinsurgency theory of the late 20<sup>th</sup> and 21<sup>st</sup> century. Prior to the Second World War there were two key works that attempted to formalize the theory of deploying military power in small wars, these were *Small wars, their principles and practice*, by Major C. E. Callwell, and the *Small wars manual*, published by the US Marine Corps.<sup>130</sup>

### Major Callwell

Major Callwell published his work based on his experience of serving overseas with the British Empire; in particular, he was deployed in the Afghan War of 1880, and also the Second Boer War that broke out in 1899.<sup>131</sup> First published in 1896, with revised editions appearing in 1899 and 1906, Callwell produced the work to provide ‘a sketch of the principles and practice of small wars’; something that he felt was not covered sufficiently in more traditional texts.<sup>132</sup> Callwell’s central premise was that irregular warfare must be carried out using a different approach than traditional conventional warfare; furthermore, the approach utilized ‘must be modified to suit the circumstances in each particular case’.<sup>133</sup> Callwell’s work was very much of its time and represented the type of operations one would expect of a colonial power, however some of his key concepts had enduring value. Callwell argued that

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<sup>130</sup> Major C. E. Callwell, *Small wars. Their principles and practice* (3rd ed., London 1906), United States Marine Corps, *Small wars manual* (Washington, 1940)

<sup>131</sup> Major John P. Sullivan, *The Marine Corps’ small wars manual and Colonel C.E. Callwell’s small wars - relevant to the twenty-first century or irrelevant anachronisms?* (Marine Corps University, Quantico, Virginia, 2006), p. 23.

<sup>132</sup> Major C. E. Callwell, *Small wars. Their principles and practice* (3rd ed., London 1906), p. 2.

<sup>133</sup> *Ibid.*, p. 3.

conventional forces must use their strengths against the insurgent's weaknesses, and to achieve success commanders must be flexible in their approach.<sup>134</sup> Many of Callwell's theories would be revisited after the Second World War when small wars would define a generation of warfare. The other seminal work to be published in the first half of the twentieth century would be the United States Marine Corps *Small Wars Manual*.

### USMC Small Wars Manual

The *Small Wars Manual* was first published in 1940 and in essence was an extensive 'lessons learned' document, drawing upon the experiences of the Marine Corps in the interwar period, it represented twenty years of lessons learned while fighting small wars in the Caribbean and Central America.<sup>135</sup> During this period so called small wars represented the 'normal and frequent operations of the Marine Corps', indeed in the preceding 134 years the Marine Corps 'landed troops 180 times in 37 countries'.<sup>136</sup> It was this vast experience that led the Marine Corps to realise that engagement in small wars was very different than conventional operations, small wars by their nature tended to be highly politicised whilst also relying heavily on diplomatic efforts.<sup>137</sup> In particular the Marine Corps identified key areas that resonate particularly strongly in contemporary operations, these included the importance of stable executive agencies, carrying out routine police functions, and

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<sup>134</sup> James D. Kiras, 'Irregular warfare', in Jordan, David (et al), *Understanding modern warfare* (Cambridge, 2008), p. 249.

<sup>135</sup> Major John P. Sullivan, *The Marine Corps' small wars manual and Colonel C.E. Callwell's small wars - relevant to the twenty-first century or irrelevant anachronisms?* (Marine Corps University, Quantico, Virginia, 2006), p. 1.

<sup>136</sup> United States Marine Corps, *Small wars manual* (Washington, 1940), p. 2.

<sup>137</sup> *Ibid.*, p. 11.



also the ultimate goal of withdrawing from the theatre of operations.<sup>138</sup> Interestingly for this period the *Small Wars Manual* also discussed the use of aviation in this operational environment. After the Second World War, there was little emphasis on small wars or counterinsurgency from a theoretical perspective, however this would change with the increase in colonial wars in Africa, the Middle East and South-East Asia. Another significant work to be published at the time was *Counterinsurgency warfare, theory and practice*, by David Galula.<sup>139</sup> Although Galula's work was well known in France during the 1960s, his impact on British, and in particular US, thoughts on counterinsurgency would not be felt until the 2000's.

### David Galula

Having graduated from St. Cyr military academy in 1939, David Galula would go on to serve in the French army in North Africa, Italy, and France during the Second World War and would later serve in China, Greece, Indochina and Algeria. In 1964 Galula published *Counterinsurgency warfare* while on a fellowship at Harvard, he would die three years later. 'What we propose to do [with this work] is to define the laws of counterrevolutionary war, to deduce from them its principles, and to outline the corresponding strategy and tactics', this purpose for Galula was driven by the fact that although many had talked about counterinsurgency, few had condensed its laws and principles into a single tract that could be used to systematically approach the problem of counterinsurgency at the strategic, operational and tactical level.<sup>140</sup> Galula was writing in a period when communist revolutionary war was endemic, this

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<sup>138</sup> United States Marine Corps, *Small wars manual* (Washington, 1940), p. 5.

<sup>139</sup> David Galula, *Counterinsurgency warfare, theory and practice* (Westport, CT, 1964)

<sup>140</sup> *Ibid.*, p. xiii.

was coupled with the post-war colonial collapse, and while these points show clearly throughout Galula's work, they do not detract from its impact. Galula understood that unlike conventional war where military action was the principle instrument, 'in the revolutionary war [...] political action remains foremost throughout the war'.<sup>141</sup> Galula also argued that rather than the destruction of the insurgent force being the primary aim of the counterinsurgent; rather it should be the protection of the population. Only once this has been achieved will the counterinsurgent have the upper hand. Galula's work would once again come to prominence with the experiences of the modern-day conflicts in Afghanistan and Iraq. From a British perspective, one of the most influential theorists on counterinsurgency was Robert Thompson.

### Robert Thompson

Robert Thompson is widely acknowledged as one of the most significant theorists on British COIN. His experiences in the Malayan Emergency between 1948 and 1960 provided the basis upon which he would build his principles of COIN. These ideas coalesced into five core principles:

1. The government must have a clear political aim, to establish and maintain a free and independent state which is politically and economically viable
2. The government must function in accordance with the law
3. The government must have an overall plan. This plan must strike an essential civil-military balance

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<sup>141</sup> David Galula, *Counterinsurgency warfare, theory and practice* (Westport, CT, 1964), p. 5.

4. The government must give priority to defeating political subversion
5. A government must secure its base areas first<sup>142</sup>

The enduring focus of Thompson's work is the primacy of political over military means. This is as applicable today as it was when Thompson was writing. Theorists like Thompson and Galula are known as the classical theorists of COIN, the neo-classicists are all contemporary commentators on modern counterinsurgency theory.

### Modern Counterinsurgency Theory

With the insurgencies in Afghanistan and Iraq unfolding following conventional operations in both of those countries, the theory and analysis of counterinsurgency has once again come to prominence. As Thomas Keaney and Thomas Rid state in their introduction to *Understanding counterinsurgency*:

In the years after 2004, a conceptual reorientation of gigantic proportions took place inside the US armed forces. [...] The debate's range of ideas and the number of its publications, as a result, has assumed almost encyclopedic proportions.<sup>144</sup>

At the forefront of these new discussions has been several authors including; Lorenzo Zamberardi, David Kilcullen, John Nagl and Rupert Smith. All of whom have emphasised several points that are enduring. The importance of winning the support of the population (so called 'hearts and minds'), the primacy of the political

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<sup>142</sup> Colonel (ret'd) Michael Crawshaw, *The evolution of British coin*, JDP 3-40, available at [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/572962/archive\\_doctrine\\_uk\\_jdp\\_3\\_40\\_paper\\_coin\\_doctrine.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/572962/archive_doctrine_uk_jdp_3_40_paper_coin_doctrine.pdf) (accessed 23 September 2017)

<sup>144</sup> Thomas Rid and Thomas Kearney (eds.), *Understanding counterinsurgency, doctrine, operations, and challenges* (Oxon, UK, 2010), p. 2

over the military, the tactics of ‘clear, hold and build’, and also a new-found appreciation of the importance of the cultural and religious dimension of counterinsurgency operations.

Zambernardi argues that the lessons learned from counterinsurgency operations over the last 100 years are enduring and that in that sense:

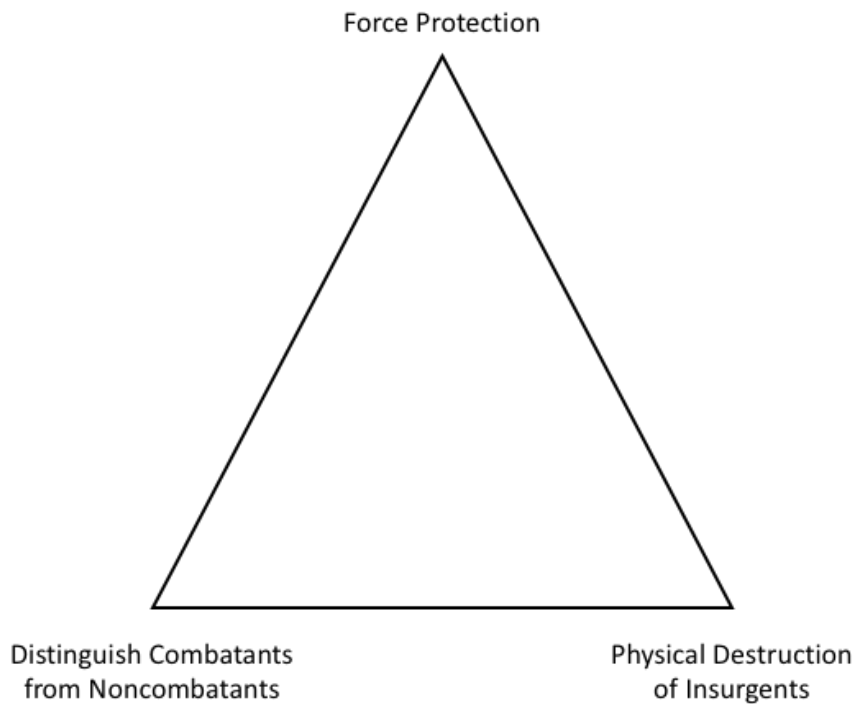
Counterinsurgency doctrine [...] has experienced no radical change since its original development. It was originally, though not systematically, formulated in the twentieth century by none other than the British officer, T.E. Lawrence, and later extended, on the basis of the writings of Mao, by a variety of counterrevolutionary strategists such as the French theorists of *la guerre revolutionnaire*. Even the new counterinsurgency doctrine devised by General David Petraeus in Iraq and Afghanistan does not represent a fundamental shift away from its traditional understanding, which sees this type of conflict as a contest for the support and control of population and, in turn, places the security of the populace at the hub of military operations.<sup>146</sup>

Zabernardi suggests that the succesfull counterinsurgent faces a trilemma, there are three key goals of the counterinsurgent, however only two at any time can be successfully prosecuted. Zabernardi illustrates this trilemma with the following graphic:

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<sup>146</sup> Lorenzo Zambernardi, ‘Counterinsurgency's impossible trilemma’, in *The Washington Quarterly*, vol. 33, no. 3 (2010), pp 21–34, p. 22

**Figure 6 – Zabernardi’s Impossible Trilemma of Counterinsurgency**



**Source** – Lorenzo Zambarnardi, ‘Counterinsurgency’s impossible trilemma’, in *The Washington Quarterly*, vol. 33, no. 3 (2010), pp 21–34, p. 21

Zabernardi concludes by stating that the key to the successful outcome of counterinsurgency operations is the capacity of political leaders to understand and accept human costs.

David Kilcullen honed his theoretical perspectives on counterinsurgency from his first hand experience of the conflicts in Iraq, Afghanistan and elsewhere. The abiding principle of Kilcullen’s view of counterinsurgency is that:

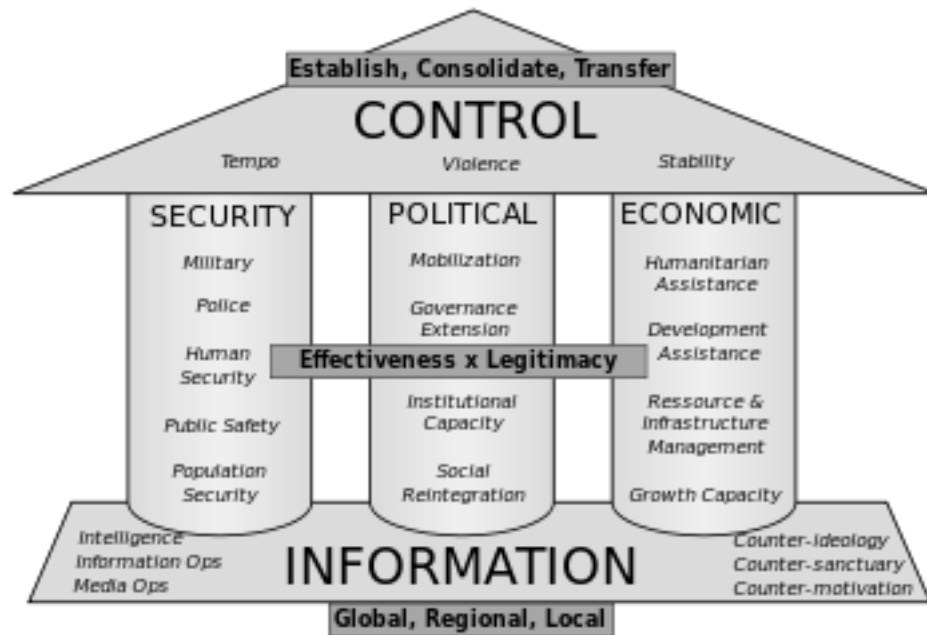
There are no fixed, standard operational techniques in COIN. It is a form of “counter-warfare” that morphs in response to changes in the character of an insurrection.<sup>147</sup>

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<sup>147</sup> David Kilcullen, ‘Counterinsurgency in Iraq: theory and practice, 2007’, (2007) available at <http://usacac.army.mil> (accessed 17 April 2014)

From this viewpoint Kilcullen created what he describes as the three pillars of counterinsurgency, these are represented in the graphic below:

**Figure 7 - David Kilcullen, Three Pillars of Counterinsurgency**



**Source** – David Kilcullen, ‘Counterinsurgency in Iraq: theory and practice, 2007’, (2007) available at <http://usacac.army.mil> (accessed 17 April 2014)

David Kilcullen has held influential posts within the US, including, senior counter-insurgency advisor to General David Petraeus in 2007-08, and also special advisor for counter-insurgency to Secretary of State Condoleezza Rice.

John Nagl’s work on counterinsurgency has focussed in the main on the aspect of organisational learning and as such will be dealt with in the next section.

In *The utility of force*, Rupert Smith argues that so called ‘war amongst the people’, is now the predominant form of military conflict and it is within this context that this

work attempts to understand the historical and contemporary role, if any, for airpower in small wars.<sup>148</sup>

While the above sections have outlined the theoretical evolution of both airpower and counterinsurgency thought, before proceeding further it is important to provide a quick survey of where there has been a theoretical confluence between these two areas. The description of this section as a short survey is apt, as from a theoretical perspective there has been little emphasis on airpower within counterinsurgency. A telling example of this is that when the US Army published *FM 3-24*, its new counterinsurgency manual in 2006, it dedicated only four pages to the role of airpower in this operational environment.<sup>149</sup> This doctrinal neglect has followed the theoretical neglect. The clear majority of airpower theorists (from Douhet all the way through to Warden), as outlined earlier in this chapter, have had little if anything to say about this topic. This is not surprising, especially considering the ‘hearts and minds’ approach to modern counterinsurgency operations. The role of airpower within this environment is an uncertain one. In the post- Second World War era, the perception was that the key roles for airpower in small wars revolved around air-mobility, air-lift and reconnaissance, and that there was not a significant offensive role for airpower in counterinsurgency. This perception is and was wrong, as will be shown in subsequent chapters, offensive airpower played a significant role in this operational environment, from the 1920s right through to the present day. For example in modern counterinsurgency operations one strategy that has come to the fore is that of ‘decapitation’, where counterinsurgents target insurgent leaders with

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<sup>148</sup> Rupert Smith, *The utility of force: the art of war in the modern world* (London ; New York, 2005)

<sup>149</sup> ‘Army Field Manual 3-24: Counterinsurgency’, (December 2006), available at <https://www.hsdl.org/?abstract&did=468442>

the expectation that this will have a negative impact on the insurgent organisation, airpower is playing a significant role in enabling this strategy.<sup>150</sup> Furthermore, in recent times with the unfolding of operations in Afghanistan and Iraq there has been an increasing call from within air forces to define what a potentially more important role within counterinsurgency operations may be. Writers like Philip Meilinger and Dennis Drew have argued that airpower has a role to play, however as yet a convincing holistic thesis has yet to be put forward.<sup>151</sup>

Through an analysis of the evolution of doctrine and theory in this area, and a survey of the historical use of airpower in small wars, it is the hope of this work to attempt to answer the question; to what extent can airpower play a role in counterinsurgency operations in the twenty-first century?

### ***Organisation Learning***

During this period, Royal Air Force officers began to amass a substantial body of knowledge on what worked and what did not when using air power to police the empire. By the mid-1930s, that knowledge had been codified and was being taught at the RAF Staff College and the Imperial Defence College.<sup>152</sup>

This work, as outlined in the introduction, seeks to understand the relationship between theory and doctrine, and the practical application of airpower in small wars from 1910 to 2010. To better understand the process of creating, disseminating and

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<sup>150</sup> The benefits of the ‘decapitation’ strategy are much debated, for discussion see Geraint Hughes, ‘Intelligence and special operations’, in Paul B. Rich and Isabelle Duyvesteyn (eds.), *The Routledge handbook of insurgency and counterinsurgency* (Oxon, UK, 2014), pp 114-5

<sup>151</sup> P. S. Meilinger, ‘Counterinsurgency from above’ in *Air Force Magazine* (July, 2008), pp 36-9; Dennis M. Drew, ‘U.S. airpower theory and the insurgent challenge: a short journey to confusion’, in *The Journal of Military History*, vol. 64, no. 4 (1998), pp 809–832

<sup>152</sup> David J. Dean, ‘Airpower in small wars’, in *Air University Review* (1983)



applying approaches to the use of airpower in this context, the area of organisational learning will be analysed to understand how, if at all, the concepts of organisational learning were applied by the military. Although organisational learning as a concept did not exist for much of the period under study, this approach will help to show how in fact the organisations under consideration did in fact learn and evolve. To contextualise this approach this section will provide an analysis of organisational learning theory, and through this identify the key points that will inform the analysis in the subsequent chapters.

Organisation learning is of relevance to the military for a number of reasons. Firstly, the accelerated use of technology within the military means that new systems are introduced constantly, thus requiring the training of personnel and the evaluation of how best to use these new systems within a combat environment. Secondly, the varied nature of military deployments and force structure means that modern military forces need to be equipped to meet a wide range of combat scenarios; conventional, unconventional and peace support operations. Thirdly, modern military forces are vast, thus there is a requirement for a consistent approach to the use of force, this consistent approach is built on a foundation of doctrine, thus organisational learning is the ideal approach to analysing and understanding the process by which doctrine is created, disseminated and applied by military forces. While doctrine has existed throughout this period, this work will also examine how doctrine has changed, and whether doctrine, as we would consider it today, was used as extensively and in the same manner throughout the period.

This section will begin by describing why this approach is of benefit to the wider research aim, following this it will look at two distinct areas of organisation learning. Firstly, it will provide an overview of the main theoretical underpinnings of organisation learning theory and the related area of systems theory, secondly it will look at how organisational learning theory and systems theory has been applied in a military history context. This chapter will conclude by providing a summary of the key areas of organisational learning that have been identified as relevant to this work, and it will sketch out how these key points will inform the subsequent research.

#### Why is it relevant to this study?

The development of military doctrine, theory and practice has never been a linear process. The shift that occurred in military technology during the First World War (e.g. the introduction of tanks, airpower etc.) meant that from that point on doctrine (i.e. how you used military force) would be an important element of any military capability. This was even more evident in the air forces; as the rate of technological progress accelerated, pilots were being pushed to their physical and intellectual limits, the only thing that could alleviate this was a comprehensive and consistent approach to the use of air power in military combat. This approach was built upon two parallel elements; training and doctrine. Even as early as the First World War, air force commanders witnessed the folly of sending under-trained men to the front lines, however it was a necessary evil alleviated by the fact that the supply of men and machines was plentiful. However, as technology progressed and training became more of an investment, the unit cost of an aircraft and its trained crew became significant. No longer were men and machines so easily replaced. During the First

World War some British pilots reached the frontline with only fifteen hours of solo flying experience, today a British fast jet pilot's *initial* training will last for twenty one months.<sup>153</sup> Similarly, due to the emergence of airpower in the First World War, doctrine was non-existent in an official sense, although there was an RFC training manual, the lack of official doctrine meant that during the war strategy and tactics evolved based on the changing operational environment and technology available. However, after the war air forces could analyse the conflict and thus began to codify doctrine based on the apparent lessons of that conflict.

The key elements that influence how military power is constructed and applied include experience, theory and technology, all of which represent inputs into the doctrinal development process. The development of doctrine is a critical factor in how air forces approach utilising their resources. Only through the development of doctrine can you understand the application of air power and how your pilots will need to be trained to align with these goals. Thus, the development of doctrine becomes a crucial factor in how air forces approach combat scenarios; small wars being a case in point. As mentioned earlier, doctrine is created through a process of inputs, these typically are experience, technology and theory. The key question of this work is whether these inputs led to an evolution in the theory and practice of deploying airpower in small wars during the period under consideration.

Organisational learning will act as the framework through which the learning, or lack of learning, within air force organisations can be identified and analysed.

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<sup>153</sup>Extracts from a Digest of Services of the Central Flying School, Upavon', TNA, Air 1/1/2310/17; for details on initial RAF fast jet pilot training see, <https://www.raf.mod.uk/recruitment/roles/roles-finder/aircrew/pilot/> (accessed 23 September 2017)

Organisation learning is a valid analytical framework for this topic for several reasons. To determine whether air forces evolved their approach to utilising airpower in small wars it is important to determine whether they learned from their experiences and whether this learning was translated into doctrinal evolution, and ultimately an evolution in the way in which airpower was utilised in a small wars context. One way in which to do this is to understand whether air forces can be considered as learning organisations, the extent to which they are should be apparent in doctrinal change—both formal and informal—and the subsequent practical application of airpower. Research in this work will focus on determining whether air forces, specifically the RAF, did indeed learn from their experiences in operating in a small wars environment, and whether this learning is discernible from an analysis of airpower theory, doctrine and practical application throughout the period in question. Also, this will allow for an analysis of whether their approach to learning had an impact on the things that they did, and did not, learn. This analysis will be informed by the concept of organisational learning. Before outlining the organizational learning theory that influenced this work, in the first instance it is important to outline the concept of doctrine and explain how it is relevant to understanding a military organisations ability to learn and evolve.

### Military Doctrine

There are many definitions of military doctrine. Since the establishment of NATO, the definitions have coalesced for those countries operating within that organisation. For the purposes of this paper the definition used by the UK will be applied, this definition is from the *United Kingdom Glossary of Joint and Multinational Terms and Definitions*, it defines doctrine as:

Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgement in application.<sup>154</sup>

As hinted at in the above definition, doctrine acts as a framework, or a platform, upon which military action is built. It provides the guidance to commanders as to the best way to apply military force in each situation.

Denis Drew and Don Snow argue that doctrine is made up of three types of doctrine; fundamental, environmental and organizational.<sup>155</sup> Fundamental doctrine represents the core building blocks, it is typically ‘broad and its concepts are abstract’.

Fundamental doctrine rarely changes as it relates to immutable concepts.

Environmental doctrine is more specific and is focused on the operational environment (i.e. land, sea, air or space), it provides guidance on the employment of military forces within a specific operational environment. Finally, organizational doctrine, as the name suggests, focuses on how a military organization operates, ‘typically it discusses roles and missions of an organization, current objectives, administrative organization, force employment principles’ and so on. These different types of doctrine are interrelated and taken together are the doctrinal beliefs of a military organisation.

Doctrine comes from several sources, however the primary input into the doctrinal process is experience. Essentially doctrine should be based on the past successful

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<sup>154</sup> Dr. Paul Latawski, *The inherent tensions in military doctrine*, Sandhurst Occasional Papers No. 5 (Surrey, 2011)

<sup>155</sup> Dennis Drew and Don Snow, *Making strategy: an introduction to national security processes and problems*, chapter 11, August 1988, pp. 163–174, <http://www.au.af.mil/au/awc/awcgate/readings/drew1.htm> (accessed 24 January 2016)

employment of military force. Furthermore, other factors can have some bearing on the doctrinal creation and evolution process, these include technology and theory. One of the greatest challenges in creating doctrine is that organisations do not rely too heavily on the experiences of the past. A key example of this is the inability of the French army in the Second World War to deal with the mobility of the German army, the French doctrine of the time was based on their experiences of the First World War, and it did not take into consideration the advances in firepower and mobility that occurred in the intervening decades. Thus, as Drew and Snow argue, ‘doctrine can become irrelevant if the assumptions that support it are not frequently reexamined for their continuing validity’.<sup>156</sup>

There are those who argue that doctrine is not the cornerstone of military beliefs, but rather one of several factors. Austin Long argues that in fact organizational culture has ‘a much greater influence on the conduct of operations than written doctrine’, furthermore he states that ‘the culture of military organizations does more to shape doctrine than doctrine does to shape military operations’.<sup>157</sup> What is insightful about Long’s view is that he highlighted the differences between doctrine as written and operations as carried out. For Long this was glaringly true in Vietnam. Although in Vietnam, particularly after Kennedy became president, there was a strong focus on counterinsurgency doctrine, in fact operations in the main were aligned to the doctrine of high intensity conflict. He argues that this was because of ‘long years of

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<sup>156</sup> Dennis Drew and Don Snow, *Making strategy: an introduction to national security processes and problems*, chapter 11, August 1988, pp. 163–174, <http://www.au.af.mil/au/awc/awcgate/readings/drew1.htm> (accessed 24 January 2016)

<sup>157</sup> Austin Long, *Doctrine of eternal recurrence*, Rand Counterinsurgency Study (California, 2008), p. 17

training and education [where] officers are inculcated with patterns of thinking that reflect [their military] culture'.<sup>158</sup>

The arguments put forward by Long are somewhat echoed in the writings of Jim Storr. Storr believed that doctrine could be both explicit (i.e. official, published) and implicit (i.e. received wisdom).<sup>159</sup> This view of doctrine dovetails well with a key element of this work, that argues that both formal and informal doctrine existed within the RAF, and this will be a topic examined in more detail in subsequent chapters.

### Organisation Learning Theory & Systems Theory

Organisational learning is a relatively new discipline having been developed in the 1970's. Organisational learning and the concept of the learning organisation has in the main focused on the business world, and as such is primarily concerned with how businesses learn and grow. However, this approach can and has been applied to any organisational setting. Similarly, systems thinking, a related discipline, is also a comparatively new concept and one that has been used to complement and accelerate the theories espoused in the field of organisational learning.

Key theorists in the field of organisational learning and systems thinking include; Chris Argyris, Donald Schon and Peter Senge. In the 1970's Chris Argyris and Donald

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<sup>158</sup> Austin Long, *Doctrine of eternal recurrence*, Rand Counterinsurgency Study (California, 2008), p. 42

<sup>159</sup> Dr. Paul Latawski, *The inherent tensions in military doctrine*, Sandhurst Occasional Papers No. 5 (Surrey, 2011), p. 8

Schon proposed that organisations learned in two distinct ways; single-loop and double-loop learning.<sup>160</sup> Single-loop learning refers to the process whereby organisations learn based on the difference between expected and obtained outcomes. In contrast, double-loop learning, occurs when organisations learn based on understanding and questioning the underlying values, assumptions and policies that led to the action in the first place. Double-loop learning is as a result a higher level of learning than that experienced in single-loop learning. An example of this from a military context would be whereby an army tries to learn from the failure of an operation (single-loop learning) as opposed to understanding why the operation was approached in the way it was in the first place (double-loop learning). One of the key concepts underpinning organisational learning is knowledge:

Knowledge is a fluid mix of framed experience, values, contextual information, and expert insights that provide a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.<sup>161</sup>

The ability of an organisation to utilize knowledge is very important. The ability to identify, process and utilize information is paramount, as Nonaka and Takeuchi argue:

Organizational knowledge creation should be understood as the process that "organizationally" amplifies the knowledge creation by individuals and crystallizes it at the group level through dialogue, discussion, experience sharing, or observation.<sup>162</sup>

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<sup>160</sup> Chris Argyris and Donald A Schön, *Organizational learning* (Reading, Mass., 1978)

<sup>161</sup> Thomas H. Davenport, and Laurence Prusak, *Working knowledge, how organizations manage what they know* (Boston, 1998), p. 5.

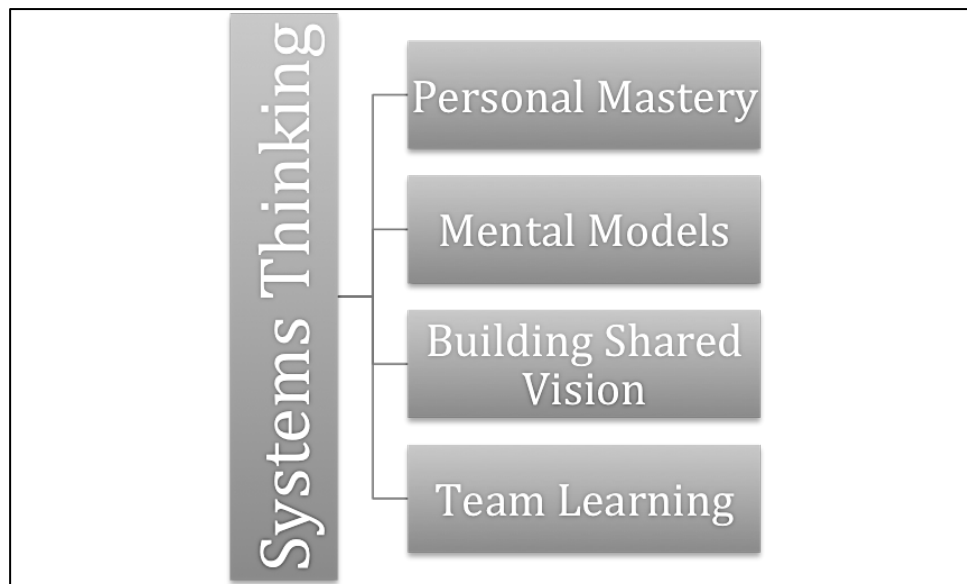
<sup>162</sup> Ikujiro Nonaka and Hirotaka Takeuchi, *The knowledge-creating company* (New York, 1995), p. 239



This is very evident in military organisations, particularly in the concept of *After Action Reports* (AAR).

Following on from the work of Argyis and Schon, and many others, Peter Senge published his seminal work on organisational learning and its connectedness with systems thinking. This work, published in 1990, was *The fifth discipline, the art and practice of the learning organization*.<sup>163</sup> While Senge focuses on the commercial world, his theories have applicability in any organisational structure, none more so than the military. Ultimately Senge's work is concerned with transforming organisations into learning organisations. Senge proposes that there are five disciplines that organisations must implement in order to achieve this.

**Figure 8 - Peter Senge's Five Disciplines**



**Source** – Created by the author from, Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (revised edition, London, 2006)

<sup>163</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (Revised edition, London, 2006)

Senge's theories have significantly influenced this work and as such it is important at a high level to sketch out the main elements of his thinking. Senge argued that for an organisation to become a learning organisation it needed to understand the disciplines that would ultimately achieve the desired transformation from a traditional authoritarian structure to one in which learning is at the core of all an organisation does. The five disciplines are; personal mastery, mental models, building shared vision, team learning and systems thinking. Personal mastery 'is the discipline of continually clarifying and deepening our personal vision [...] and of seeing reality objectively'. Mental models 'are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action'. Building shared vision is 'the capacity to hold a shared picture of the future we seek to create'. Team learning is essential, 'unless teams can learn, the organization cannot learn'. Finally, systems thinking is the discipline that enables all of the others, 'systems thinking is a conceptual framework [...] to make the full patterns clearer, and to help us see how to change them effectively'.<sup>168</sup> In order to assess whether or not the RAF can be considered a learning organisation, Senge's five disciplines can be used as a kind of checkbox to see what, if any, of these elements are present, or evolved over the last one hundred years. While it would be futile to attempt to shoe-horn air force learning into these exacting modern day disciplines, they will act to inform the research and as such give a view of whether air forces developed any of these traits during their evolution,

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<sup>168</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (Revised edition, London, 2006), pp 6-10

and indeed whether this type of approach has been or could be of benefit to air forces in the challenges that they face today.

### Modern Interpretations

Organisational learning is a very popular discourse. Many of the modern theorists working in this area draw from, and build upon, the core elements first espoused by the likes of Argyris, Shon and Senge, mentioned earlier. Although a vast literature exists, and is growing rapidly, for the purposes of this work it suffices to highlight some particular theorists and their views which have informed the approach to organisational learning taken in this work.

Popper and Lipshitz, in their work, *Organisational learning; mechanisms, culture, and feasibility*, discuss some key theoretical questions on organisational learning. Namely, ‘(1) what are the similarities and differences between organizational learning and individual learning? (2) what conditions promote organizational learning? (3) what conditions promote productive organizational learning? and (4) how is organizational learning related to learning organizations?’.<sup>170</sup> In answering these questions Popper and Lipshitz argue that fundamentally a learning organisation is one in which learning is institutionalised within a culture of learning, furthermore they state that it is straightforward to ascertain whether a particular organisation (eg. an air force) is a learning organisation, this can be achieved by:

mapping its organizational learning mechanisms, the culture in which

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<sup>170</sup> M. Popper and R. Lipshitz, ‘Organizational learning’, in *Essential readings in management learning; mechanisms, culture, and feasibility* (London, 2004), p. 37

they are embedded, and the contribution of both to improved performance and members' ability to change the organization's mission and values (i.e. single-loop and double-loop learning, respectively).<sup>171</sup>

This approach is very useful, simply it allows a determination to be made, of whether an organisation is a learning organisation, by analysing several key elements. These are, how does the organisation facilitate learning (both individual and group), does the organisation promote a culture of learning, and do these two elements, if present, combine to produce an improvement in organisational performance.

Linda Argote in her work *Organisational learning, creating, retaining and transferring knowledge*, proposes an analytical framework to use when trying to understand organisational learning.<sup>172</sup> This framework highlights several internal and external inputs and processes that effect an organisations learning ability, this is demonstrated in the graphic overleaf. In essence:

The figure portrays an ongoing cycle through which task performance experience is converted into knowledge through organizational learning processes. Task performance experience interacts with the context to create knowledge. The knowledge flows out of the organization into the environment and changes the organization's context, which affects future learning.<sup>173</sup>

One of the key components of Argote's theory is the idea of the organisational context and its impact on organisational learning. By organisational context, Argote

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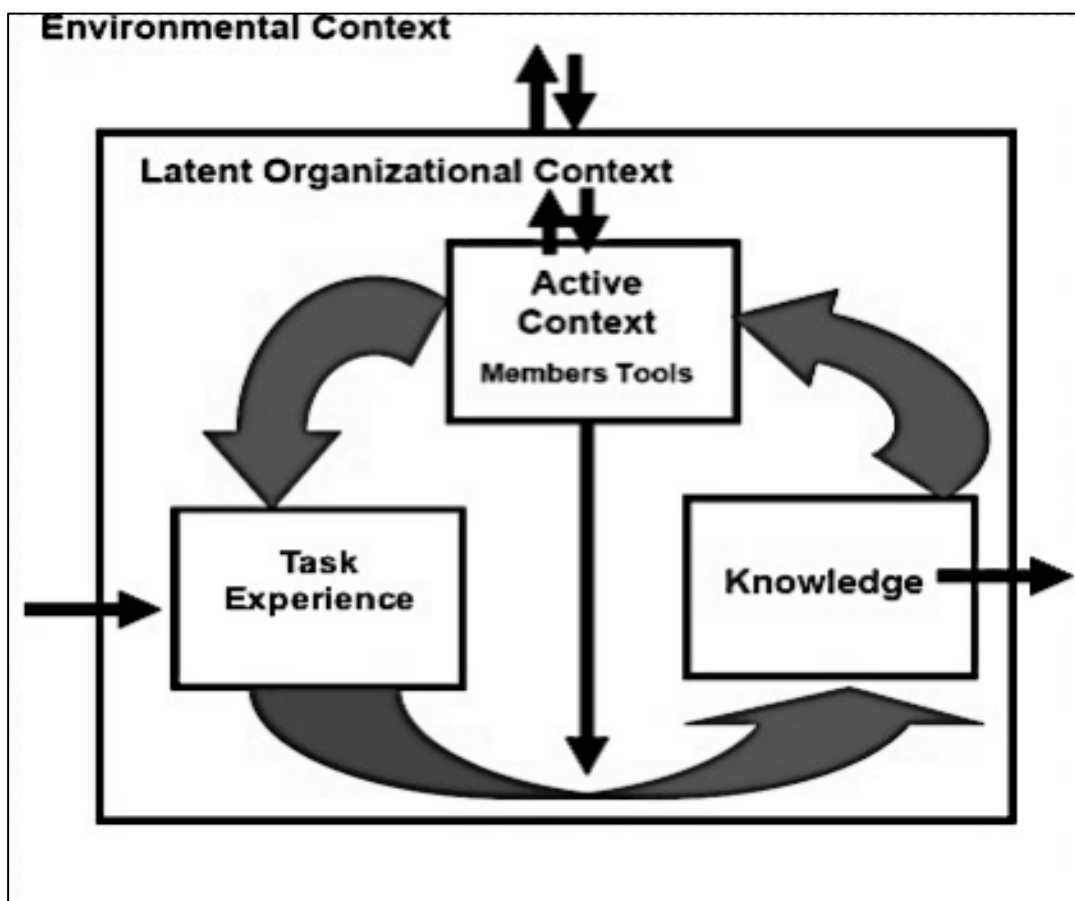
<sup>171</sup> M. Popper and R. Lipshitz, 'Organizational learning', in *Essential readings in management learning; mechanisms, multure, and feasibility* (London, 2004), p. 49

<sup>172</sup> Linda Argote, *Organizational learning* (Pittsburgh, 2012)

<sup>173</sup> *Ibid.*, p. 32

means all of the elements of an organisation that help to shape and define it, these would include elements like structure, history, goals, incentives and vision.<sup>174</sup> Within a military organisation, these type of contextual elements are extremely important and thus Argote's approach is very relevant within a military context. Argote argues that this context interacts with the experience of an organisation and the resulting output is knowledge. Experience can be acquired in several ways, firstly through learning by doing, secondly by after action reviews.<sup>175</sup> Once again these ways of acquiring experience resonate well within a military context.

**Figure 9 - Argote's theoretical framework for organisational learning**



**Source:** Linda Argote, *Organizational learning* (Pittsburgh, 2012), p. 33

<sup>174</sup> Linda Argote, *Organizational learning* (Pittsburgh, 2012), pp 33-4

<sup>175</sup> *Ibid.*, p. 38

In summary, Argote argues that her framework can show how there are three key elements of organisational learning; experience, context and knowledge. Argote posits that experience interacts with an organisation's context and that this leads to knowledge creation and that ultimately organisational learning is concerned with creating, retaining and transferring knowledge, the more efficient this process, the greater the capacity of the organisation to learn.

Another relevant area is in relation to the danger of knowledge, and learning, becoming too institutionalized and thus difficult to change. As Crossan, Lane and White argue, 'because learning that has become institutionalized at the organization level is often difficult to change, it runs the risk of becoming irrelevant'.<sup>176</sup> Within a military context this is an inherent danger of doctrine, doctrine thus should be seen as a:

living intellectual body of thought that draws on the past, lives in the present, evolves, develops and, if necessary, gives way to a new thinking relevant to the present or anticipated future operational conditions and changing weapons technology.<sup>177</sup>

Having provided an overview of the key theorists and development of organisation learning theory, the next section addresses specifically the use of organisational learning theories within a military context.

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<sup>176</sup> Mary M. Crossan, Henry W. Lane and Roderick E. White, 'An organizational learning framework: from intuition to institution', in *The Academy of Management Review*, vol. 24, no. 3 (July, 1999), pp 522-537, p. 14

<sup>177</sup> Dr. Paul Latawski, *The inherent tensions in military doctrine*, Sandhurst Occasional Papers No. 5 (Surrey, 2011), p. 3

## Organisational learning studies within a military context

The armed services have been an interesting area of analysis for writers, organisational learning theorists and historians alike, and many have used the concept of organisational learning to try and better understand the performance of armed forces in several conflicts. Its large bureaucratic nature and requirement for continual training and education has led many theorists to analyse how military organisations learn, and how the propensity to learn, or lack thereof, within these organisations has manifested itself through operational performance. This analysis of military learning has accelerated in recent decades with the seismic shift in the type of operations that major western forces have been asked to do. In the main this analysis has focused on the U.S. military and the training and education of the military in the post-Vietnam era, and has tried to discern whether the shift in emphasis from conventional to unconventional warfare at the operational level, has filtered through to a shift in the focus for doctrine, education and training.

Within the U.S. in the post-Vietnam era there was an aversion to any doctrine or training that was reflective of the experiences of Vietnam, thus the U.S. military, and the army moved to the other end of the spectrum. Instead of creating doctrine and training based on the counterinsurgency lessons of Vietnam, they focused on conventional land warfare.<sup>178</sup> The result was the publication of *AirLand Battle* doctrine, a doctrine based not on the experience of Vietnam, but on a theoretical take on modern conventional warfare, one which had been influenced by contemporary experience in the likes of the Arab-Israeli wars of the 1970s and 80s. It would be this

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<sup>178</sup> David Fitzgerald, *Learning to forget, US Army counterinsurgency doctrine and practice from Vietnam to Iraq* (Stanford, 2013), p. 39

theme that would percolate through to military training and education programmes, thus the opportunity to benefit from the experiential knowledge accumulated in Vietnam was lost. This lost opportunity can be explained by the fact that the U.S. military believed that the next conflict that they would be involved in would be a conventional war against Soviet forces on the plains of Central Europe, thus the shift away from the unconventional operations of Vietnam, to a more conventional approach enshrined in *AirLand Battle*. This inability to capture the knowledge from the experiences of Vietnam in doctrine did arguably influence the effectiveness of early operations in Iraq and Afghanistan, once those conflicts changed from conventional to unconventional operations. As *AirLand Battle* became the doctrinal bible for U.S. Military forces, thus it also influenced America's other allies within NATO, such as the British.<sup>179</sup>

As stated, in recent years many writers have attempted to decipher the conundrum that operations in Iraq and Afghanistan have presented, this has in part been attempted through an analysis of previous relevant conflicts, such as Vietnam. This section outlines some of these contemporary studies, and looks at some of the works that have been published relating to learning within a military context. It concludes by providing some information on how these studies are relevant to this work, and how their findings have informed the research and analysis presented later in this work.

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<sup>179</sup> Arie van der Vlis, 'Airland battle in NATO, a European view', in *Parameters*, vol. xiv, no. 2 (1984), pp 10-14



One of the key works when looking at military learning is John Nagl's seminal work, *Learning to eat soup with a knife*.<sup>180</sup> Nagl looks to contrast the experiences of the British Army in Malaya, with the U.S. Army in Vietnam, and through this understand how and why the British Army appeared to be able to successfully conduct counterinsurgency operations in Malaya, but the U.S. Army could not do so in Vietnam. In describing the goal of his work, Nagl acknowledges the important part played by the concept of organisational learning to understand and analyse the performance of a military organisation. Nagl uses Richard Downie's definition of learning as:

a process by which an organization uses new knowledge or understanding gained from experience or study to adjust institutional norms, doctrine and procedures in ways designed to minimize gaps in performance and maximize future success'.<sup>181</sup>

Thus Nagl posits that one way in which the organisational learning process can be studied is through an examination of doctrine, and also an examination of the curricula of military schools and training institutes, the latter providing a window into institutional norms.

One of the key questions that Nagl sets out to answer is whether in each scenario—Malaya and Vietnam—the Army in question can be considered a learning organisation. This mirrors one of the central research questions of this work. Nagl seeks to answer this question by asking several research questions, namely; does the army promote suggestions from the field, are subordinates encouraged to question

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<sup>180</sup> John A. Nagl, *Learning to eat soup with a knife: counterinsurgency lessons from Malaya and Vietnam* (Chicago, 2005)

<sup>181</sup> *Ibid.*, p. 6

superiors and policies, does the organization regularly question its basic assumptions, are high ranking officers routinely in close contact with those on the ground and open to their suggestions, and finally, are standard operating procedures (SOPs) generated locally and informally or imposed from the center? While not wholly applicable to organisational learning within air forces, this approach has certainly informed this work.

In conclusion Nagl argues that the success of the British Army, and the failure of the U.S. Army, was because of institutional culture, ultimately organisational culture is a 'decisive determinant' in a military organisations effectiveness.<sup>182</sup> Furthermore, Nagl argues that the difference between conventional and unconventional warfare is so vast, that if a military organisation is established and trained to succeed in one, that it is impossible to also be successful in the other.

David Fitzgerald, like John Nagl, focuses on the importance of doctrine in his work *Learning to forget: US Army counterinsurgency doctrine and practice from Vietnam to Iraq*.<sup>183</sup> Emphasising the importance of doctrine in understanding a military organisation, Fitzgerald argues that, 'it [doctrine] offers a very useful repository of the institution's memory and of historical lessons. Not only that, but doctrine is often one of the key terrains over which battles over identity and memory are fought'.<sup>184</sup> Interestingly Fitzgerald also highlights the importance of informal doctrine, this he argues can be discerned from several sources including; course curricula at military

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<sup>182</sup> John A. Nagl, *Learning to eat soup with a knife: counterinsurgency lessons from Malaya and Vietnam* (Chicago, 2005), p. 214.

<sup>183</sup> David Fitzgerald, *Learning to forget: US Army counterinsurgency doctrine and practice from Vietnam to Iraq* (Stanford, 2013)

<sup>184</sup> *Ibid.*, pp 14-5

learning institutions and the opinions of junior officers as communicated through professional journals and student papers. There is a third element that Fitzgerald highlights alongside formal and informal doctrine, that of lessons learned material, from institutions like the *Combined Arms Center (CAC)*, the *Combat Studies Institute*, and also the *Center for Army Lessons Learned (CALL)*.<sup>185</sup> Fitzgerald argues that analysed in combination these three sources offer ‘a unique way of looking at both how historical narratives can shape the Army’s culture and identify how that very culture can affect the way in which narratives are constructed’.<sup>186</sup> The idea of the creation and recreation of narratives around past experiences is a central pillar of Fitzgerald’s thesis. He argues that lessons and experience are evolutionary, and that the lessons of any experience (eg. Vietnam), can be presented in numerous different ways and the narrative constructed to fit in with contemporary thought. This he argues explains the differing interpretations of the lessons from Vietnam that were presented in the decades after that conflict.

Fitzgerald concludes that the ability of military organisations to change can be driven by internal innovation, as opposed to external influence, however in the main these innovations are because of traumatic events, he highlights Vietnam, and the Iraqi insurgency, as two examples of traumatic events that drove innovation within the U.S. Army.<sup>187</sup>

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<sup>185</sup> David Fitzgerald, *Learning to forget: US Army counterinsurgency doctrine and practice from Vietnam to Iraq* (Stanford, 2013), p. 15

<sup>186</sup> *Ibid.*, p. 16

<sup>187</sup> *Ibid.*, p. 206

Janine Davidson in her work, *Lifting the fog of peace, how Americans learned to fight modern war*, argues that to understand whether organisational learning is present in an organisation, we must first understand what it is.<sup>188</sup> Organisational learning, she posits is distinguished from individual learning within an organisation due to the fact that the results of organisational learning will remain within an organisation even if the individuals involved no longer remain.<sup>189</sup> Thus in order to determine if organisational learning is present, we must seek evidence of learning that remains in an organisation after the event. Within a military context this can be evidenced by ‘tactics, techniques, and procedures learned in action at one point in time are applied at the start of action at a later date’.<sup>190</sup> In this one quote Davidson has summed up the central theme of this work, by tracing the evolution of theory, doctrine and practice of deploying airpower in small wars over a long period, it should be possible to trace if air forces learned the lessons of their experience—through organisational learning—and thus modified their doctrine and practical application of airpower in subsequent operations.

Davidson describes a basic learning cycle that should be present in organisations that exhibit organisation learning. This cycle contains three key elements:

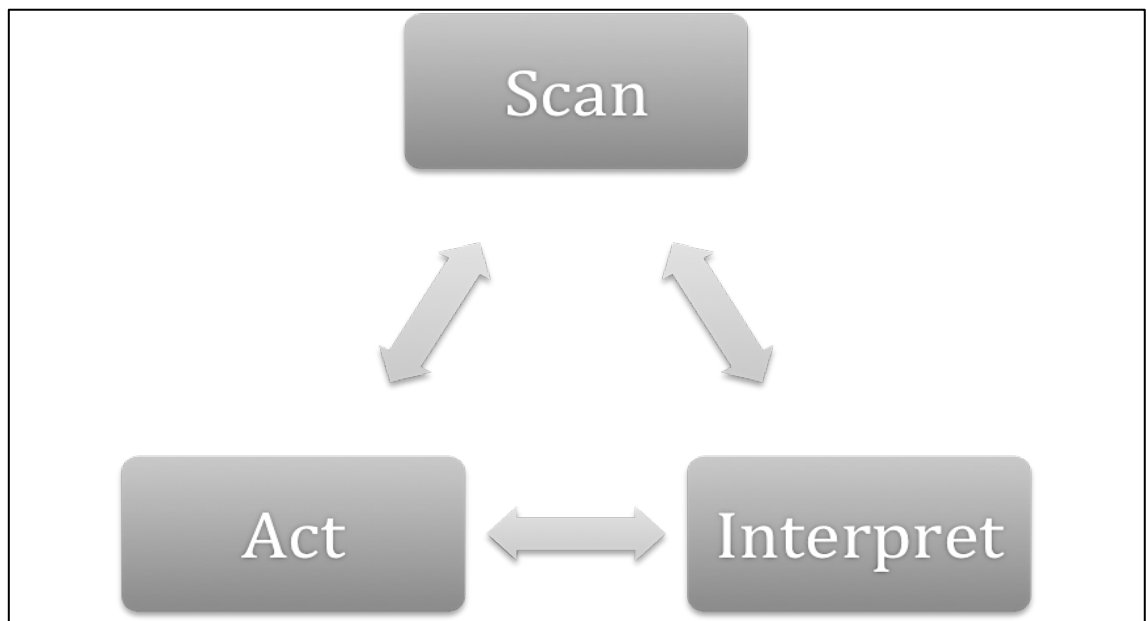
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<sup>188</sup> Janine Davidson, *Lifting the fog of peace, how Americans learned to fight modern war* (Ann Arbor, MI, 2011)

<sup>189</sup> *Ibid.*, p. 22

<sup>190</sup> *Ibid.*, p. 22

**Figure 10 - Davidson's organisational learning cycle**



**Source** - Janine Davidson, *Lifting the fog of peace, how Americans learned to fight modern war* (Ann Arbor, MI, 2011), pp 22-3

*Scan* refers to the ability of organisations to capture the lessons of their experience, *interpret* is to ‘make sense of the information, to track themes and trends over time, to identify cause and effect and to synthesize and codify the information in a format that can be disseminated [eg. doctrinal publications and course curricula]’. Finally, to *act* is to complete the dissemination of the new information and to apply the new learning in a practical sense.<sup>191</sup>

Pierre Barbaroux and Cécile Godé-Sanchez, in their paper, *Acquiring core capabilities through organizational learning*, set out to understand:

the development of core capabilities through organizational learning. It insists on the variety of learning types which must be articulated in order to provide organizations with effective core capabilities [...]

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<sup>191</sup> Janine Davidson, *Lifting the fog of peace, how Americans learned to fight modern war* (Ann Arbor, MI, 2011), p. 23

discriminating between various learning and training mechanisms according to their (i) type, (ii) level and (iii) context, we develop a conceptual framework to study organizational learning as a dynamic capability which enables the organization to develop core capabilities.<sup>192</sup>

Barbaroux and Godé-Sanchez are interested in understanding how organisations adjust their core capabilities to meet ever-changing challenges. They seek to gain this understanding using organisational learning theory. They see organisational learning as the enabler for evolving core capability using education and training. Organisational learning, they argue, must be viewed in terms of the different types (i.e. individual or collective) and levels (i.e. first, second and third order of learning). First order learning complexity corresponds to the articulation of (simple) types of learning (e.g., learning by doing) which can be either individual or collective. Second order learning complexity is based on the combination of distinctive learning types which relate to different levels (e.g., single versus double loop) and knowledge processes (e.g., tacit versus explicit knowledge). Third order learning complexity relates to the articulation of different learning types, levels and contexts (e.g., learning in teams versus learning in communities).

Ultimately Barbaroux and Godé-Sanchez apply their theoretical framework (comprised of learning types, learning levels and organisational context) to three U.S. Army training programmes, they conclude that organisational learning is indeed

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<sup>192</sup> Pierre Barbaroux, and Cécile Godé Sanchez, 'Acquiring core capabilities through organizational learning: illustrations from the U.S. military organizations', in *Proceedings EGOS 2007* (2007), pp 1–25, p. 1

a dynamic capability that 'enables the organization to manage various degrees of organizational learning complexity'.<sup>193</sup>

Anthony DiBella, in his article, *Can the Army become a learning organisation?, a question reexamined*, attempts to lay out an approach for building learning capability within organisations.<sup>194</sup> At the core of Di Bella's article are three key research questions; 'How does the Army learn and why? What does it learn? And how is that learning aligned with its mission and strategy?'<sup>195</sup> These three areas combined lead to the attainment of the goal; organisational learning. The third question is key, as Di Bella argues, 'for organisations to learn strategically, learning resources and processes need to be directed toward attainment of the organization's mission and strategy'.<sup>196</sup> Thus an organisation needs to align its learning to the overall goals of the organisation, within a military context that means that theory, doctrine and education need to be aligned, any misalignment in these factors will point towards an organisation that is not truly a learning organisation. This alignment between theory, doctrine and practice is something that this work will examine in detail.

Philip Rotmann, David Tohn and Jaron Wharton in their paper *Learning under fire: the US military, dissent, and organizational learning post 9/11*, argue that the ability of the U.S. Armed forces in Iraq to adapt to fighting a counterinsurgency war in the

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<sup>193</sup> Pierre Barbaroux, and Cécile Godé Sanchez, 'Acquiring core capabilities through organizational learning: illustrations from the U.S. military organizations', in *Proceedings EGOS 2007* (2007), p. 20

<sup>194</sup> Anthony J DiBella, 'Can the army become a learning organization? A question reexamined'

(2010), available at

[https://www.army.mil/article/36320/can\\_the\\_army\\_become\\_a\\_learning\\_organization\\_a\\_question\\_reexamined](https://www.army.mil/article/36320/can_the_army_become_a_learning_organization_a_question_reexamined) (accessed 09 September 2015)

<sup>195</sup> Ibid., p. 119

<sup>196</sup> Ibid., p. 122

years after the 2003 invasion represented ‘a remarkable institutional accomplishment’.<sup>197</sup> The authors argue that this accomplishment was achieved by junior and senior officers who were innovative despite institutional constraints. These constraints were because of the abhorrence of all that was associated with the Vietnam experience (in particular the counterinsurgency lessons) and also an institution overly influenced by the technological revolution of the 1980s and 90s. The authors further argued that it was these institutional constraints that fundamentally limited the ability of the armed forces to ‘learn and adapt at the operational and strategic level’.<sup>198</sup> Although the U.S. military had all the outward trappings of a learning organisation, including after-action reviews, lessons learned studies and many other instruments of institutional learning, they were a learning organisation in part only. The top down, bottom up approach discussed by the authors mirrors the idea of formal and informal doctrine discussed earlier in this chapter. Rotmann and his colleagues argue that the top down approach, spearheaded by General David Petraeus, impacted on formal doctrine (i.e. FM 3-24), while the bottom up, informal approach changed the way in which junior officers on the ground did their daily jobs. This parallel effort from both ends of the leadership spectrum resulted in the ‘remarkable institutional accomplishment’. This accomplishment resulted in a process of ‘tactical and operational learning [which allowed the military to be] more of a learning organization by encouraging

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<sup>197</sup> Philip Rotmann, David Tohn, and Jaron Wharton, ‘Learning under fire: the US military, dissent and organizational learning post-9/11,’ *Belfer Center Student Paper Series #09-04*, (Cambridge, MA, May 2009.), p. 4

<sup>198</sup> *Ibid.*, p. 7



independent thinking on the part of field leaders, promoting open communication, making space for questioning'.<sup>199</sup>

The way of looking at the issue of organisational learning as outlined by Rotmann, Tohn and Wharton is very relevant to this work. In particular, the concept of looking at both formal and informal doctrine, while also taking account of the influence of junior officers in shaping institutional change is beneficial and is an approach that will be applied in this work.

Max Visser, in his paper *Organizational learning capability and battlefield performance*, discusses the relative battlefield performance of British and German troops in the Italian campaign during the Second World War.<sup>200</sup> While this is not directly relevant to this work, what is interesting in Visser's paper is that he relates battlefield performance to the military's organisational learning capability. He argues that this capability is related to an organisation's ability to detect and correct errors. This capability has four distinct dimensions; *degree of empowerment*, *degree of error openness*, *degree of knowledge conversion*, and *degree of adequate human resource management and development*.<sup>201</sup> He argues that the German army's superior battlefield capability in the period studied, is directly related to the degree to which their organisation successfully implemented these four dimensions. Visser's

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<sup>199</sup> Philip Rotmann, David Tohn, and Jaron Wharton, 'Learning under fire: the US military, dissent and organizational learning post-9/11,' *Belfer Center Student Paper Series #09-04*, (Cambridge, MA, May 2009.), p. 15

<sup>200</sup> Max Visser, 'Organizational learning capability and battlefield performance', paper presented at the *12th EURAM Conference* (6th - 8th June 2012, Rotterdam), available at [www.ru.nl/publish/pages/664426/visser\\_euram\\_12\\_paper\\_def.pdf](http://www.ru.nl/publish/pages/664426/visser_euram_12_paper_def.pdf) (accessed 08 October 2014)

<sup>201</sup> Ibid.

approach to analysing an organisation using the four dimensions mentioned above dovetails well with some other approaches outlined in this chapter.

### Definitions

To frame the influence which these concepts have on the subsequent research of this work it is important in the first instance to define what are the central concepts and what do we mean by them. This work will seek to understand in part whether the RAF can be considered a learning organisation, this will be achieved by analysing the development of air power theory, doctrine and practice relevant to the use of airpower in small wars, specifically it will focus on the impact that doctrine and theory had on operations, and the impact that practical application had on subsequent theory and doctrine. Three key concepts; organisational learning, systems theory and the learning organisation will inform the research. What is meant by *organisational learning* is that:

Organizational learning typically adds to, transforms, or reduces organizational knowledge. Theories of organizational learning attempt to understand the processes which lead to (or prevent) changes in organizational knowledge, as well as the effects of learning and knowledge on behaviours and organizational outcomes.<sup>202</sup>

Thus organisational learning will inform this work by trying to understand how air forces add to, transform or reduce organisational knowledge, while also trying to understand the cause and effect of the processes that do this. For example, what

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<sup>202</sup> Martin Schulz, 'Organizational learning' in *The blackwell companion to organizations* (2002), available at <http://www.unc.edu/~healdric/Courses/Soci245/Schulz.pdf> (accessed 17 April 2014), p. 1

impact did the experience of colonial policing have on the RAF in the years preceding the Second World War?

The idea of *systems thinking* is a central reality in the drive to create learning organisations, only through a system-wide view can we understand the underlying causes and effect of what we do. As Peter Senge so succinctly defines it:

Systems thinking is a discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static "snapshots."<sup>203</sup>

In the case of this work this systemic view will be vitally important. Did air forces take a systems thinking approach, or rather did they evolve their thinking in silo's, thus not appreciating the impact as experienced throughout the organisation. For example, the development of post Second World War U.S. aircraft technology was focused on two things; the ability to bomb the Soviet Union, and the ability to prevent the Soviet Union from bombing the U.S. The result of this approach was that when the Korean War began the U.S.A.F. inventory was more geared towards this role rather than providing tactical air support, something that they had evolved to a level of mastery by the end of The Second World War. This capability gap was bridged by utilising some older aircraft (eg. the F-51), while also heavily relying on US Marine Corp assets. Similarly, since the US is currently embroiled in more than a decade of counterinsurgency operations are they making another silo'd decision by wanting to retire the A-10? The ability to trace evolutionary change through seeing

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<sup>203</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (revised edition, London, 2006), p. 68

advances in theory and the consequent changes in doctrine and practice is a fundamental aim of this research.

Finally, the concept of the *learning organisation* is important to this work. A learning organisation is an organisation where:

people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.<sup>204</sup>

Does the RAF encourage individual and team learning? Is this influenced by mental models? Do they individually have a vision of what their organisations are and what they want to be? The importance of becoming a learning organisation in the modern era is as important for the military as it is for private enterprise, ‘the organizations that will truly excel in the future will be organizations that discover how to tap people's commitment and capacity to learn at all levels in an organization’.<sup>205</sup> In a modern world where branches of the military are asked to do more with less, to leverage technology as much as possible and to create small, effective professional forces, the ideal of the learning organisation should be obvious.

This section has sought to introduce organisational learning theory, this has been done by discussing the early advocates of this discipline, while also providing an overview of contemporary approaches and furthermore by looking at how it has been applied within a military organisational context.

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<sup>204</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (revised edition, London, 2006), p. 3

<sup>205</sup> *Ibid.*, p. 4

Having provided an overview of some of the different approaches to organisational learning, it is important to outline those which will be relied upon to provide an assessment of whether the RAF can be considered a *learning organisation* during the period in question. The approach taken within this work is to use a combination of ideas and approaches that have been outlined above. In particular, this work will focus on the following two key areas; firstly the concept of formal and informal doctrine; and secondly Davidson's *scan-intepret-act* learning cycle.

The former is a recurring theme throughout the works that have been reviewed for organisational learning within a military context. Official doctrine provides a roadmap of organisational learning, albeit one that develops at a very slow rate, however if you can couple this formal doctrine (eg. field manuals), with an insight into informal doctrine (eg. course curricula in military institutions, articles in professional military journals etc.), then it presents a more complete picture of a military organisations doctrinal approach.

The latter is an approach that resonates extremely well with the research goals of this work. Janine Davidson, in describing the *scan-intepret-act* learning cycle, provides an appropriate approach to analysing the RAF during this period to determine if in fact they can be considered a learning organisation. Both approaches are complimentary and combined will offer a very robust form of analysis.

Practically speaking these approaches will be combined to provide a thorough analysis of each of the periods under review, and from this determine whether,

through formal or informal doctrine, theory and practice, we can see a discernible evolution in the air force's approach to utilising airpower in small wars. The analysis of formal and informal doctrine will provide a key insight into how air forces thought officially about this operational environment, while also providing clues as to how military personnel on operations approached the challenges posed by this environment. As the analysis progresses and we link one time period to the next (eg. the move from the interwar period into the Second World War), Davidson's *scan-interpret-act* learning cycle will be utilised to determine whether experiences of the previous period were correctly interpreted, disseminated, and ultimately applied in an operational context within the next period.

This chapter has sought to provide a theoretical framework that will be contextually relevant for the subsequent historical analysis of the use of airpower in small wars. As can be seen from the evolution of both airpower and counterinsurgency theory in the 20<sup>th</sup> century, the role of airpower in small wars has been neglected from a theoretical standpoint. However, its actual usage within this operational environment was abundant, as will be discussed in later chapters. So, although military organizations were using airpower in small wars, this did not appear to filter through into the theoretical discussions surrounding airpower throughout this period, certainly not in any significant way. The 'classical' airpower theorists, and their contemporary equivalents were focused predominantly on the strategic effect that airpower could deliver, initially in a conventional, and latterly a nuclear conflict. With that in mind it is a central goal of this work to understand to what extent air forces learned from their practical experience of using airpower in small wars.

## Chapter 2 – Interwar Air Control

Before the beginning of the First World War there was no uniform consensus on what role airpower would play. Airships had been adopted by many European armies in the first decade of the twentieth century, and Italy had utilised airpower during their war with Turkey, in Libya, in 1911. However, the possibilities of airpower had not been envisioned, certainly not to their full extent, and the rapid development experienced during the First World War could not have been foreseen. However, in the two decades prior to the First World War there were those who predicted the future influence of air power on military operations, these included the author H.G. Wells and the British Army officer Major Fullerton.<sup>206</sup>

Initially deployed in a reconnaissance role in the First World War, the aircraft's success at this task naturally led to the investigation of broader utility. To counteract the effect of reconnaissance, opponents sought to restrict observation by deploying fighting machines capable of dissuading reconnaissance aircraft, this in turn led to the development of air superiority fighters that could gain control of air space in order to allow the free movement of ones own reconnaissance aircraft. By 1917 aircraft had become a multi-faceted tool that could engage in observation, pursuit and bombing. The bombing initially focused on close air support, however both the Germans and the British engaged in strategic bombing during the First World War, neither to any great success. As Tami Biddle has argued, 'virtually every

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<sup>206</sup> H.G. Wells, *The war in the air* (London, 1908); Major J. D. Fullerton, 'Some remarks on aerial warfare', (1893), reprinted in *Flight Magazine* (December 20 1917), pp 1343-4

manifestation of twentieth century airpower was envisioned and worked out at least in rudimentary form between 1914 and 1918', however the fact remains that airpower during the First World War was very much in its infancy, regardless the portends were such that its role in any future similar war would be significantly greater.<sup>207</sup> The First World War 'saw a pronounced quickening of aviation technology', and this would be a trend that continued throughout the rest of the twentieth century.<sup>208</sup>

In the wake of the First World War the RAF had the largest air force in the world, an air force that had been built with the expectation that the war would continue into 1919, and that a knock-out blow would be required to defeat the forces of Germany. In the aftermath of the early victory over Germany the government in Britain faced the challenge of demobilising the military behemoth that had been built, while also refocusing their priorities on rebuilding their shattered economy and society. Having only been established as an independent service in April 1918, the RAF faced calls from the Navy and Army that one way in which budgets could be cut was by subsuming the function of the RAF back into the air arms of the Army and Navy, essentially reverting to the way in which airpower was organised early in the war years. This inter-service bickering would take the form of a series of governmental enquiries in the years following the end of the First World War, most notably; 'the Balfour Sub-Committee of 1921, the Geddes Committee of 1922, Balfour again in

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<sup>207</sup> Tami Biddle, 'Learning in real time: the development and implementation of airpower in the First World War', in Sebastian Cox and Peter Gray (eds.), *Airpower history: turning points from Kitty Hawk to Kosovo* (London ; Portland, OR, 2002)

<sup>208</sup> David Jordan, 'Air and space warfare', in David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2008), p. 180.



1923, the Haldane Inquiry of 1924 and the Colwyn Committee of 1925.<sup>209</sup> To defend itself against these attacks the RAF required a role in the post war world. Ultimately that role would be the policing of Britain's imperial possessions, however the evolution of this role and the resistance the RAF faced from the older services would mean that the transformation required by the RAF in the post-war period would be anything but straight-forward.

The end of the First World War led to relief in Britain at the conclusion of what had been a traumatic four years, and although there were celebrations in the street at the wars conclusion, the reality of the aftermath of the war would soon become apparent. The issues that Britain faced in the immediate post war period were significant, just some of these have been highlighted by Zara Steiner when she argued that, 'the length and costs of the war meant that victors and vanquished alike were left with inflated money supplies, massive budgetary deficits, huge debts, and, in the case of most, collapsed or overstrained tax structures.'<sup>210</sup> The Government in Britain needed to be able to perform a social and economic U-turn, transforming Britain from a war footing back to normalcy. Demobilisation would be one of the greatest challenges. Demobilisation would be an area that would have a huge impact on the Royal Air Force. In the immediate post-war period the RAF's operational strength was reduced from 280 squadrons to a mere 30.<sup>211</sup>

Apart from the challenge of demobilisation outlined above, Britain also faced significant financial pressures. At the end of the war the British would be in debt to

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<sup>209</sup> Phillip S. Meilinger, *Airwar: theory and practice* (London ; Portland, OR, 2003), p. 77

<sup>210</sup> Zara Steiner, *Lights that failed: European international history 1919-1933* (Oxford, 2005), p. 182

<sup>211</sup> Patrick Bishop, *Wings* (London, 2012), p. 136

their American allies to the sum of \$4.3 billion.<sup>212</sup> To counter the dire economic situation Britain would focus on three key tasks; firstly, they focused on balancing the budget, secondly on reducing military expenditure and thirdly on restricting credit, the combination of these policies would have a devastating effect on an international economy that was already shrinking.<sup>213</sup> It was within the context of this dire economic situation that the young RAF would need to defend itself from attackers on all sides.

In the immediate post-war period the services were jostling for position in an era of budgetary challenge. The older two services argued that the RAF should logically divest its operations back to the Army and Navy from which they came, thus providing an easy mechanism for cost savings. The Navy went on the offensive against the fledgling RAF with the goal of arguing for its disbandment. Indeed Stephen Roskill, has described the conflict over naval aviation, and whose responsibility it should be, as ‘one of the greatest controversies of the interwar years’, in a similar vein Waldie has described the Army / Royal Air Force relations as ‘ferocious’ in the early 1920s.<sup>214</sup> Sir Hugh Trenchard, then Chief of the Air Staff, vigorously defended the RAF against these attacks, however what he required in order to hold off the older services was a mission for the RAF, one that would enable him to justify the ongoing independence of his own service. Trenchard’s position was strengthened by a significant ally. Winston Churchill, then Secretary of State for War and Secretary of State for Air, and had previously held the position of First

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<sup>212</sup> Zara Steiner, *Lights that failed: European international history 1919-1933* (Oxford, 2005), p. 186

<sup>213</sup> Martin Kitchen, *Europe between the wars* (London, 1988), pp 27-8

<sup>214</sup> Derek J. P. Waldie, *Relations between the Army and Royal Air Force, 1918 – 1939* (PhD Thesis, University of London, 1980), p. 7, available at <https://kclpure.kcl.ac.uk/portal/files/2925846/291189.pdf> (accessed 22 February 2016)

Lord of the Admiralty. In the emergence of air power, Churchill saw the opportunity to not only reduce military expenditure, but also to bolster the defence of the empire, something that Britain in the post-war period could not afford to do by more traditional, army centric, methods. As Churchill told the Commons in December 1919, 'The first duty of the Royal Air Force is to garrison the British Empire'.<sup>215</sup> Churchill and Trenchard's relationship would be the key to the survival of the RAF and would lead to the RAF finding its role in the post war world, a role that ultimately would come to be known as Air Control.

The traditional historical analysis of Air Control is that it represented an economic necessity for the government of Britain and a lifeline to the fledgling RAF. Not only was Air Control inhumane, furthermore many commentators have also argued that the term Air Control is misleading, and that in reality the scheme relied predominantly on ground forces.<sup>216</sup> Priya Satia argues that regardless of the RAF's stated approach:

[...] inescapably, however diligent the RAF may have been in giving villagers twenty-four-hour warnings by loudspeaker, leaflets, and "demonstration flights," the "pacification" of Iraq proved horrifically costly in Iraqi lives'.<sup>217</sup>

This chapter will re-examine some of these issues. Furthermore, this chapter will assess the learning process within the RAF to understand if the RAF can be deemed a learning organisation during this period.

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<sup>215</sup> HC Deb 15 December 1919 vol 123 cc87-147, 137

<sup>216</sup> Dr. James S. Corum, 'The myth of air control, reassessing the history', in *Aerospace Power Journal* (Winter, 2000), pp 61-77

<sup>217</sup> Priya Satia, 'The defense of inhumanity: air control and the British idea of Arabia', in *The American Historical Review*, vol. 111, no. 1 (February, 2006), pp. 16-51, 34

This chapter will show that the emergence of Air Control as a practice in the early 1920s was indeed out of necessity, but that as it evolved and matured, it became an essential part of the strategy for imperial control. Its emergence in the Middle East in the early 1920s was more as an idea or concept, and it was only through its practical application in this early period that a definitive doctrine and theory emerged. During the interwar period, we see a cyclical effect of operations impacting doctrine and in turn, doctrine impacting operations. This cyclical effect also points to the RAF being a learning organisation, and having the ability to allow practical experience to influence the creation and evolution of doctrine.

Before proceeding to review the conflicts in which Air Control was applied by the RAF, it is important in the first instance to understand the theoretical and doctrinal context in which these operations were carried out.

### ***Theory & Doctrine***

As was discussed in Chapter 1, the focus of airpower theory in the interwar period was predominantly based on the idea of strategic bombardment. When analysing the twenty-year period between the World Wars, all the main airpower theorists posited the view that airpower offered a uniquely strategic tool, one whose use could circumvent the traditional attrition experienced in the First World War. This was most certainly the view held by the likes of Douhet, Mitchell and Trenchard. When one looks for theory relevant to the use of airpower in small wars during this period, it is not present. This is illuminating. It can be argued that the focus on the strategic use of airpower was a tactic employed by airpower theorists to elevate the position of air forces in relation to the traditional service arms. They wanted to position

airpower as offering something distinct and unique, they most certainly did not want to appear to position airpower as an alternative way to deliver tasks already performed by the other services.<sup>218</sup>

Although airpower theorists may not have been writing about the use of airpower in small wars, this was the main function of airpower in the interwar years, this was especially true of the RAF. Due to this, air force commanders and personnel required instruction on the best use of airpower in these small wars environments, this instruction would come through the publication and circulation of both formal and informal doctrine.

When we speak of formal doctrine, particularly related to the RAF in this period, we are talking about a set of *RAF War Manuals*, the first of these, *CD22 Operations*, was published in 1922, and subsequent editions known as *API300* would be published periodically prior to 1940.<sup>219</sup> Each of these publications covered the range of roles that the RAF would be asked to perform, and each incorporated a chapter on the use of airpower in small wars. Supplementing the *RAF War Manuals* was a series of interim guidance documents, *Air Staff Memorandum (ASM)* and *Air Staff Notes (ASN)*; these guidance documents would appear periodically between the publications of full doctrine manuals as a way of plugging the gaps in RAF thinking prior to the publication of updated official doctrine.<sup>220</sup> This approach to the instruction of service personnel is enlightening as it relates to the assessment of the

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<sup>219</sup> 'Royal Air Force war manual, *CD22 operations*, 1922', TNA, Air 5/299

<sup>220</sup> Hayward, Joel S. A., *Air power, insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), p. 29

RAF as a learning organisation. It points to the ability of the RAF to capture the lessons learned during operations and to feed them into a doctrine loop that not only resulted in the update of doctrinal publications, but also led to the publication of interim documents to bring practitioners up to speed as soon as possible. ASM 16 and 46, discussed below, were great examples of this. Doctrines impact on military force is important, as Neville Parton has argued:

[...] doctrine is more fundamental to the production of military force than is perhaps sometimes appreciated, for it shapes the development of the different branches of the armed forces, forms the intellectual envelope within which the majority of its officers will conceptualise, and drives the way in which training is carried out. These three aspects between them will largely determine how armed forces will react in a given situation.<sup>221</sup>

In *CD-22 Operations* the RAF first enunciated its official doctrine on the use of airpower in ‘warfare against uncivilised enemy’.<sup>222</sup> The RAF stated that in this kind of operational environment that aircraft would have an important part to play, however they stated that it is ‘unlikely that they will be in a position to undertake the campaign entirely independent of military assistance’.<sup>223</sup> Thus from the very beginning the RAF was cognisant of the fact that to be successful in these types of operations would take a joint approach, utilising both air forces and land forces. In *CD22* the RAF discussed two main areas related to these kind of operations, the first was focussed on objectives, the second on the potential use of aircraft to pacify a country.

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<sup>221</sup> Neville Parton, ‘The development of early RAF doctrine’, in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178, p. 1156

<sup>222</sup> ‘Royal Air Force war manual, *CD22 operations*, 1922’, TNA, Air 5/299

<sup>223</sup> *Ibid.*, chapter XI

In terms of objectives, *CD22* stated that operations in this environment would require the commander to ‘depart from the ordinary rules of war’.<sup>224</sup> It stated that aerial reconnaissance and photography would play a key role in identifying the enemy’s sensitive points, namely these would consist of passes or narrow valleys that the enemy used for communications. Furthermore, when attacking the enemy’s home territory, the target set would include ‘large villages, live stock [sic] and crops’.<sup>225</sup> From the outset the RAF argued that the moral influence of airpower was its greatest asset, something that would be a central pillar in the RAF use of airpower through to the end of the Second World War. In this regard *CD22* states that ‘moral influences is a most important factor in this [type of] campaign [...] a vigorous offensive is the only way of conducting operations’.<sup>226</sup>

Another key aspect of operations was the perception of airpower and how it could instill obedience. Priya Satia has argued that in Iraq this was particularly impactful:

Air control, like irregular warfare, was designed to work in a region believed to systematically exaggerate information: where there was one plane, Arabs would spread news of dozens; a few casualties would instill fear of hundreds.<sup>227</sup>

Regarding the use of aircraft to pacify a country, *CD22* also advised in this regard. It stated that in this type of operation forces must be dispersed to a certain extent to forward airfields, this was important to ensure timely intervention. *CD22* also cautioned against the misuse of airpower in this regard, it stated that to protect

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<sup>224</sup> ‘Royal Air Force war manual, *CD22 operations*, 1922’, TNA, Air 5/299, chapter XI

<sup>225</sup> *Ibid.*, chapter XI

<sup>226</sup> *Ibid.*, chapter XI

<sup>227</sup> Priya Satia, ‘The defense of inhumanity: air control and the British idea of Arabia’, in *The American Historical Review*, vol. 111, no. 1 (February, 2006), pp. 16-51, 30

against this ‘power to take offensive action is vested in the Air Officer Commanding alone and must not be resorted to until the circumstances have been explained by wireless or by other means to the latter, and permission for action granted’.<sup>228</sup> This latter point would be a key refrain from the RAF then, and still resonates today. Airpower should be commanded and controlled by air officers, and that authority should not be divested fully to ground force commanders, regardless of the ratio of air to ground forces.

The publication of *CD22 Operations* was the first attempt by the RAF to codify the official doctrinal view of how airpower should be used in a small wars environment. This doctrine was not very far removed from that which governed the use of airpower in conventional operations. The concepts of centralisation, moral impact and the pursuit of a vigorous offensive, are all concepts that applied equally across the conventional and unconventional operational environment. Indeed Neville Parton argues that chapter XI essentially copied the armies approach to the punitive column, simply replacing troops with aircraft.<sup>229</sup> The next significant doctrinal publication from the RAF appeared in 1924, it was an *Air Staff Memorandum* entitled ‘Note on the method of employment of the air arm in Iraq’.<sup>230</sup>

In October 1922 Sir John Salmond became Air Officer Commanding all British forces in Iraq.<sup>231</sup> Over the next two years he would start to formulate an approach to

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<sup>228</sup> ‘Royal Air Force war manual, *CD22 operations*, 1922’, TNA, Air 5/299, chapter XI

<sup>229</sup> Neville Parton, ‘The development of early RAF doctrine’, in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178, p. 1172

<sup>230</sup> A summary of which is published as, John Salmond, ‘Note on the method of employment of the air arm in Iraq’, in *Flight Magazine*, 14 August 1924, p. 517

<sup>231</sup> Longoria, Michael, *A historical view of air policing doctrine* (School of Advanced Airpower Studies, Maxwell AFB, Alabama, Thesis, 2012)



applying the air force as a security mechanism within Iraq. In 1924, his approach would be communicated through *Air Staff Memorandum No. 16*. Within this document, 'Notes on the method of employment of the air arm in Iraq', Salmond laid out how airpower was utilised within Iraq. He was at pains to state that the approach to the use of airpower was one of restraint. He began by stating that in the clear majority of cases of unrest that the civil authorities deal with these without the requirement to engage the RAF. Furthermore, he provided an example of an operation where airpower was applied and the central focus of his description was about detailing the levels of checks and approvals that were required before offensive airpower was engaged. He states that, 'no air operations are in any circumstances initiated except at the request of the local British civil advisor'.<sup>232</sup>

Salmond goes on to state the often-heard refrain about airpower, highlighting its chief characteristics, namely; speed, ubiquity and economic efficiency. The contents of this document do not provide any great expansion on the guidelines for Air Control documented in *CD22*, however, due to its focus, it does provide an interesting insight into the RAF's need to defend Air Control as a policy. The fact that Salmond was at pains to talk about restraint, and to reiterate the economic efficiency of Air Control is illuminating. This focus can be explained due to the continuing opposition to the Air Control 'experiment' by the army, an opposition stated by Wilson during the Cairo conference in 1921 and an opinion that would be

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<sup>232</sup> Salmond, John, 'Note on the method of employment of the air arm in Iraq', in *Flight*, 14 August 1924, p. 517

voiced throughout the 1920s.<sup>233</sup> There were also heightened objections at home to what at the time was perceived as an inhumane approach to the administration of ‘semi-civilised countries’.<sup>234</sup> This memorandum was presented to parliament in August 1924 and was a political tool used in order to address the issues highlighted above.<sup>235</sup> To see the evolution in thought it is important to look at the next official iteration of the *RAF War Manual, AP1300*, to understand how the concept of Air Control developed in the early-to-mid 1920s.

*AP1300* published in 1928, and reprinted in 1930 and 1934 was the first significant doctrinal update to the principles espoused in *CD22*. *AP1300* would not be significantly revised until a second edition, published in 1940. With the 1928 publication of *AP1300* we see a significant update and expansion on the principles of using airpower in small wars. In chapter XIV, ‘The characteristics of operations against a semi-civilized enemy’, we see a much more thorough examination of the use of airpower in this operational environment. Whereas *CD22* contained three chapter sections and twenty-six numbered points, *AP1300* (1928) contains seven chapter sections and a total of fifty-five numbered points. It is not only the scale of the coverage of this area that had expanded, it also shows an evolution in thought, it is reasonable to assume that this was because of operational experience in Iraq, and elsewhere, in the early-to-mid 1920s.<sup>236</sup>

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<sup>233</sup> for example see; Andrew John Charles Walters, *Inter-War, Inter-Service Friction on the North-West Frontier of India and its Impact on the Development and Application of Royal Air Force Doctrine* (Thesis, University of Birmingham, 2017); Michael A. Longoria, *A historical view of air policing doctrine* (Air University, Maxwell AFB, 2012)

<sup>234</sup> Peterson, J. E., *Defending Arabia* (www.JEPeterson.net, 2000), p. 23; For example see, *extension of air control*, debate in House of Lords, 09 April 1930, also letters from 'The times' referring to the debate, RAF Hendon, AC73/23/33

<sup>235</sup> James S. Corum and Wray R. Johnson, *Airpower in small wars: fighting insurgents and terrorists* (Lawrence, Kan., 2003), pp 58-9

<sup>236</sup> ‘Royal Air Force war manual, AP1300, 1928’, RAF Hendon, 017691

By the time of the publication of *API300*, the RAF had built up an operational knowledge of conducting operations in a small wars environment and from this perspective *API300* showed a maturity of thought on the topic that was not present in its predecessor. *CD22* had been very functional, and very simplistic, *API300* was a much more substantive work. Whereas *API300* still emphasized the requirement for aerial reconnaissance; quick and decisive operations; the influence of moral factors and the importance of showing the colours, *API300* focused a lot more on critical success factors and provided a lot more substantive information on the way in which the RAF should approach operations. Significantly it highlighted what airpower could not do, for example it highlighted that the role of land forces was important, it stated that in certain circumstances joint operations were best and even in some instances airpower would act in a supporting role. Most illuminating is the approach to offensive operations, it stated categorically that the objective of operations was to induce the enemy to submit and where possible this should be done with the minimum destruction to life and property. As Walters has argued, ‘contrary to folklore, the doctrine advocated minimizing casualties and was more humane than the use of punitive ground expeditions’.<sup>237</sup> Furthermore it stated that offensive air action was only to be undertaken when political approaches had been exhausted. In counterpoint to this view, Priya Satia argues that:

[...] it is certainly specious to excuse air control on the grounds that other tactics are also brutal, especially in view of the fact that aerial bombardment is surely, in its all-seeing omnipotence, much more lethal than lower-tech forms of barbarity.<sup>238</sup>

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<sup>237</sup> Wing Commander A. J. C. Walters, 'Air control: past, present, future?', in *Air Power Review*, vol.8 no. 4 (Winter, 2004), pp 1-19, p. 15; RAF, *API300* (1928)

<sup>238</sup> Priya Satia, 'The defense of inhumanity: air control and the British idea of Arabia', in *The American Historical Review*, vol. 111, no. 1 (February, 2006), pp. 16-51, 36

*API300* also highlighted some innovations when it discussed the use of aircraft in troop transport and casualty evacuation, while also highlighting the necessity for ground to air communications. *API300* would not be updated until 1940, however an interim expansion was published in 1930, in the form of *Air Staff Memorandum 46 (ASM 46)*.<sup>239</sup>

When it was published in 1930, *ASM 46* was ‘intended to supplement the general principles outlined in chapter XIV’ of *API300* (1928).<sup>240</sup> Within this publication, the RAF defined the term Air Control as a means of security that utilises air forces as the *primary* arm, these being supplemented by ground forces. Furthermore, it stated that the ideal operating environment for Air Control was one that ‘combine[s] inaccessibility [...] with a population organised on a loose tribal basis’.<sup>241</sup> An interesting aspect of *ASM 46* is its statement on proportionality, it states that ‘action must be suspended as soon as the moral end is gained’, this is an important evolution and is a portent of the theory of coercive airpower used in later conflicts, most notably the bombing campaign in Vietnam.<sup>242</sup> There are two further evolutionary points that are significant in this document. Firstly, it discusses the idea of communal responsibility. This in effect is used to negate the idea that airpower is indiscriminate and thus leads to collateral damage. In this regard, it states that:

It is therefore sometimes necessary to drop notices on villages or tribal communities bordering on an area against which air operations are intended, to warn the inhabitants that the harbouring of people from the

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<sup>239</sup> ‘Air Staff memorandum, No. 46, notes on air control of undeveloped countries’, 1930, TNA, WO/33/3216

<sup>240</sup> *Ibid.*, p. 2

<sup>241</sup> *Ibid.*, p. 3

<sup>242</sup> *Ibid.*, p. 6; for a discussion of coercive airpower in Vietnam see, Robert A. Pape, *Bombing to win: air power and coercion in war* (Ithaca; London, 1996)

offending tribe will be regarded as an offence, which will render the party affording asylum themselves liable to bombing. The principle of the community is therefore introduced.<sup>243</sup>

In a similar vein, it also states that warning notices would be dropped on a target area to indicate that women and children should be moved to a safe place, as offensive operations are due to commence. As it relates to the idea of communal responsibility, these statements are somewhat derisory, just because you warn somebody you are going to do something, does not mean that the results of those actions are immune from criticism. Perhaps this thinking was influenced by The Hague Convention of 1907 and its approach to bombardment. However, this most definitely shows an evolution in RAF thinking, even if that evolution was simply a way in which to deflect criticism.

The second evolutionary concept put forward in this document is that of the civilising effect of airpower. In this regard, it states that airpower offers several advantages, including, providing medical services to effected peoples, and increasing the contact between the people and the administration through communication and reconnaissance by aircraft. It concludes by stating that if aircraft are available in sufficient numbers to deliver these additional elements that airpower ‘constitutes a definitely productive asset of considerable value in forwarding humane and constructive administration’.<sup>244</sup>

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<sup>243</sup> ‘Air Staff memorandum, No. 46, notes on air control of undeveloped countries’, 1930, TNA, WO/33/3216, p. 12

<sup>244</sup> Ibid., p. 15

The final official doctrinal publication during this period was an updated edition of *API300*, published in 1940.<sup>245</sup> Obviously by this time the RAF's focus was very much on conventional war in Europe, however the chapter relevant to Air Control did contain some updates. The chapter title itself was updated, no doubt based on its previous somewhat derogatory use of the term 'semi-civilised', the chapter was now entitled 'operations in unadministered and undeveloped areas'. Within this edition, we see the RAF talk for the first time about precision strikes against 'the house, fort or property of a particular individual or individuals'.<sup>246</sup> This may seem to have been overestimating the ability of the RAF to perform precision strikes, however this was indeed possible in countries like Iraq where aircraft could operate at low levels, it certainly would not be achievable in the contested air space over Europe in the coming years. One area in which we see a classic example of doctrine reflecting operational experience is in the point made regarding the use of air forces in support of civil police forces. As will be discussed later in this chapter, the RAF would have difficulty in operating in a largely urban environment like Palestine. As will be shown, this was a lesson hard learned, but undoubtedly one that had been duly learned by 1940. This issue had been addressed in ASM 52, however by 1940 it had been codified in major doctrine. In addressing this issue *API300* states that:

Aircraft can seldom be effectively used in support of civil police authorities in thickly and diversely populated areas. [...] Under such circumstances the support of air forces is best confined to reconnaissance, to the dropping of warning notes, to the conveyance of police authorities, and to other roles not entailing the use of the offensive armament of aircraft.<sup>247</sup>

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<sup>245</sup> 'Royal Air Force war manual, AP1300', 1940, RAF Hendon, 017708

<sup>246</sup> *Ibid.*, point 36

<sup>247</sup> *Ibid.*, point 64

The ability of the RAF to learn lessons during this period; to capture, analyse and disseminate lessons learned material through doctrinal publications was truly the action of a learning organization. This learning mentality was in place with the RAF from its inception, and Trenchard believed that the foundation of a strong service would be built on its ability to train and equip its men for the field. This learning environment was established with the creation of three key training centres; the Air Force Cadet College at Cranwell, the Air Force Staff College at Andover, and the technical training scheme based at Halton. This inculcation of a learning ethos is evidenced by the return of operational staff to these colleges to share their experiences in the field.<sup>248</sup> Not only were operational staff teaching the lessons learned at the staff college, they were also sharing their knowledge to a broader audience through articles in professional military journals like the *RAF Quarterly*, and more commercial publications like *Flight*. However, interestingly, in the early years of the RAF this channel of communications (i.e. published articles) was restricted due to the belief of senior staff officers that ‘there are at present no officers capable of writing a [sic] article in the first place, or to censor it when written in the second place’.<sup>249</sup> However, throughout the 1920s, and into the 1930s, this restriction would be loosened and more and more articles would be published by professional airmen. Another avenue of dissemination was RUSI lectures. However even these appeared to be somewhat restricted, as Neville Parton states:

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<sup>248</sup> for examples of this see, ‘RAF Staff College, 15th course, air participation in small wars’, by Wing Commander L.N. Hollinghurst, 13 July 1937, RAF Hendon, AC 73/23/35, also, ‘Precis of a lecture given by Squadron Leader G.C. Pirie to the RAF Staff College, 9th course, small wars’, RAF Hendon, B2256

<sup>249</sup> Neville Parton, ‘The development of early RAF doctrine’, in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178, p.1160

Overall then, out of the fourteen papers and lectures produced or given by RAF officers during the five years in question [i.e. 1918-1923], six were either specifically concerned with, or contained a major element related to, the use of air power in small wars or imperial policing.<sup>250</sup>

Having outlined the doctrine relevant to the use of airpower in small wars and some of the ways in which this doctrine evolved, it is now important to look at Air Control operations in the interwar period and attempt to understand if, and how, these operations reflected, and affected, RAF doctrinal thought. The first such operation would be conducted in British Somaliland, and it would be operations conducted here that would help shape the tactic of Air Control.

## ***Part I – The Birth of Air Control***

### **British Somaliland**

‘Why not leave the whole thing to us? This is exactly the type of operation which the R.A.F. can tackle on its own.’ So said Hugh Trenchard, Chief of the Air Staff, when asked whether the RAF could help in defeating Muhammad Abdullah Hassan, an insurgent leader that had plagued British Somaliland for twenty years.<sup>251</sup> By 1918, the War Office reported the ‘continued immunity of the Mullah [Hassan]’, someone who now represented ‘an unsubdued native potentate in Africa’.<sup>252</sup> The RAF deployed a squadron of DH-9As and operations to defeat Hassan lasted for

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<sup>250</sup> Neville Parton, ‘The development of early RAF doctrine’, in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178, p.1175

<sup>251</sup> Andrew Boyle, *Trenchard, man of vision* (London, 1962), p. 366

<sup>252</sup> ‘Proposal for operations against the Somali Mullah’, 19 November 1918, TNA, Ismay Papers III/1/22, WO 32/5828



three weeks.<sup>253</sup> This ultimately led to his flight from the protectorate and his death shortly afterwards. Leopold Amery, Parliamentary Undersecretary for the Colonies, referred to the RAF led operation as the 'the cheapest war in history'.<sup>254</sup> The Governor of British Somaliland stated that the RAF had proven to be the 'main instrument and decisive factor' in operations against Hassan.<sup>255</sup> Immediately after the conclusion of operations and throughout the 1920s, RAF operations in British Somaliland would be held up as an example of the efficacy of using the RAF in colonial operations. At a cost of a mere £77,000, and completed in three weeks, the RAF had appeared to solve a problem that the British authorities in Somaliland had faced for over twenty years.<sup>256</sup> However, the operations in British Somaliland were more nuanced than RAF proponents, then and now, would argue. This section will detail the context, operations and results of the campaign in British Somaliland to present an accurate reflection of the critical success factors of the operation, and to understand the performance of the RAF, and the lessons which were derived from the first colonial operation in which the RAF played a leading role.

British Somaliland had been a protectorate of the British Empire since 1885, and had variously been under the control of first the India Office, then the Foreign Office, and after 1905, by the Colonial Office.<sup>257</sup> From 1899 the protectorate had faced an armed insurgency led by the enigmatic Muhammad Abdullah Hassan, later to be

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<sup>253</sup> HC Deb 17 February 1920 vol 125 cc719-23

<sup>254</sup> H. Montgomery Hyde, *British air policy between the wars 1918-1939* (London, 1976), p. 91

<sup>255</sup> 'Memorandum by the Air Staff on the effects likely to be produced by intensive aerial bombing of semi-civilised people', nd, RAF Hendon, Trenchard Papers, MFC 76/1/21, p. 11

<sup>256</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 4

<sup>257</sup> HC Deb 17 February 1920 vol 125 cc719-23, 719, also see J.P. Slight, 'British and Somali views of Muhammad Abdullah Hassan's 'jihad,' 1899-1920' in *Bildhaan : An International Journal of Somali Studies*, vol. 10 (2011), pp 16-35

known by the British epithet as the Mad Mullah of Somaliland. The British had mounted several expeditions against Hassan, however the drive to resolve the issue had been put on hold with the outbreak of the First World War. Indeed, during the war, with British focus elsewhere, Hassan would extend his control to over half the country.<sup>258</sup> In the aftermath of that conflict the authorities once again turned their attention to Hassan. Plans from the army estimated a troop requirement of two divisions, and a potential operation lasting up to a year, ultimately there would be a comparatively small number of troops utilised during the campaign.<sup>259</sup> As has been discussed earlier in this chapter, this type of expenditure was not something that the British government would be able to sanction, as priorities in the post-war period turned to more pressing matters. It is within this context that the RAF was asked whether they believed they could provide a solution.

The RAF plan for the operation involved the deployment of a squadron of 12 DH-9As (see photo 1, below), these would be transported by the Royal Navy from Egypt and assembled in Berbera. The DH-9As were formidable aircraft; capable of carrying a bomb load up to 460 lbs along with two Lewis machine guns and a forward firing vickers, able to fly at up to 111mph and this coupled with a range of four and a half hours, made the aircraft ideal for the task at hand.<sup>260</sup> The combination of range, payload and speed, made these aircraft ideally suited to the geography of Somaliland, by being able to operate over long range and deliver a significant

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<sup>258</sup> Brigadier Andrew Roe, 'Air power in British Somaliland, 1920', *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 74-93, p. 78

<sup>259</sup> HC Deb 17 February 1920 vol 125 cc719-23, 722, also see Andrew Boyle, *Trenchard, man of vision* (London, 1962), p. 366; Brigadier Andrew Roe, 'Air power in British Somaliland, 1920', *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 74-93, p. 79

<sup>260</sup> Barry Renfrew, *Wings of empire* (Stroud. 2015), p. 52

payload once the targets had been identified. This geography meant that traditional military operations faced significant challenges, communications in the country were poor, with ‘camel tracks and ancient desert trails’ being all that ground forces could use.<sup>261</sup> Airpower would negate these geographical constraints.

**Photo 1 - Some RAF Force Z planes in Somaliland, 1920**



**Source** - <http://www.somalilandtimes.net/sl/2007/298/74.shtml>, accessed 04 October 2015

The expedition would comprise of two distinct phases; ‘An independent Air Force, self-contained in all respects, under the command of Group-Captain (sic) Gordon, taking his orders from the Air Ministry, was to attack the Mullah [...] In the event of these independent operations proving successful the rounding up of the Dervishes

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<sup>261</sup> Brigadier Andrew Roe, ‘Air power in British Somaliland, 1920’, *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 74-93, p. 76

would be undertaken by the ground troops'.<sup>262</sup> The ground troops in this instance would comprise of the following elements; The Somaliland Camel Corps, ; a composite battalion, 6th and 2nd King's African Rifles; a half battalion, Grenadiers, Indian Army; an irregular Somali tribal levy; and 300 *Illaloes* (indigenous scouts).<sup>263</sup> What is interesting about this composite ground force is that the only additional units shipped in for the operation were the King's African Rifles, all other units were in-theatre. The full force created for this undertaking is outlined in Table 1 below.

**Table 1 - British Somaliland Expeditionary Force, January 1920**

Component	Unit	Forces
Air	“Z” Unit	12 x DH-9a's, 36 Officers, 189 other ranks
Sea	Composite Unit	Odin, Clio, Ark Royal
Ground	Somaliland Camel Corps	700 Rifles
Ground	6 <sup>th</sup> and 2 <sup>nd</sup> Kings African Rifles	700 Rifles
Ground	1 <sup>st</sup> and 101st Grenadiers	400 Rifles
Ground	Somali Tribal Levy	1,500 Rifles
Ground	Illaloes	300

Source: Data taken from, Douglas Jardine, *The Mad Mullah of Somaliland* (London, 1923), p. 263 <sup>264</sup>

### Phase 1 - Independent operations

Independent air operations commenced on 21 January 1920, a flight of six aircraft departed Eil Dur Elan with the objective of attacking Hassan's forces in the Medishi

<sup>262</sup> 'The operations in Somaliland', in *Flight Magazine*, 04 November 1920, p.1149

<sup>263</sup> Douglas Jardine, *The mad mullah of Somaliland* (London, 1923), p. 263

<sup>264</sup> Douglas Jardine was a British Colonial Administrator, in 1916 he became Secretary to Administration in British Somaliland, and in 1920 he was appointed Officer in Charge HQ Services for the Somaliland Expeditionary Force. In 1923 Jardine wrote, *The mad mullah of Somaliland* (London, 1923).

area.<sup>265</sup> Owing to poor weather only one aircraft successfully reached Hassan's headquarters, however the attack proved to be significant, catching Hassan and his followers unprepared and uneducated as to the potentialities of airpower. On spotting the aircraft Hassan assembled his senior advisors to receive their guests, believing the aircraft were sent by their Turkish friends, the resultant bombing and strafing caused significant panic. Total casualties to Hassan's forces were claimed to be twenty dead and a further twenty wounded.<sup>266</sup> The other aircraft of the flight located Jidali Fort and attacked it and stock in the surrounding area.<sup>267</sup> Follow-up attacks in Medishi on 22-23 January caused the *haroun* to be 'set on fire by incendiary bombs, and the stock was scattered in all directions'.<sup>268</sup> On 24 January, following the operations of the preceding three days, the Air Commander ordered an extensive reconnaissance of the area, this revealed that Hassan and his followers had scattered and thus no meaningful targets remained. Based on this he ordered all aircraft to commence ground support operations from the next morning.<sup>269</sup> Thus after three days of independent operations, the campaign was now entering phase two, where airpower would be used to support ground operations, as per the original plan of campaign.

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<sup>265</sup> 'British Somaliland: 'Z' Unit war diary', 1920, TNA, AIR 5/1309

<sup>266</sup> Douglas Jardine, *The mad mullah of Somaliland* (London, 1923), p. 267; Brigadier Andrew Roe, 'Air power in British Somaliland, 1920', *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 74-93, p. 83

<sup>267</sup> 'Somaliland report', second supplement to the *London Gazette*, 05 November 1920, p. 2

<sup>268</sup> Douglas Jardine, *The mad mullah of Somaliland* (London, 1923), p. 267

<sup>269</sup> *Ibid.*, p. 267

## Photo 2 - Bombs explode NW of Tale Fort, 1920



**Source:** Bombs Bursting N.W of Tale. 1,000 ft. OBS OFR O Gayford, TNA, CO 1069

### Phase 2 - Joint operations

The bulk of operations performed by the RAF in the Somaliland campaign were joint operations, working closely with the fielded infantry and cavalry units.<sup>270</sup> Beginning on 25 January 1920, the RAF performed support operations including; ‘interdiction of escaping enemy forces, reconnaissance (including photo-reconnaissance), the provision of air presence, contact patrols with forward ground units, communications, leafleting, air transport and casualty evacuation.’<sup>271</sup> During this time airpower would be called upon to support ground objectives, thus in the first week of February air forces were called upon to mount an operation against Tale. This mission, which proved to be the last RAF bombing mission in Somaliland,

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<sup>270</sup> Brigadier Andrew Roe, ‘Air power in British Somaliland, 1920’, *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 74-93, p. 87

<sup>271</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 5

would involve a bombing run on the fort, followed by strafing runs so that the aircraft could ‘heavily and effectively’ engage the inhabitants.<sup>272</sup>

Casualty evacuation by the RAF in British Somaliland, represented the first time in which the RAF had performed this duty in the field. This task was performed with a modified DH-9A that was specifically designated as an air ambulance, this can be seen in photo 3, below.

**Photo 3 - Z Force DH9 being operated in the air ambulance role, 1920**



Source: [http://www.raf.mod.uk/history\\_old/line1918.html](http://www.raf.mod.uk/history_old/line1918.html)

In total during the campaign the RAF were responsible for the evacuation of ‘13 officers and one hundred others’.<sup>273</sup> Tasks such as leafleting, air transport and

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<sup>272</sup> ‘British Somaliland: ‘Z’ Unit war diary’, 1920, TNA, AIR 5/1309

<sup>273</sup> M.D. Scholl and C. L. Gesheker, ‘The zed expedition: the world's first air ambulance?’ in *Journal of the Royal Society of Medicine*, vol. 82, no. 11 (1989), pp 679–680, p. 680

casualty evacuation would become key operational duties of the RAF in small wars environments, and the experiences of the campaign in British Somaliland certainly influenced future operations of this nature. This second phase of the campaign amounted to mopping up exercises by the fielded infantry and cavalry units, this task was performed efficiently and successfully. Within three weeks Hassan's forces had ceased to exist as any sort of cohesive unit, Hassan himself fled over the border into Abyssinia, where he would die a short time later. The monetary cost of this victory was negligible, but what is more surprising is the paucity of casualties, during the three-week campaign only one native soldier was killed and one wounded.<sup>274</sup>

British Somaliland would prove to be the testing ground for the use of airpower in a leading role in colonial operations. The experiences in British Somaliland would lead to the creation of the concept of Air Control, a concept that would be examined in Iraq.

## Iraq

In 1919 Winston Churchill declared in parliament that the RAF would 'garrison the British Empire', in the newly acquired colony of Iraq, Churchill and the RAF would get to test this declaration.<sup>275</sup> In the wake of the First World War the British Empire expanded considerably with the addition of several new territories and mandates.

With the dissolution of the Ottoman Empire at the end of the war, the British Empire and France took on new responsibilities, most notably in the Middle East. With the

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<sup>274</sup> HC Deb 20 February 1920 vol 125 cc1231-2W

<sup>275</sup> HC Deb 15 December 1919 vol 123 cc87-147, 137



signing of the Treaty of *Sèvres* in August 1920, the British Empire, through League of Nations mandates, took over responsibility for the administration of Palestine, Jordan and Iraq.

This expansion of the Empire could not have come at a worse time for the British government. With these additional mandates came the requirement to garrison and administer the territories, something that the cash-strapped British exchequer could ill-afford. Iraq would prove to be one of the thorniest issues. The size of the country was immense and the budget estimates from the War Office for garrisoning Iraq were at a level that Britain was unable to meet. Winston Churchill, having become Secretary of State for the Colonies in 1921, looked for a way in which Iraq could be secured, without the expenditure of vast sums that the exchequer simply could not justify. Between the 12th and 20th March 1921 Churchill convened a conference in Cairo to discuss the Middle East. It would be a military subcommittee at this conference that would rubber-stamp the new policy of controlling the Middle East, a policy that would come to be known as Air Control.<sup>276</sup> This ‘Cairo policy’ presented the British, according to Churchill, with the only viable option to maintaining control in Mesopotamia, the only other alternative would be the abandonment of the mandate.<sup>277</sup>

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<sup>276</sup> David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 25

<sup>277</sup> Jafna L. Cox, ‘A splendid training ground: The importance to the Royal air force of its role in Iraq, 1919–32’, *The Journal of Imperial and Commonwealth History*, vol. 13, no. 2 (1985) pp 157-184, p. 163

After the success of RAF operations in the colonies in the immediate post war years, most notably in Somaliland, the RAF were convinced that they could expand on the idea of using air power to control Britain's imperial possessions. The opportunity to do this arose when the Colonial Secretary, Winston Churchill, was seeking a way to reduce the cost of policing Iraq, to this end, on 29 February Churchill wrote a letter to Hugh Trenchard, Chief of the Air Staff, in which he requested that the RAF provide him with 'a scheme and state whether you consider the internal security of the country [Iraq] could be maintained by it'.<sup>278</sup> From Churchill's letter it is quite clear that this is something that had been considered before, as his thoughts on the idea were quite mature, no doubt influenced by the conduct of the RAF in colonial operations in the immediate post war period. Even at this early stage he highlighted the necessity of secure dispersed airfields, and the requirement for an integrated ground force component.<sup>279</sup>

By the 12th of March Trenchard submitted 'a preliminary scheme for the military control of Mesopotamia by the Royal Air Force'.<sup>281</sup> Within this document Trenchard outlined the guiding principles that would provide a framework for RAF Air Control, these included; leveraging the speed and range that aircraft provided, using reconnaissance and intelligence as a key component of operations, acting decisively and continuously once engaged, and engaging with the political officers within a territory. The RAF stated that they would be 'satisfied that if the broad principles outlined are adopted, and the Air Officer Commanding is given full authority to

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<sup>278</sup> Letter from Winston Churchill to Sir Hugh Trenchard, 29 February 1920, as quoted in Hyde, H. Montgomery, *British air policy between the wars 1918-1939* (London, 1976), p. 92

<sup>279</sup> Ibid.

<sup>281</sup> 'A preliminary scheme for the military control of Mesopotamia by the Royal Air Force', 12 March 1920, RAF Hendon, Trenchard Papers, MFC 76/1/21

carry them out, the country can be held on the lines laid down in the attached scheme'.<sup>282</sup> One of the key aspects of these principles was that the Air Officer Commanding [AOC] would have full authority, essentially the RAF would control all military forces in Iraq. The document goes on to lay out force structures, military strength and potential locations for bases. This document provides an interesting insight into the early planning and preparation for Air Control in Iraq, furthermore, it is obvious from a reading of this document that this had been something that the RAF had been planning for a considerable amount of time. The approach to operations had been well planned and it is clear through this document that considerable work had already been achieved in thinking through the most appropriate approach and methodology. The seeming success of operations in Somaliland had buoyed confidence in the ability of the RAF to conduct operations in colonial territories, furthermore the lessons learned from those early operations had helped coalesce the thinking that underlined the Air Control principal.

By way of paving the way for the Air Control proposal, an Air Staff memorandum was published in March 1921 in a document titled 'The part of the Air Force of the future in imperial defence'. This document contained a covering note from Winston Churchill in which he concurred with the Air Staff view that 'the claim to maintain order [by the RAF] in certain barbarous countries is sound'.<sup>283</sup> This memorandum goes on to state that its key purpose is 'to consider to what extent the developments of air power may be of assistance to finding a solution for the problems in which

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<sup>282</sup> 'A preliminary scheme for the military control of Mesopotamia by the Royal Air Force', 12 March 1920, RAF Hendon, Trenchard Papers, MFC 76/1/21

<sup>283</sup> 'The part of the Air Force in the future of Imperial defence', 21 March 1921, RAF Hendon, Trenchard Papers, MFC 76/1/21

security and economy can be reconciled'.<sup>284</sup> This one statement sums up the whole argument for Air Control and would be revisited consistently throughout the 1920s and into the 1930s. Air Control could offer a level of security within the imperial territories at a cost that was achievable for the Exchequer in the new post-war world. The rest of this memo argued that the development of the RAF was at such a level that it enabled their use in a small wars environment currently, furthermore it stated that the experience garnered to date in operating in such an environment has demonstrated that the RAF was ready to take on a much more significant role. It concluded by stating that 'the efficacy of the Royal Air Force as an independent arm should be put to proof by the transference to it of the primary responsibility of order in some area of the Middle East, preferably Mesopotamia'.<sup>285</sup> This emphasis on Iraq is interesting, Satia Priya has argued that there were certain spatial conceptions of Iraq that made it an obvious choice, further to this it was:

an ideal system for the problems they faced in the Middle East [...] it was essentially a system of control by intelligence, the epitome of the new operational intelligence, with aircraft substituting for the political officer who had long combined the tasks of intelligence and administration.<sup>286</sup>

The RAF was building a case, both within military circles, and within political ones. Undoubtedly in Winston Churchill they had a very powerful political ally, the importance of this would be confirmed at the Cairo Conference later the same month.

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<sup>284</sup> 'The part of the Air Force in the future of Imperial defence', 21 March 1921, RAF Hendon, Trenchard Papers, MFC 76/1/21

<sup>285</sup> Ibid.

<sup>286</sup> Priya Satia, *Spies in Arabia, the Great War and the cultural foundations of Britain's covert empire in the Middle East* (Oxford, 2008), p. 243

The Cairo Conference was convened by Winston Churchill to discuss the mounting issues within the Middle East. Trouble in Iraq was still simmering and elsewhere murmurings of unrest were apparent. However, Cairo was not where Air Control was agreed, it was a *fait accompli* by this time.<sup>287</sup> Starting in December 1919 when Churchill stated that the RAF would garrison the Empire, both he and Trenchard had spent fifteen months refining the principals and approach that would enable the Air Control experiment. What Cairo did was to rubber stamp the decision and this was done in the presence of all the relevant stakeholders, this included the army and local political administrative staff. Since the decision had already been made, none of the attendees could veto it, however they certainly voiced their concerns, most notably the army.<sup>288</sup> Regardless, the decision had now been made to place the command of all British forces in Iraq under the control of an RAF officer, the concept of Air Control had been ratified, and the experiment was about to begin.

The Cairo Conference put in place a timeline of October 1922 for the transference of command responsibility to the RAF. By August of 1921, in a memo from the Chief of the Air Staff, the RAF outlined the arrangements that would be put in place to control Iraq. This memo, entitled ‘the Air Force scheme of control in Mesopotamia’, was an expansion of the scheme of control highlighted in a similar Air Staff memo published prior to the Cairo conference in March of 1921.<sup>289</sup> This document essentially reiterated many of the points of its predecessor, however it did so in more

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<sup>287</sup> For an interesting account of this prior approval, see, Andrew Boyle, *Trenchard, man of vision* (London, 1962), p. 378

<sup>288</sup> Andrew Boyle, *Trenchard, man of vision* (London, 1962), p. 381

<sup>289</sup> ‘Memorandum by the Chief of the Air Staff on the Air Force scheme of control in Mesopotamia’, 05 August 1921, RAF Hendon, Trenchard papers, MFC 76/1/21; A preliminary scheme for the military control of Mesopotamia by the Royal Air Force’, 12 March 1920, RAF Hendon, Trenchard Papers, MFC 76/1/21

detail. Once again, we see the RAF highlighting the importance of several elements of the Air Control scheme; armoured car companies, wireless communications, the adequate staffing of headquarters etc. It also provided some interesting budgetary details. The proposed budget for the employment of the Air Force scheme of control for Iraq included; £1,904,000 for the provision of eight squadrons, central and regional headquarters and additional wireless personnel, £199,800 for three armoured car companies; £55,000 for two armoured trains and two gunboats; £72,000 for one Indian pack battery; £850,000 for four infantry battalions (two British and two Indian); and a further £460,000 for administrative services.<sup>290</sup> These budgetary forecasts projected a total spend in the region of three and a half million pounds, this is startling when one considers that the actual spend in 1921-22, prior to Air Control in Iraq, was 21 million pounds.<sup>291</sup> It was this economy of the Air Control scheme that would be its greatest advantage, Trenchard himself, writing in a letter to Group Captain A.E. Borton stated that ‘the keynote of this scheme is economy’.<sup>292</sup>

By November 1921 the Air Staff had begun to document the lessons they had learned from the operations conducted thus far in imperial territories. In a document entitled, ‘Air Staff note on the lasting effects of air operations on semi-civilised and uncivilised tribes’, the RAF argued that Air Control had already proved its value.<sup>293</sup> This document is another example of the RAF building the case for Air Control,

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<sup>290</sup> 'Memorandum by the Chief of the Air Staff on the Air Force scheme of control in Mesopotamia', 05 August 1921, RAF Hendon, Trenchard papers, MFC 76/1/21

<sup>291</sup> HC Deb 27 February 1929 vol 225 cc2012-2014, 2013

<sup>292</sup> Jafna L. Cox, ‘A splendid training ground: The importance to the Royal air force of its role in Iraq, 1919–32’, *The Journal of Imperial and Commonwealth History*, vol. 13, no. 2 (1985) pp 157-184, p. 165

<sup>293</sup> 'Air Staff note on the lasting effects of air operations on semi-civilised and uncivilised tribes', Air Staff note, 23 November 1921, RAF Hendon, Trenchard Papers, MFC 76/1/21

specifically this document compares the use of Air Control versus the traditional ground centric punitive column. One of the key arguments for Air Control was that it offered the potential for a more humane approach to policing the peoples of the Empire. However, there were many that argued that Air Control was inherently inhumane. The perceptions of the inhumanity of Air Control are highlighted by Sir Basil Embry, when in his memoirs, he states that:

There were some people that argued that "Air Control" was inhuman [...] they seemed to think that every bomb dropped from the air and every bullet fired from an aeroplane was labelled "for women and children only", but that every shell fired from the ground had on it "for combatants only".<sup>294</sup>

The charge of inhumanity would be one that the RAF would need to defend against repeatedly in the coming years.<sup>295</sup> The Air Staff note states that at best the punitive column had a transitory effect, and that the use of aircraft offered an earlier and more permanent resolution to issues of internal policing. However, what is interesting about this document is that the RAF felt the need to continue to argue for Air Control, even after the decision to implement it in Iraq had been made. The final paragraph of this document is illuminating in this respect, it states that 'time alone can prove this [the success of Air Control] provided that the scheme is given a fair trial'.<sup>296</sup> It would appear from the language used that Trenchard was wary of the potential interference of the Army and Navy in his grand experiment, thus similar documents stating the case for Air Control would continue to be sent out from the Air Staff.

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<sup>294</sup> Sir Basil Edward Embry, *Mission completed* (London, 1957), p. 29

<sup>295</sup> for example see, HC Deb 20 March 1923 vol 161 cc2399-471, 2462

<sup>296</sup> 'Air Staff note on the lasting effects of air operations on semi-civilised and uncivilised tribes', Air Staff note, 23 November 1921, RAF Hendon, Trenchard Papers, MFC 76/1/21

Another important document on this topic is a 'Memorandum by the Air Staff on the effects likely to be produced by intensive aerial bombing of semi-civilised people', although undated it is certainly from this time and from context would appear to have been produced in late 1921 or early 1922.<sup>297</sup> This document provides a high level of detail on the objectives and process for Air Control operations. It states that the primary object of aerial bombardment in this instance is:

to dislocate the normal life of the community, to destroy any outward and visible signs of authority [...] and this by a continued offensive to bring home to its people the superior striking power of their opponents<sup>298</sup>

This document, as with many of its predecessors, also argues time and time again for the efficacy of Air Control. In this instance, it includes excerpts from telegrams from the Civil Administrator, Baghdad, in which he states that the use of the Air Force represents 'an inexpensive, efficient and merciful means of maintaining order', furthermore in the telegram he argues that the use of Air Control is more discriminatory and thus avoids innocent casualties. A.T. Wilson, the Civil Commissioner, was not the only witness quoted, the document also includes favourable quotes from the General Officer Commanding, Iraq (an army officer), and from the Governor of the Somaliland Protectorate. While this document is undoubtedly a piece of PR where the RAF was trying once again to sell the concept of Air Control, it is also surprisingly blunt in some of its utterances. For example, it states unequivocally that war is brutal and goes on to defend the brutality of Air Control by stating that 'it is not the idea of brutality which offends humanity but

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<sup>297</sup> 'Memorandum by the Air Staff on the effects likely to be produced by intensive aerial bombing of semi-civilised people', nd, RAF Hendon, Trenchard Papers, MFC 76/1/21

<sup>298</sup> Ibid.



rather the novelty of the method which disturbs the conservative prejudices'.<sup>299</sup> This idea that Air Control represented an inhumane way to maintain control was a charge levelled by the army prior to the transfer of operational command of Iraq to the RAF. However, it would also be a charge that would be increasingly and more publicly levelled by newspapers and politicians at home within a few years of the RAF assuming control of Iraq.

So why were Trenchard and the RAF so nervous? The simple fact is that by the summer of 1921 the decisions that had been taken at the Cairo Conference had not all been approved by parliament. Churchill's broad approach had been approved, however the decision on the role of the RAF within that approach had been deferred.<sup>300</sup> Some MP's were sceptical of the large savings that had been promised, supposedly Air Control would save the British Exchequer ten million pounds in its first twelve months, this sounded too good to be true.<sup>301</sup> Also, the RAF assumption of Air Control would involve a transition from the Army, and Wilson, the Chief of the Imperial General Staff, would use every opportunity to make the transition as difficult as possible. One example of this is the issue of the provision of armoured car companies in Iraq, which was an essential element of the Air Control scheme. While the RAF had originally wanted light tanks, the Army had pushed back on this, not wanting to hand control of this significant asset to the RAF. The army made it quite clear that the provision of these armoured car companies was something that the War Office would need to be heavily involved in. In typical Trenchard fashion,

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<sup>299</sup> 'Memorandum by the Air Staff on the effects likely to be produced by intensive aerial bombing of semi-civilised people', nd, RAF Hendon, Trenchard Papers, MFC 76/1/21

<sup>300</sup> Andrew Boyle, *Trenchard, man of vision* (London, 1962), pp 386-7

<sup>301</sup> HC Deb 14 June 1921 vol 143 cc265-334, 272

the RAF negated this by building its own armoured cars in RAF workshops in England and Egypt. By the time the RAF assumed control of Iraq they had a full complement of armoured car companies.<sup>302</sup> In October 1922, Sir John Salmond took over as the officer commanding all British forces in Iraq. From this point on he would carry out operations that would ensure the internal and external security of Iraq.

### Operations

Once the RAF had taken operational control of Iraq it could proceed with trying to implement, in a complete sense, its Air Control scheme. To understand the various ways in which this was done it is important to look at some of the different types of operations that the RAF performed and discuss how, if at all, these related to the plans and doctrine that were discussed earlier. While the central concept of Air Control was the substitution of air forces for ground forces, and the use of aerial bombardment to replace the traditional ground punitive column, when we discuss RAF operations in Iraq during this period there are many different types of operations that they were involved in. These operations included; aerial bombardment, reconnaissance, aerial blockade, transport, re-supply, propaganda and casualty evacuation. This section provides some examples of functions carried out in Iraq to demonstrate the breadth of operations conducted by the RAF during this period, operations conducted from bases such as Hinaidi Aerodrome, pictured in photo 4, below.

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<sup>302</sup> Andrew Boyle, *Trenchard, man of vision* (London, 1962), p. 388

**Photo 4 - Aerial view of RAF Hinaidi Aerodrome, Mesopotamia c. 1923 - 1924.**



**Source:** Imperial War Museum, Q 114739

As already stated, the vision for the Air Control scheme was around substituting air forces for ground forces and replacing the ground punitive column with aerial bombardment. This was one of the key missions of the RAF in Iraq. This approach of replacing the ground punitive column with air operations had several perceived benefits. These included the ability to react quickly to conduct operations over great distances, the ability to centralise forces without sacrificing mobility, the ability to target the morale of the enemy by attacking them with a force that they were unable to counter-attack, and finally the ability to engage with the enemy through propaganda and delivering political officers to the affected area to speed up

negotiations.<sup>303</sup> This last point, the intelligence aspect, was of particular importance. Satia Priya has argued that in effect Air Control ‘was essentially a system of control by intelligence’.<sup>304</sup>

One example of these type of operation was in the Samawah district in southern Iraq in late 1923 and early 1924. On this occasion two tribes were targeted due to their non-payment of taxes. Initially the tribal heads were summoned to Samawah to pay a deposit of money by way of assuring the tribe’s good behaviour. This was not forthcoming and the result was authorisation for the RAF to begin offensive operations.

These operations involved ‘forty planes from four different squadrons’ and the ordnance dropped was significant, amounting to:

[...] twenty five tonnes of bombs and 8,600 incendiary bombs as well as showering the area with 15,000 rounds of ammunition in two days. Bomb raids were carried out more or less continuously for these two days.

A police force sent subsequently to the area found that ‘the town had been completely demolished’.<sup>305</sup>

These operations achieved the objectives within the space of two days, the result was that, ‘the moral effect of the action taken against these two tribes was so great that it

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<sup>303</sup> J.E. Peterson, *Defending Arabia* (www.JEPeterson.net, 2000), p. 22

<sup>304</sup> Priya Satia, *Spies in Arabia, the Great War and the cultural foundations of Britain’s covert empire in the Middle East* (Oxford, 2008), p. 243

<sup>305</sup> Yuki Tanaka and Marilyn B. Young, *Bombing civilians, a twentieth century history* (New York, 2010), p. 19

was possible to summon to Samawah all the sheikhs and the principal headmen throughout the whole area. The Minister of the Interior addressed them and laid down certain conditions, which were accepted.<sup>306</sup> While success had been achieved, there had been a considerable cost to the local population; 144 people were killed and an unspecified number were wounded during the operations.<sup>307</sup> However, from the Air Ministries point of view the operations in Samawah had been prototypical ‘of how air action should be used against uncivilised tribes’<sup>308</sup>. However, this operation raised numerous concerns. Glubb Pasha, writing in the aftermath of the operation noted:

It is regrettable but it appears almost inevitable that aerial action should be associated with the payment of taxes.

From a similar perspective, another RAF officer noted in 1924 that the tribes ‘poverty and fecklessness’ made them unable to pay their taxes regardless.<sup>309</sup>

It was not only field personnel that seemed uneasy with the operations at Samawah. When the official report was submitted to London the Deputy Chief of the Air Staff commented that:

If this report as it stands gets into the hands of undesirable people, harm might be done not only to the Air Force but also to [HM] Government [...] I think that certain paragraphs should not be sent out without further consideration.<sup>310</sup>

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<sup>306</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 29

<sup>307</sup> Peter Sluglett, *Britain in Iraq* (London; New York, 2007), pp 189-90

<sup>308</sup> ‘Co-ordination of training of R.A.F. and Dominion Air Forces’, 1923-24, TNA, Air 5/334

<sup>309</sup> Peter Sluglett, *Britain in Iraq* (London; New York, 2007), p. 190

<sup>310</sup> *Ibid.*

Although offensive operations such as that described at Samawah are perceived as constituting the bulk of RAF operations in Iraq, in fact, as Sebastian Ritchie argues, ‘proscription bombing was probably the offensive tactic employed least’.<sup>311</sup> Nevertheless, it was operations like these that would give those who opposed Air Control the ammunition to apply pressure to the Government at home. Perceptions were not aided by the language used to describe such operations, in a 1924 pamphlet the RAF described how an operation like that conducted in Samawah proved that the natives ‘now know that within 45 minutes a full size village [...] can be practically wiped out and a third of its inhabitants killed or injured by four or five machines’.<sup>312</sup>

Early in the Air Control of Iraq one of the key areas of operations for the RAF was in the northern district of Kurdistan. Within this mountainous terrain, the RAF faced two challenges; that of Turkish irregulars seeking to further Turkish territorial claims, and that of Kurdish separatists led by Shaikh Mahmoud. The geography of the Kurdish region was well suited to an airpower first approach, the terrain was very mountainous and thus it proved easier for aircraft to penetrate than traditional ground forces. However, in 1923, John Salmond, AOC Iraq, used a combination of air and ground forces. In the main throughout the first half of 1923 ground forces would represent the main component of Salmond’s forces in the region, however air power would prove to be a very effective force multiplier and would also demonstrate the different ways in which it could support and enhance the conduct of ground operations. Within a report published in the *London Gazette* in June 1924, Salmond

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<sup>311</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 10

<sup>312</sup> ‘Bombing policy in Iraq’, 1923-24, TNA, AIR 5/334

detailed some of the various ways in which the air forces supported the ground forces, these included; propaganda through leaflet drops, bombardment against the Sheikh's headquarters and villages where his irregulars were based, and communications through the air lift of officers and orders. One of the key selling points about Air Control and the use of aircraft in this type of environment was that they offered the possibility to nip potential problems in the bud, due to their speed and mobility. This was something that Salmond believed that they achieved during these operations, as he stated in his report:

It was without doubt largely due to those air attacks directed against Shaikh [sic] Mahmoud and his forces that he was unable either to perfect his organisation or to raise the tribes for resistance to the column.<sup>313</sup>

Undoubtedly, as the AOC, Salmond was not a neutral commentator, however he had utilised a combined forces approach, and as a result had an appreciation of the part that air forces could play in combined operations. One of the key elements of the air force contribution to these operations was a very traditional one. Reconnaissance performed by the air component provided Salmond and his officers with a detailed picture of the area of operations and in that way enabled them to use their ground forces more effectively.<sup>314</sup> However even at this early stage of Air Control operations in Iraq, the ability of the enemy to adapt to the new scenario was apparent. As Sir Basil Embry notes in his memoirs, while operating out of Kirkuk, 'Sheik Mahmud had an efficient intelligence and air-raid warning system'.<sup>315</sup>

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<sup>313</sup> as quoted in, *Flight Magazine*, no. 25, vol. 16, June 19, 1924, p. 394.

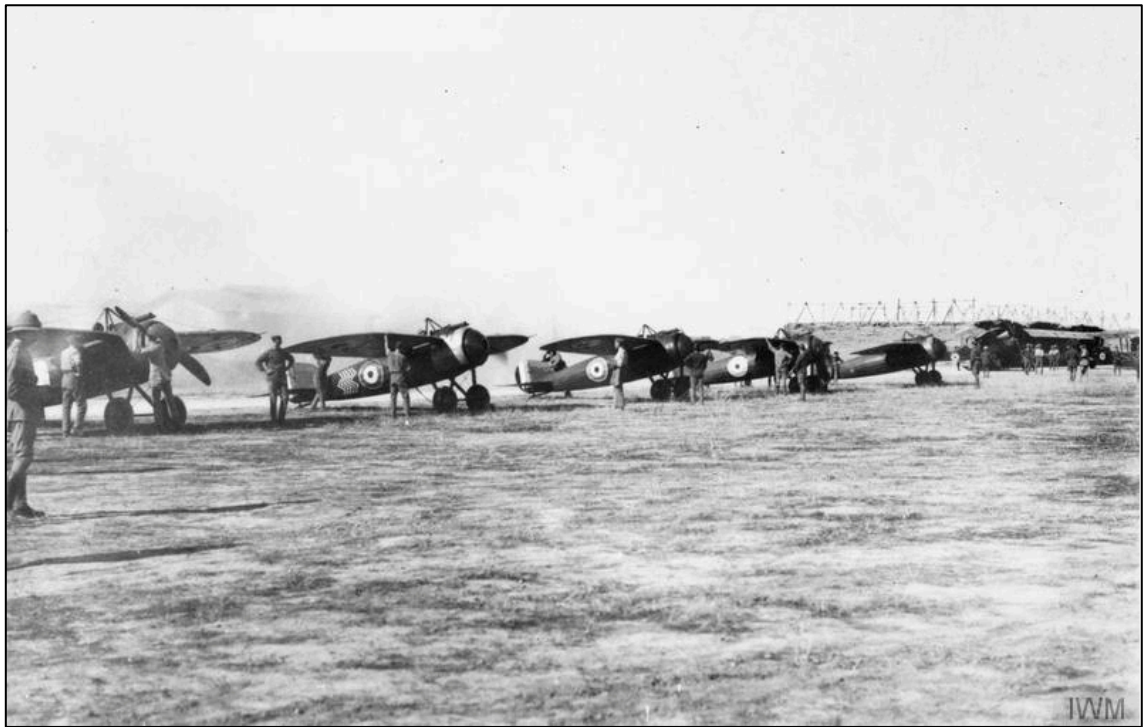
<sup>314</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 12

<sup>315</sup> Sir Basil Edward Embry, *Mission completed* (London, 1957), p. 40

Undoubtedly as the RAF continued operations in Iraq, their enemy would adapt, and thus require the RAF to modify their own approach.

**Photo 5 - Bristol M1Cs in Mesopotamia, 1919.**

Bristol M1Cs of No. 72 Squadron, Royal Air Force, lined up at an airfield in Iraq.



**Source:** Imperial War Museum, H(AM) 1583

Offensive operations, like those described earlier at Samawah could also be used against tribes that were raiding. Raiding was a natural part of the social and economic life of the mainly nomadic tribes of the Iraqi deserts, however to portray the administration as legitimate it needed to show that it could protect its people against unlawful activity. Operations against raiding tribes were similar in nature to those described previously; an ultimatum would be delivered and if refused then offensive operations would be initiated. Squadron Leader H.G.W. Dock describes a typical operation of this type in a lecture he gave to the Staff College in 1931. An incident of raiding was reported and aircraft were sent to stop and turn back the



raiders. Although the first day's search proved unsuccessful, the next day the raiders were discovered and were made to turn back. Following this a wireless message was transmitted to base that brought out armoured cars (see photo 5, below) that arrested the leaders of the raiding party.<sup>316</sup>

**Photo 6 - RAF armoured car in the Iraqi desert. ND, interwar period.**

Rolls-Royce armoured car 'Cerberus' of a Royal Air Force Armoured Car Company in the Iraqi desert.



**Source:** Imperial War Museum, H(AM) 496

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<sup>316</sup> 'R.A.F. Staff College, 9th course, The problem of control of the Southern Desert, Iraq, by Squadron Leader H.G.W. Dock', 09 October 1931, RAF Hendon, B2257, p. 7

Operations such as these were numerous and could be quite large in scale. However, they were not without risks. In an operation against raiders in March 1929 a wireless operator in the leader's aircraft was shot and killed by rifle fire from the ground.<sup>317</sup>

Related to the proscriptive bombing operations was also the concept of the aerial blockade. Essentially the aerial blockade, or inverted blockade, was a tactic used to disrupt the everyday life of belligerent tribes, to such an extent that they would acquiesce to Government demands. The blockade was about applying the minimum amount of force, the opposite of the operation in Samawah outlined above. The blockade would involve the delivery of an ultimatum to the tribe, if the tribe did not meet the demands of the ultimatum, a warning would be issued that offensive operations would begin within a particular time frame. Once the deadline had passed operations would begin and would be sustained until the Government demands were met. The offensive operations were meant to keep the tribes away from their homes and their livestock. 'In effect, the tribesmen are blockaded from their normally daily lives'.<sup>318</sup> Early on in Iraq the aerial blockade was only achievable during daylight hours, and tribes learned to resume their activities after dark when the RAF returned to their bases. To counter this the RAF sometimes flew night-time operations, as Sir Basil Embry has recalled, 'the blockade would be conducted by single or pairs of aircraft patrolling overhead day and night for an indefinite period', however night-time operations were only carried out on perfect moonlit nights.<sup>319</sup> Subsequently the RAF did develop a counter to the tribesmen's nocturnal activity, that was the use of

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<sup>317</sup> 'R.A.F. Staff College, 9th course, The problem of control of the Southern Desert, Iraq, by Squadron Leader H.G.W. Dock', 09 October 1931, RAF Hendon, B2257, appendix b, p. 2

<sup>318</sup> Michael A. Longoria, *A historical view of air policing doctrine* (unpublished thesis, 2012)

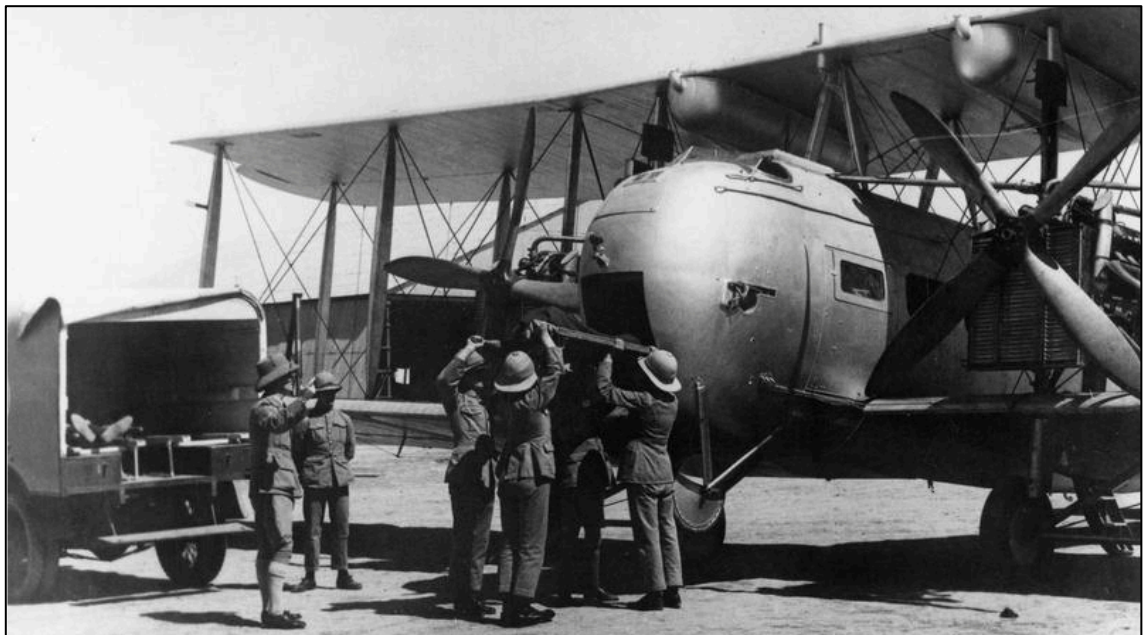
<sup>319</sup> Sir Basil Edward Embry, *Mission completed* (London, 1957), p. 30

delayed action bombs to maintain the blockade during periods when the RAF were not overhead. This RAF tactical change was in response to the indigenous people's adaption to the blockade.<sup>320</sup> However as Gerald Gibbs in his memoirs recalls, 'they [the tribes, ultimately] gave up and came in because they could not stand the continual unending interference with their normal lives [...]. There was no future in it, and no interesting fighting and no loot'.<sup>321</sup>

Another key task performed by the RAF in Iraq was that of casualty evacuation, or *casevac*. Initially this task was performed using modified Vickers Vernon aircraft, an example of this can be seen in photo 7, below.

**Photo 7 – Casualty evacuation in Iraq. ND, interwar period.**

Wounded men being placed aboard a Vickers Vernon aircraft in Iraq. ND, interwar period.



**Source:** Imperial War Museum, H(AM) 343

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<sup>320</sup> For a very interesting discussion on tribal responses to RAF operations see, David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England; New York, 1990), in particular chapter 6, pp 107-33

<sup>321</sup> Sir Gerald Gibbs, *Survivor's story* (London, 1956), p. 39

By 1925 two dedicated air ambulances were operational in Iraq and worked on a week on, week off schedule. Thus, at any time of the day or night, in any area of Iraq there was an air ambulance ready to respond to emergency calls. This was a significant development. Previously if a soldier was injured or became sick while operating away from their main base, there would be the requirement for them to be transported overland, typically by cart or donkey, this could take several days and would obviously not have helped their condition. With the establishment of the air ambulance service, most areas of Iraq could be reached quickly, and medical assistance given immediately, as typically a medical orderly, or sometimes a doctor or nurse, would accompany the flight.<sup>322</sup>

This section has outlined only a small proportion of the type of operations that the RAF carried out in Iraq, additional to these there were detailed reconnaissance and photography missions; offensive operations in border regions against the Turks in the North and Nejd raiders from Saudi Arabia in the South; joint missions with ground forces; and air transport and air lift operations.

During this period, the RAF were also involved in operations across the Middle East, including in Aden, Palestine and Transjordan. Within these territories, we see the ongoing evolution of the Air Control concept.

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<sup>322</sup> Sir Basil Edward Embry, *Mission completed* (London, 1957), p. 52

## ***Part II – The Evolution of Air Control***

### Aden

Aden is situated at the southern tip of the Arabian Peninsula, surrounded by Oman to the east, Yemen to the north, the Gulf of Aden to the south and the Red Sea to the west. To the south, across the Gulf of Aden lay British Somaliland. Thus, by controlling British Somaliland and Aden, the British controlled access to the Red Sea, and thus the Suez Canal. Aden was originally a Crown Colony; however, this was extended to the Aden Protectorate due to several treaties with local tribes, thus creating a buffer zone around the original Crown Colony, Aden was then divided into Eastern and Western regions for administrative purposes.<sup>323</sup>

Even before the success achieved in Iraq with the policy of Air Control, the RAF were already making a case to use Air Control, and the policy of air substitution, to provide security in the British Protectorate of Aden. Soon after the Cairo conference in 1922, Aden was noted as a potential territory that would be suitable for Air Control.<sup>324</sup> However it would take until 1926 for the Cabinet to approve the use of Air Control in Aden, and it would not be until January 1928 that the RAF would assume control. As in Iraq the main reason for the implementation of Air Control was one of economic efficiency; by increasing the RAF in Aden from a single flight to a full squadron, the corresponding reduction in army forces would produce an

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<sup>323</sup> Dr. Sebastian Ritchie, 'The RAF and Aden, 1928-1967', *Royal Air Force Historical Society Journal*, no. 48 (2010), pp 110-134

<sup>324</sup> Trenchard papers, II/27/63/1, Trenchard to Ellington, 29 May 1922, as quoted in, Derek J. P. Waldie, *Relations between the army and the Royal Air Force*, unpublished thesis (London University, 1980), p. 146

annual saving in the region of £170,000.<sup>325</sup> This reduction was illustrated in the House of Commons with the delivery of the Army Estimates in 1928, the transference of command of Aden from the Army to the Air Force resulted in the reduction of troops in Aden by 1,500, comprised of Indian and Colonial troops.<sup>326</sup> This economic efficiency can also be seen when one looks at the plans to subdue the external threat posed by Yemen. In 1928 the Army estimated that a division would be required to expel the Imam of Yemen's forces from the Protectorate at a cost of between six and ten million pounds, in the end, as described below, the RAF achieved this objective with the expenditure of a mere £8,500, this being only £5,000 over the typical expenditure on the air squadron in Aden.<sup>327</sup>

The mission objectives of the Royal Air Force in Aden were like those of Iraq, the RAF had essentially two key missions in Aden. The first was to protect against foreign powers; in Aden, the threat was from Yemen to the north of the Protectorate. Secondly the RAF, as in Iraq, was concerned with maintaining internal security, in the case of Aden this involved operations to quell banditry. Details of these missions and how they were conducted are included below, however in summary they closely resembled those in Iraq, where first the RAF dealt with the external threat, before turning their attention to internal security.

The terrain within Aden differed considerably from that of Iraq. In Iraq the east of the country had a certain level of infrastructure, however in Aden infrastructure was

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<sup>325</sup> Joel S. A. Hayward, *Air power, insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), p. 48

<sup>326</sup> HC Deb 08 March 1928 vol 214 cc1261-310, 1261

<sup>327</sup> 'Humanity of "Air Control"', *Irish Times*, 11 November 1933; Hoare, Samuel, 'the use of air power as illustrated by the recent operations in Arabia', 17 May 1928, TNA, CAB 24/195/10, p. 7

non-existent outside of the port city of Aden, furthermore the terrain was largely mountainous, while the Eastern Aden Protectorate was largely unadministered. This type of terrain was perfect for the utilisation of aircraft to control and secure territory that otherwise would have been inaccessible to traditional, ground based forces.<sup>328</sup>

Whereas Iraq relied on three component forces; the RAF, armored car companies, and local levies, in Aden, the RAF relied much more heavily on local levies:

The Government have further undertaken the duty of forming levies from some of the tribes in our Protectorate, and I hope that these levies will be employed to redress the grievances that have been suffered from the actions of the Imam of Sanaa.<sup>329</sup>

These local levies were the Aden Protectorate Levies (APL). To extend the capability and reach of the RAF a network of airstrips was built throughout the protectorate. This approach meant that the RAF could rely heavily on the intelligence network and look to nip trouble in the bud, before it evolved into more serious issues.<sup>330</sup> Thus the intelligence officers and political officers became an important component of the overall force structure in Aden.

### Operations

Beginning in June 1928 the RAF's initial task was to deal with the external threat posed by the Imam's forces from Yemen in the north. The Imam did not accept the territorial boundaries between Yemen and Aden and desired to subsume Aden into

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<sup>328</sup> Major Tony R. Mullis, *The limits of air control: the RAF experience in Aden, 1926-67* (Maxwell AFB, Alabama, Air Command & Staff College, unpublished thesis, 1997), p. 13

<sup>329</sup> HL Deb 15 March 1928 vol 70 cc493-500, 494-5

<sup>330</sup> Dr. Sebastian Ritchie, 'The RAF and Aden, 1928-1967', *Royal Air Force Historical Society Journal*, no. 48 (2010), p. 116

the Yemen. The focus of initial operations was the town of Dhala which Yemen forces had seized. RAF operations had three component parts. First the RAF flew ground support operations for local Protectorate tribes, secondly, they bombed targets within Yemen, and thirdly they conducted intelligence and reconnaissance flights in support of ground operations.<sup>331</sup> The results of the operations were swift and decisive. Quickly trade within Yemen's capital Sana had come to a standstill and most the population had fled.<sup>332</sup> As a result, the Imam's troops withdrew from Aden. The operation had been successfully prosecuted in under two months. Speaking of the operation against Yemen, the Permanent Undersecretary of the Air Ministry stated:

in two months, by air action undertaken by a single squadron (which flew 900 hours under arduous and exacting conditions) the Imam had been forced to evacuate territory of which he had been in wrongful but virtually uncontested occupation.<sup>333</sup>

Furthermore, a quote from a political officer working in Aden at the time gives some insight into the assistance provided by the RAF in operations, when he stated that:

There is no doubt that the lesson of the Yemeni defeat at Dhala, the reported concentration of frontier tribes, and the movement of British officers in continual contact with aircraft in all those districts most open to Zeidi attack, checked the rapacity of the Imam<sup>334</sup>

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<sup>331</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), pp 41-2

<sup>332</sup> Wing Commander A. J. C. Walters, 'Air control: past, present, future?', in *Air Power Review*, vol. 8, no. 4 (Winter, 2004), pp 1-19, p. 4

<sup>333</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 29

<sup>334</sup> Peter Dye, 'Royal Air Force Operations in South-West Arabia 1917-1967', in Joel S. A. Hayward (ed.), *Air power, insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), p. 49



This gives a clear indication that the focus of RAF operations in Aden was not simply to bomb with impunity, but rather to work closely with ground forces in a joint approach. Furthermore, the approach to operations was very like those conducted previously in Iraq, where a warning notice was issued to enable civilians to evacuate the target area.<sup>335</sup> This seeming close cooperation with ground forces did not prevent Trenchard from stating that:

I am continually telling all that twelve officers under a good squadron leader have ended a five year squabble in five weeks.<sup>336</sup>

By 1934 the British and the Yemenis had signed a treaty delineating the border between the Protectorate and Yemen, however this would lead to an increase in banditry as border tribes sought to raid against caravans using the trade routes that crossed the border.<sup>337</sup> While the threat from Yemeni forces did not go away overnight, the success of the operations meant that in the future the RAF would only have to deal with cross-border banditry, as opposed to any coordinated external threat. Thus, with the Yemeni problem resolved, the RAF could turn its attention to internal security.

A major difference between the operations in Aden, as opposed to Iraq, was the intensity of operations as demonstrated in the chart below. This difference meant that

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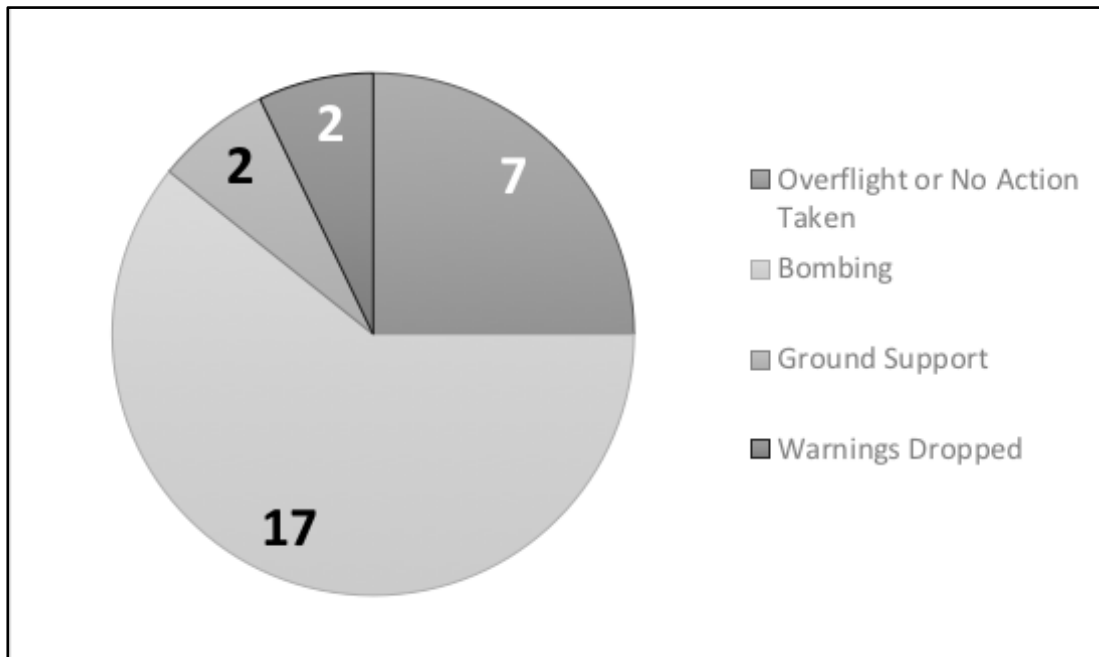
<sup>335</sup> HC Deb 02 July 1928 vol 219 cc950-2

<sup>336</sup> Trenchard papers, II/27/131, Trenchard to Mitchell, 16 April 1928, as quoted in, Derek J. P. Waldie, *Relations between the army and the Royal Air Force*, unpublished thesis (London University, 1980), p. 151

<sup>337</sup> Michael A. Longoria, *A historical view of air policing doctrine* (Thesis, 2012), p. 38

during the period 1919 to 1941, the RAF suffered only a single casualty during air operations in Aden.<sup>338</sup>

**Figure 11 - RAF operations by type in Aden, 1919-41**



**Source:** Data taken from; AIR/5/1300, Aden Operations Summary, 1919-1938; AIR/24/2, Air Staff, AHQ, Aden, Operations Record Book, 1940-1943; J. E. Peterson, *Defending Arabia*, (www.JEPeterson.net, 2000), p. 55

Furthermore, by the time that Air Control was instigated in Aden the RAF had benefited from years of experience in Iraq, thus the tenets of Air Control, as they were utilised in Aden, are by this stage very mature in their development. This maturity is seen in the predominant use of the concept of the inverted blockade, as opposed to mere prescription bombing. The inverted blockade relied on two key overriding principles, the concept of minimum force, and the primacy of political over military means.<sup>339</sup> This concept is borne out by the chart above, although

<sup>338</sup> 'Air power, the fallacies of "inhumanity" and rancour', RAF Hendon, B2244

<sup>339</sup> Michael A. Longoria, *A historical view of air policing doctrine* (Thesis, 2012), p. 40

bombing remained the most significant mission type of the RAF, the volume of those missions over the twenty-year period was minimal. Furthermore, Michael Longoria, has argued that this point can be further seen if one analyses the types of bombs used by the RAF in Aden during this period. In his study, he found that of 28,000 bombs dropped against the Queteibi Tribe between March and May 1934, 26,386, or 94% were in fact 5lb bomblets, an ordinance that caused a lot of noise, but did very little damage.<sup>340</sup> By way of confirmation, between 1919 and 1939, only 12 deaths were attributed to air attack within Yemen.<sup>341</sup>

Thus, although the RAF were an ever-present threat to recalcitrant tribes in Aden, it would appear in the main that the threat of their presence appeared to be enough to keep the peace. However, some have argued that the utilisation of the RAF in Aden hampered the development of Aden, which would have occurred if the British had taken a more traditional ground-centric approach to colonial administration. Thus, Hoffman argues that the use of Air Control meant that the government did not need to invest in internal infrastructure, which would have been necessary to enable the army to travel to the interior, thus leading to neglect of the region.<sup>342</sup> This was certainly a view expressed at the time. In 1920 the Army Commander in Chief of Iraq, General Haldane, argued that the introduction of Air Control would mean that the civil government would be less interested in road construction.<sup>343</sup> There is some merit in this argument, traditionally road infrastructure in colonial territory was

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<sup>340</sup> Michael A. Longoria, *A historical view of air policing doctrine* (Thesis, 2012), pp 41-2

<sup>341</sup> Peter Dye, 'Royal Air Force operations in South West Arabia 1917-1967', in Joel S. A. Hayward, *Air power; insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), pp.47-48.

<sup>342</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 25

<sup>343</sup> 'Question of the RAF taking over the defence of Mesopotamia', Haldane to WO, 28 May 1920, TNA, Air 20/526

developed to allow the army to reach deep into the territory to enforce obedience to the crown, if inhospitable terrain could be overflowed, why would the administration invest in something that would not have any military relevance. Furthermore, the interior of Aden was of little interest to the British, as the focus was on the Port City of Aden, the rest of the protectorate can be said to have provided no more than a security buffer zone to the port.

Along with operations in Aden, the RAF was engaged during this period in Palestine and Transjordan, and while Aden may have proved a similar challenge to that faced in Iraq, the challenge in these territories, especially Palestine, would be quite different.

### Palestine & Transjordan

The British mandate in the Middle East extended to Palestine and Transjordan in the wake of the First World War, however their coupling for administrative purposes belied their vast differences. Palestine came under British influence because of the Sykes-Picot agreement of 1916, which also allocated Iraq as a British mandate.

Transjordan on the other hand was somewhat of a no-man's land until officially recognised as a British protectorate after 1921. Transjordan from 1921 was ruled by the Emir Abdullah, with advice and financial support from Britain.<sup>344</sup> Because of the Balfour Declaration in 1917, it was the stated goal of the British Empire to establish a new Jewish homeland within Palestine, this was in stark contrast to the increasing support for Arab nationalism, something that the British had encouraged during the

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<sup>344</sup> HL Deb 07 May 1924 vol 57 cc285-8, 287

First World War.<sup>345</sup> This situation would lead to conflict between the Arab and increasingly populous Jewish sections of Palestinian society, furthermore it would cause conflict between the Arab population and their British rulers.

Palestine was politically and culturally diverse, with a predominantly Arab population, it was a populous and urban country, whereas Transjordan was very much a rural country, predominantly a tribal society. In effect Transjordan would be dealt with by the British very differently than Palestine, whereas Palestine would be administered and secured in full by the British, Transjordan would only be nominally under British control. These differences in administrative approach and societal organisation would lead to very different requirements for military control and security. This section will focus on RAF control of Palestine, as Transjordan was very much controlled in the manner of Aden and Iraq, thus a focus on Air Control in Transjordan would add little to the analysis.

While Transjordan represented a similar problem to that of Iraq, and would seem to have been well-suited to the concept of Air Control, the RAF were wary of the requirements to secure Palestine. Speaking in 1929, Sir Hugh Trenchard made this clear when he stated:

The Air Staff [...] have never contended that air action is an instrument well suited to intervene in aid of the civil power in towns. An example may be derived from Palestine and Transjordan. In Transjordan, a

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<sup>345</sup> Dr Peter Shambrook, 'Palestine and Britain 1917-1948: competing policies, creative commemoration', talk given at the *The Balfour Project* conference in Southwark Cathedral on 5th November 2016, available at <http://www.balfourproject.org/palestine-and-britain-1917-1948-competing-policies-creative-commemoration/> (accessed 23 September 2017); Group Captain Peter W. Gray, 'The myths of Air Control and the realities of imperial policing' in *Aerospace Power Journal*, (Fall, 2001), np

country of scattered populations and poor communications, conditions are well suited for Air Control; that is to say, the primary arm on which authority and security rests is air power, assisted by armoured cars and irregular forces. In Palestine, on the other hand, the focal points of unrest are found in more closely compact centres of population.<sup>346</sup>

This opinion of the use of the Royal Air Force in Palestine is mirrored in the debates within the House of Commons in relation to budgetary estimates for Palestine. In 1930, a supplementary sum of 140,000 pounds was proposed for Palestine, of which 63,000 pounds was for the Royal Air Force, in response to this Major Ross, Conservative MP for Londonderry, questioned:

How can an aerodrome have any material effect upon a disturbed and confused crowd which is rioting in the streets of a city?<sup>347</sup>

This opinion of the utility of the Air Force in urban environments is mirrored in RAF doctrine in the inter-war period, indeed the RAF stated that the ideal use of Air Control is in countries that combined inaccessibility, with a population ‘organised on a loose tribal basis’.<sup>348</sup> By 1940 it was the unequivocal opinion of RAF official doctrine that Air Control was not a concept that could be applied in a predominantly urban setting:

Aircraft can seldom be effectively used in support of civil police authorities in thickly and diversely populated areas. [...] Under such circumstances the support of air forces is best confined to reconnaissance, to the dropping of warning notes, to the conveyance of police authorities, and to other roles not entailing the use of the

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<sup>346</sup> Hugh Trenchard, ‘The fuller employment of air power in Imperial defence’, November 1929, TNA, CAB/24/207, p. 129

<sup>347</sup> HC Deb 24 February 1930 vol 235 cc1981-2007, 1989

<sup>348</sup> ‘Air Staff memorandum, No. 46, notes on air control of undeveloped countries’, 1930, TNA, WO/33/3216, p. 3

offensive armament of aircraft.<sup>349</sup>

Thus, within Palestine we had a territory that was under RAF command, however a territory that the RAF stated should not be subject to the principles of Air Control.

The reasons for this are quite straight forward. At the Cairo conference the control of Palestine was foisted on the RAF because of their interest in the application of Air Control in neighbouring Transjordan. Indeed, in April 1930 Samuel Hoare stated that:

The Air Force, so far as I know, never wished to be responsible for duties that can be best carried out by civil police. It was, however, found in practice to be difficult to separate the defence of the Transjordan frontier, essentially an Air Force responsibility, from the garrison problem in Palestine itself.<sup>350</sup>

After the Cairo conference in 1921, along with Iraq, it was decided that the RAF should take over military responsibility for the territories of Palestine and Transjordan. Once again economic efficiency was a key driver; prior to the RAF taking command responsibility for Palestine, the garrisoning of this colonial territory cost the exchequer £3.5m per annum.<sup>351</sup> By 1929 this figure had been reduced by 90%.<sup>352</sup> By 1925 the British Government felt that Palestine was settled enough to withdraw the last remaining garrison troops, thus from 1925 to 1929, the only British military personnel in Palestine and Transjordan were the RAF. For most of this period the RAF forces in the region were stationed in Transjordan, and not Palestine.

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<sup>349</sup> 'Royal Air Force war manual, AP1300', 1940, RAF Hendon, 017708, chapter XIII, numbered point 64

<sup>350</sup> 'Letters to the editor', *The Times*, 17 Apr 1930; pg. 15

<sup>351</sup> Hugh Trenchard, 'The fuller employment of air power in Imperial defence', November 1929, TNA, CAB/24/207, p. 128

<sup>352</sup> *Ibid.*, p. 127

This was the situation faced by the RAF when trouble first erupted in Palestine during 1929.

### Operations

Trouble first erupted in Jerusalem in August 1929, the initial trouble spot was the holy site of the wailing wall.<sup>353</sup> At that time, the only security forces available to the RAF commander, Group Captain Playfair, was a single RAF squadron, one armoured car company, and the Transjordan Frontier Force (TFF). Knowing that his small force was inadequate to quell the spreading disturbances, Playfair requested additional forces in the shape of two infantry battalions and a second RAF squadron; naval aircraft and infantry also contributed.<sup>354</sup> The two infantry battalions and some ancillary troops were dispatched from Egypt (see photo 8, below).<sup>355</sup>

### **Photo 8 - British reinforcements boarding a Vickers Victoria, ND**



**Source:** Sebastian Ritchie, *The RAF, Small Wars and Insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 59

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<sup>353</sup> James Barker, 'Policing Palestine', in *History Today* (June, 2008), p. 53

<sup>354</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 55

<sup>355</sup> HC Deb 29 October 1929 vol 231 c5



By September disturbances had spread throughout Palestine, Playfair used his ground forces to secure Jerusalem, while using the RAF squadrons to secure outlying areas. Due to the scarcity of ground troops available to the commander, one of the key tasks of the RAF was in the reconnaissance role, in this task the RAF could substantiate any reports of disturbances before dispatching elements of the limited ground force. The RAF also provided convoy protection and logistics support. The challenge now facing the commander was an insurmountable one with the forces he had available. In effect, he was facing a country wide sectarian conflict, one in which police forces, rather than the military, were better suited to quell the disturbances. As Hugh Trenchard stated in his final paper as Chief of the Air Staff before his retirement in 1929:

Insurance against racial or political upheavals in such conditions is to be found neither in aircraft nor artillery, nor in infantry battalions, but in police and gendarmerie forces<sup>356</sup>

The disturbances in Palestine would rumble on for three more years, albeit never really reaching levels of a full-scale revolt. The key learnings that the RAF and the British Government took from these experiences was that intelligence was a key factor, and that the Palestinian police force was wholly inefficient, and in need of total reorganisation.<sup>357</sup> When trouble resurfaced in 1936 it would be fundamentally different from the earlier troubles; in 1936, the ire of the Arab population was directed not at the ever-increasing Jewish population, but at the British authorities.

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<sup>356</sup> Hugh Trenchard, 'The fuller employment of air power in Imperial defence', November 1929, TNA, CAB/24/207, p. 129

<sup>357</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 57

When violence once again broke out in 1936 the RAF were severely constrained in relation to the rules of engagement (ROE) they operated under. As Dr Mark Lorell has argued constraints placed on operations have a significant effect on airpower operations in small wars:

The effectiveness of airpower in peripheral conflicts is inevitably reduced by political, economic, and diplomatic constraints that typify such conflicts, including restrictive rules of engagement, politically controlled targeting, enemy sanctuaries, the requirement for reducing pilot and aircraft losses to the absolute minimum.<sup>358</sup>

Initially they were unable to use bombs and could only use their machine guns in certain circumstances. This was more than likely as a result of the perceived failure of the RAF to successfully react to the troubles of 1929. By June however, with the conditions worsening, the ROE was relaxed to a certain extent, however the RAF were only permitted to use 20lb bombs, could not bomb within 500 yards of any kind of building, and could only use bombs where it was deemed more effective than machine gun fire. With the RAF now operating against armed groups in outlying regions, the necessity was for close cooperation between air and ground forces. This requirement saw the creation of the XX system, in effect this was what would be known today as a quick reaction force (QRF). An XX call from a ground unit or convoy would represent an immediate call for assistance and air forces would scramble to respond. Once overhead, air forces would receive further instructions

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<sup>358</sup> Dr Mark Lorell, 'Lessons from the French experience in low intensity conflicts', in Group Captain Andrew Vallance (ed.), *Air power, collected essays on doctrine* (London, 1990), p. 89

from the ground unit and act accordingly. In this scenario air forces would find and fix the enemy, and the ground forces would then engage and mop up.<sup>359</sup>

**Photo 9 - RAF plane dropping message, ND, between 1934-9**



**Source:** Library of Congress, Matson Photograph collection, LC-M33-9930, available at <http://www.loc.gov/pictures/item/mpc2010004273/PP/>, accessed 07 August 2015

As the British Government debated the approach to securing Palestine it became obvious that there was the requirement for increasing the ground force component, this was subsequently done, and due to the scale of ground forces then deployed in Palestine it was decided that an Army officer should take over command from the

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<sup>359</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), pp 64-8

RAF, this was duly instigated in September 1936.<sup>360</sup> Ground force levels rose and fell over the next two years, however with the rumblings of war in Europe from 1938, the ground force commitment to Palestine was seen as being too expensive, thus in 1938 the Government acted:

further reinforcements have been despatched to Palestine to bring the total strength of the garrison up to 18 battalions of infantry, two cavalry regiments, a battery of howitzers, and some armoured cars, with ancillary troops.<sup>361</sup>

It was expected that this surge would provide the manpower to bring about a resolution in Palestine in a short period of time, this was achieved by the end of 1938.

As well as the XX system described earlier, there was also a further innovation in ground air cooperation instigated in Palestine. This was the concept of the air cordon. This was used where ground forces intended to search a town or settlement, essentially aircraft blockaded the position until ground forces could arrive:

As soon as the cordon is established, the land forces, without any necessity for taking precautions to conceal their movements and without the fatigue and delay attendant upon involved encircling tactics, are at liberty to proceed to the search area rapidly and by the most convenient means [...] Pamphlets are dropped on the area warning the inhabitants to remain within that area on pain of being shot from the air if they attempt to emerge<sup>362</sup>

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<sup>360</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 72

<sup>361</sup> HC Deb 01 November 1938 vol 340 cc39-42, 40

<sup>362</sup> 'Royal Air Force war manual, AP1300', 1940, RAF Hendon, 017708, chpt XIII, numbered point 58

In the main RAF operations in Palestine did not conform to the concept of Air Control as seen in Iraq and Aden. Although the RAF held command responsibility until 1936, in effect the RAF operated in support of ground forces. However, the impact of RAF operations in Palestine was marked. Speaking after the operations in 1936, General John Dill, previously Commandant of the Staff College and Director of Military Operations and Intelligence, who had taken command of all military forces in Palestine in September 1936, wrote a lessons learned document, within it he stated:

The value of the Air Force, when arrangements can be made for it to be at instant call, has been most marked, [...] Rebels hold the Air Force in such respect that on occasions it had the effect of driving them to cover or dispersing them before the troops could get in touch with them.<sup>363</sup>

When it came to striking at the enemy in the hills it was usually upon the bombs and guns of his aircraft that the commander would rely for a concentration of force at the decisive point. The fact that in some months more than 50% of enemy casualties resulted from air action bears witness to their effect. There were few engagements in which aircraft and troops did not work together in very close co-operation - so close in fact that 'combined action' is probably a better description. Practically every case of a successful attack on armed rebels resulted from the combined efforts of air and land forces; [Air] provided the commander with his principal weapon of offence. Local conditions of ground and policy combined to make it an especially effective weapon in Palestine.<sup>364</sup>

Although RAF command of Palestine may not have resulted in a successful application of the RAF as the primary arm during the periods of unrest. What it did

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<sup>363</sup> 'Preliminary notes on the lessons of the Palestine rebellion', February 1937, TNA, WO 191/75, p. 1

<sup>364</sup> 'Military lessons of the Arab rebellion in Palestine, 1936', February 1938, TNA, WO 191/70, p. 104

achieve was the development of a sophisticated air ground cooperation scheme with the Army. This begs the question why a few short years later, the British forces fighting in Europe, did not possess these skills. Similar questions can be asked of the bombing techniques developed during this period in the Middle East. Throughout this period, the RAF developed techniques specifically for the situations they faced on operations in the Middle East. Due to a lack of evidence of these techniques in subsequent RAF conventional doctrine it can be assumed that these techniques were not deemed to be appropriate to a modern conventional war in Europe, and so in the main this expertise remained with the units engaged in these operations, and to a lesser extent they were shared as lessons learned in staff colleges in the UK. This is surprising when one considers that some of the key senior officers withing the RAF in the 1940s had been heavily involved in colonial operations, men like Arthur Harris and Charles Portal. However predominantly the focus of RAF tactics developed in the UK were based on the principle of strategic bombing, this was the role the RAF deemed to be its primary responsibility in any conventional conflict.<sup>365</sup>

Another theatre in which the RAF played a significant, albeit secondary role, was in the North-West Frontier in India.

### NW Frontier

The North-West Frontier of India is situated at the border between India and Afghanistan. For many years, it had been an immensely troubled spot for the British

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<sup>365</sup> 'Royal Air Force war manual, AP1300', 1940, RAF Hendon, 017708

administration of India and was significant because it was the buffer zone between Russia and India, any potential aggression from Russia would have to pass through the North-West Frontier. Geographically the North-West Frontier was one of the harshest and most difficult terrains in which the British colonial administration had to operate. It was mountainous and consisted of a series of high sided valleys in which the indigenous tribes lived. For many years, the administration in India struggled to come up with a coherent strategy for securing the region, and see-sawed between occupation on the one hand, and a light touch approach on the other, neither seemed to offer a satisfactory solution.

Even prior to the operation in Somaliland, described earlier, the RAF had in fact been involved in active operations on the North-West Frontier. When the Third Afghan War broke out in 1919, it was RAF aircraft (BE2Cs) that initially provided decisive support to British ground troops, furthermore the bombing of Kabul and Jalalabad by a single Handley Page V/1500 led to the demoralisation of the Emir, and ultimately his agreement to an armistice in June 1919.<sup>366</sup> This long-range bombing mission was one of the first of its kind in the world. The crew undertook a six-hour round trip to bomb Kabul. The bombing ‘achieved good results’, this was coupled with the fact that, in all probability, many of the people of Kabul ‘could never have seen an aeroplane before’.<sup>367</sup> This initial impact on operations should have led to the solidification of the RAF as a key component of the military apparatus in the North-West Frontier, however the position of the RAF in India was

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<sup>366</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 4; Kevin Baker, *War in Afghanistan, a short history of 80 wars and conflicts in Afghanistan and the Northwest Frontier, 1839-2011* (New South Wales, 2011), p. 134

<sup>367</sup> Norman L.R. Franks, *First in the Indian skies* (Lincoln, UK, 1981), p. 21

very different to the position of the service in other British colonial territories.

Andrew Walters argues that the:

the conservatively-natured Indian Armies were slow to recognise the conceptual shift required to fully exploit air power. This entrenchment was reinforced by inter-Service rivalry and the threat of aircraft replacing land forces with a concomitant loss of political standing. The enduring high-level internecine conflict resulted in the squandering of both resources and the opportunity to test independent, 'strategic' air power theory prior to the Second World War. Its legacy impacted on Army-RAF relations into the War.<sup>368</sup>

Whereas the successes in Somaliland had led to the installation of the RAF as the primary military arm in Iraq, and subsequently Aden, Transjordan and Palestine, in India this was not to be the case. The army held all the service power in India, and while they appreciated and understood the impact that air operations could have in supporting their objectives, they would never countenance the prospect of the RAF assuming command control. Thus, the strategy of Air Control, and air substitution, would never be implemented in India. In attempting to increase the power of the RAF in India, Hugh Trenchard faced a number of challenges; firstly the Army controlled military expenditure in India, and secondly, Trenchard's ally in the Colonial Office, Winston Churchill, who had been so instrumental in the development of the RAF position in the Middle-East, had no remit in the administration of India, it being administered by the India Office.<sup>369</sup> Although the use of the RAF in support operations was to increase steadily throughout the interwar years, by the late 1930s the Chief of the Air Staff, Cyril Newall, still

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<sup>368</sup> Andrew John Charles Walters, *Inter-war, inter-service friction on the North-West Frontier of India and its impact on the development and application of Royal Air Force doctrine* (PhD thesis, University of Birmingham, 2017), p. ii

<sup>369</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 21



lamented the fact that it would be impossible for the air force in India to modernise due to the fact that the army accounted for 93% of all military expenditure in India.<sup>370</sup>

Not only was the inter-service power dynamic markedly different in India than what the RAF had experienced in the Middle East, there was also several significant differences in geography, politics and scale, all of which combined to make the RAF experience in India, very different to the Middle East. An interesting insight into the potential use of the RAF, or lack thereof, is given in a series of communications between Whitehall and the Government of India in 1923, related to the policy to be used in Waziristan. Initially in a communication dated 23 January the potential approaches are outlined; Whitehall favoured a policy of occupation by ground forces, whereas the Government of India stated that this approach was not achievable due to budgetary constraints. Ultimately a compromise was reached, however the compromise was not to use the RAF in some form of substitution, but rather to save expenditure on troops (using irregular as opposed to regular troops) and the road building project. The only mention of the RAF in this initial telegram is to state that further reductions was a 'question being left open for further consideration in the light of developments of aerial warfare'.<sup>371</sup>

In a follow up telegram from India, its approach to Waziristan had changed, this was based on a recommendation from John Salmond to increase RAF forces and consequently reduce ground troops. This recommendation was because of a visit to

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<sup>370</sup> as quoted in David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 49

<sup>371</sup> 'North-West Frontier policy', 23 January 1923, TNA, CAB 24/158/42, p. 1

India by John Salmond the previous summer in which he was tasked with analysing the state of RAF forces in that region. Salmond's opinion at the time was that the RAF were vastly under strength, with poor equipment and resultant serviceability issues. The document states that since their (the India Office) initial recommendations on Waziristan that they have since 'accepted Salmond's scheme for increase in Royal Air Force in India, with a consequential acceptance of a reduction in the Field Force'.<sup>372</sup> The resultant response from London is unashamedly aghast at this about-turn, stating that this course of events has caused 'considerable uneasiness' in London.<sup>373</sup> So did the Indian Government in fact embrace John Salmond's recommendations? No, it would appear through a reading of these documents that in fact they had little intention to implement Salmond's recommendations, however the whole episode would appear to have been used as political leverage to highlight the budgetary challenges faced with the security and administration of the North-West Frontier. As per Cyril Newall's opinion above, by the late 1930s the RAF was still undermanned, and under-equipped.

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<sup>372</sup> 'North-West Frontier policy', 23 January 1923, TNA, CAB 24/158/42, p. 3

<sup>373</sup> *Ibid.*, p. 4

### **Photo 10 - Westland Wapiti Mark IIA aircraft in India, ND, early 1930s**

Westland Wapiti Mark IIA aircraft of 'X' Flight, No. 31 Squadron, RAF, flying in line abreast formation over the North-West Frontier of India



**Source:** Imperial War Museum, HU 70781

#### Operations

Army support operations were by and far the most common missions carried out by the RAF in India in the interwar years, and the Army placed great faith in their contribution. Typically, operations would revolve around a traditional approach, whereby the Army would use punitive columns to temporarily occupy territory, or engage a concentration of recalcitrant tribesmen. The RAF would be used extensively to support these columns, and in an offensive role to attack concentrations of the enemy. Speaking in 1936 about operations in North Waziristan, the Secretary of State for India states that ‘the Royal Air Force co-operated most successfully with the columns’.<sup>374</sup> Even though the approach to operations was traditional, we see that the Army had begun to use the RAF in ways that would be familiar to those with knowledge of the principles of Air Control. Speaking about the

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<sup>374</sup> 'Situation in North Waziristan on the North-West Frontier of India', 02 December 1936, TNA, CAB 24/265/50, p. 2

approach to these same operations in North Waziristan, the Secretary of State confirms that

‘this discretion [to use the RAF] will extend to the bombing of villages from which contingents are clearly proved to have been sent. In this event, the usual warning to the inhabitants to evacuate the villages will be given’<sup>375</sup>

The familiar Air Control refrains can again be evidenced in a memo from the Secretary of State about operations against the Upper Mohmands in 1935, he states on this occasion that the ‘proposal is to communicate to tribes that the air action being taken against them would be ceased if they acquiesced’.<sup>376</sup>

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<sup>375</sup> 'Situation in North Waziristan on the North-West Frontier of India', 02 December 1936, TNA, CAB 24/265/50, p. 3

<sup>376</sup> 'Situation on the North-West Frontier of India', 17 September 1935, TNA, CAB 24/256/33, p. 1

**Photo 11 – Bombs exploding on the village of Kulala, ND, possibly 1932**

Vertical aerial photograph taken by a Type F.\* aerial camera, showing bombs exploding on the village of Kulala during a raid by 'A' Flight, No. 60 Squadron RAF

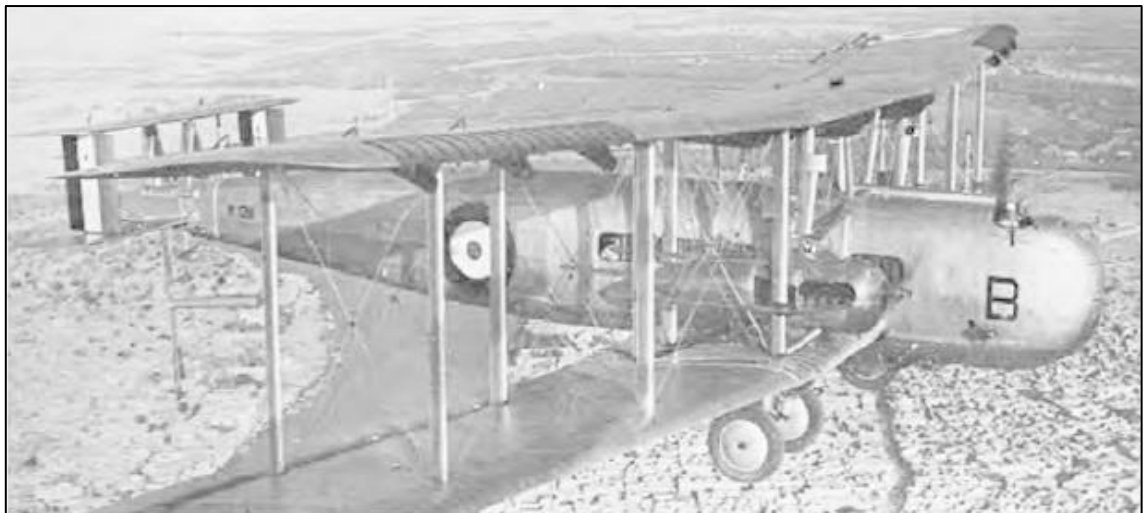


**Source:** Imperial War Museum, HU 91196

One of the significant successes achieved by the RAF during their time in the North-West Frontier related to the first large scale airlift ever performed. In 1929, a civil war broke out in Afghanistan and it was feared that the British inhabitants in Kabul would be negatively targeted. In response, the RAF organised an air lift involving eight Vickers Victoria transport aircraft (see photo 12) of 70 Squadron. These aircraft successfully air lifted 586 civilians from Kabul to India, and thus prevented a

potential disaster.<sup>377</sup> The initial airlift, performed on the 24<sup>th</sup> December, would successfully transport a party consisting of ‘four English women, three young English children, four Indian women, four Indian maidservants, and five young children’.<sup>378</sup> These twenty people would be the first in an operation that lasted two months, and became the first ‘major airlift of officials and civilians from one country to another’<sup>379</sup>.

**Photo 12 - RAF Vickers Victoria transport aircraft, ND**



**Source:** Kevin Baker, *War in Afghanistan, A Short History of 80 Wars and Conflicts in Afghanistan and the Northwest Frontier, 1839-2011* (New South Wales, 2011), p. 154

Another role that the RAF played in the North-West Frontier was as a key component of the intelligence infrastructure. As early as 1923 the Chief Commissioner, North-West Frontier, highlighted this important role when he stated that 'by means of the aeroplane a Political Officer can obtain a far more intimate

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<sup>377</sup> Kevin Baker, *War in Afghanistan, a short history of 80 wars and conflicts in Afghanistan and the Northwest Frontier, 1839-2011* (New South Wales, 2011), pp 153-4

<sup>378</sup> Andrew Roe, 'Evacuation by air', in Brian Cloughley, Lester W. Grau, Andrew Roe, *From fabric wings to supersonic fighters and drones* (Solihull, UK, 2015), p. 101

<sup>379</sup> *Ibid.*, p. 94

knowledge of his charge that was possible in the past'.<sup>380</sup> However the ability of the RAF to help in this 'intimate' approach to liaison with the tribes was a contentious issue. Viscount Plummer, speaking during a House of Lords debate in April 1930 stated that 'the Army provides a closer link to the populations that they govern and thus allow for an impression that British rule is characterised by integrity, justice and humanity'.<sup>381</sup> This opinion was given in rebuttal to the view that Air Control could be used in the North-West Frontier, what Viscount Plummer possibly did not appreciate was that the RAF could be used as a key enabler of the existing system, and that its role in an Air Control approach was not simply about proscription bombing. Indeed, there was significant cooperation between the Army and Air Force in India, as Walters stated:

Over time, local Frontier air tactics developed, such as punitive proscription, which the Air Ministry refused to recognise. In the late 1930s, the mutual respect and willingness to compromise for in-theatre purposes by commanders such as Auchinleck, Ludlow-Hewitt, Peck and Slessor resulted in the Combined Frontier Manual. Despite this in-theatre accord, the Manual took three years to publish due to high-level inter-Service discord.<sup>382</sup>

### ***Part III – The Impact of Air Control***

As Peter Gray has argued, 'it is important to remember that British operations during the interwar period cannot all be lumped into the same generic title of 'imperial policing', the use of air power in Iraq, Palestine and India were very different from

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<sup>380</sup> 'Air power, the fallacies of "inhumanity" and rancour"', RAF Hendon, B2244

<sup>381</sup> 'Extension of air control, debate in House of Lords', April 9th 1930, also letters from 'Times' referring to the debate, RAF Hendon, AC73/23/33, point 37-8

<sup>382</sup> Andrew John Charles Walters, *Inter-war, inter-service friction on the North-West Frontier of India and its impact on the development and application of Royal Air Force doctrine* (PhD thesis, University of Nirmingham, 2017), p. 390

each other. The issues in these colonial frontiers were different and the way in which air power was used was also different'.<sup>383</sup> As we have seen through an analysis of RAF activity in the interwar period, each territory in which they operated required different solutions, these solutions needing to be formed to meet the particular needs of that territory. By way of summary the table below highlights these differences in approach.

**Table 2 - RAF approach to colonial operations in the inter war period**

<b>Theatre</b>	<b>RAF Command Responsibility</b>	<b>Air Control Implemented</b>	<b>Air Substitution Implemented</b>	<b>Army Support Operations</b>
<b>Iraq</b>	✓	✓	✓	
<b>British Somaliland</b>	✓		✓	✓
<b>Aden</b>	✓	✓	✓	
<b>Palestine</b>	✓		✓	✓
<b>Transjordan</b>	✓	✓	✓	
<b>North-West Frontier</b>				✓

As can be seen in the table above, in most theatres where the RAF held command responsibility, with the exceptions bring in British Somalia and Palestine, the RAF instigated a full system of Air Control and air substitution. In the theatres where the

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<sup>383</sup> Group Captain Peter W. Gray, 'The myths of Air Control and the realities of imperial policing', *Aerospace Power Journal* (Fall, 2001)



Army still held command responsibility RAF operations can best be described as army support operations.

This chapter will now analyse the use of the RAF in colonial operations throughout this period. Specifically, it will analyse whether these operations represented an application of doctrinal principles, showed evolution and innovation in its application and ultimately, the impact of operations in the different theatres.

### Application of Doctrinal Principles

Neville Parton has argued that the formative years of RAF doctrine show an emphasis on the use of airpower in small wars. This is not that surprising when you consider the period through which the RAF was living. It required an independent role, and Air Control would seem to offer that role, furthermore small wars represented the majority of operations that the RAF was involved in within this early period. Parton argues that when viewed holistically:

[...] the overall analysis of *all* of the doctrine material produced during this period demonstrates quite clearly where the Air Force's centre of gravity lay, in terms of the area where most effort was placed in developing doctrine at the tactical, operational, and strategic levels—which was, perhaps surprisingly given current understanding of this subject, that of air control or air policing. As Trenchard was attempting to keep the Army and Navy plans for dismemberment from becoming reality, what he needed was evidence of what the service could achieve *now*, and that was provided by the success of the RAF in areas such as Somaliland, Iraq, and the North West Frontier.<sup>384</sup>

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<sup>384</sup> Neville Parton, 'The development of early RAF doctrine', in *The Journal of Military History*, vol. 72, no. 4 (October 2008), pp 1155-1178, p. 1176

Throughout the offensive operations in Iraq, outlined above, we see the thread of the original doctrinal guidance, first espoused in CD22 Operations. The importance of morale and a vigorous pursuit of the offensive once engaged, are central themes of RAF doctrine of this time, and can be seen in relation to the practical application of offensive aerial operations in Iraq.

RAF operations in Aden and Transjordan seemed to follow the doctrinal instruction laid out in CD22 Operations (1922), AP1300 (1928) and Air Staff Memorandum No. 46 (1930), particularly as it related to colonial operations. British Somaliland was a precursor to Air Control, and so for that operation there was no doctrinal point of reference. In Palestine and the North-West Frontier, Air Control was never implemented, and RAF doctrine related to combined operations was relatively immature at this stage.

The initial doctrinal tenets were vague and lacking in any operational detail. This is not surprising, as Neville Parton argues, ‘doctrine can be regarded, at least to some extent, as simply a means of codifying lessons that have been learned from previous experience to inform future action’.<sup>385</sup> Thus with the publication of *CD22* the RAF had a limited amount of experience by this stage to draw upon, particularly in relation to operations in small wars. By 1924 and the publication of *Air Staff Memorandum 16*, we already see how operations within Iraq in the early 1920s were starting to filter through the RAF and drive doctrinal change. One of the considerable changes in RAF guidance on operations is mirrored in the approach to

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<sup>385</sup> Neville Parton, ‘Air power and insurgency: early RAF doctrine’, in Joel S. A. Hayward (ed.), *Air power, insurgency and the ‘war on terror’* (Cranwell, United Kingdom, 2009), p. 31

the aerial blockade. This change is very apparent with the publication of *AP1300* in 1928. The concept of minimum force, which would guide British counterinsurgency operations into the future, had come to the fore. Undoubtedly throughout the interwar years proscription bombing was used, however it would appear after the mid-1920s that the favoured form of power demonstration was the aerial blockade, an approach that epitomised the concept of minimum force.

Another important doctrinal transformation is the increasing importance of intelligence. From the outset of Air Control in 1922, the RAF had been conscious of the requirement for local intelligence, by the mid-1920s a network of Special Service Officers (SSOs) was established throughout Iraq to deliver just that. As Richard Newton has noted, ‘the concept of RAF SSOs on the ground had not existed prior to the air control scheme’.<sup>386</sup> Work by RAF intelligence officers such as John Glubb had reinforced the notion that the ideal settlement of disputes was through political rather than military means. This was confirmed with the publication of *Air Staff Memorandum 46* in 1930, with the guidance that, ‘the proper employment of air power requires the most intimate co-operation between the Air Force Commander and the political authority’.<sup>387</sup> Ironically, a result of the deployment of SSOs was that they could provide the RAF with beneficial targeting information, as Priya Satia argues:

Political officers’ untrammelled mobility in turn ensured that the RAF received good intelligence and could “[pick] out the right villages and

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<sup>386</sup> Lieutenant Colonel (ret’d) Richard Newton, ‘The RAF’s special force before the Special Duties Squadrons’ in *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 94-108, p. 97

<sup>387</sup> ‘Air Staff memorandum, No. 46, notes on air control of undeveloped countries’, 1930, TNA, WO/33/3216, p. 5

to hit [*sic*] when trouble comes.” By this ironic logic, the RAF’s successful persecution of a village testified to their *intimacy* with people on the ground, without which they would not have been able to strike it accurately.<sup>388</sup>

The breadth and depth of the SSO’s impact on Air Control cannot be underestimated, as Richard Newton has argued they were pivotal to its success:

The RAF SSOs, usually alone in remote, uncertain, and politically-sensitive regions, orchestrated the inter-departmental activities (military, law enforcement, and civil) necessary to maintain the peace in their assigned regions. According to modern definitions, these airmen were Special Forces—uniquely trained, conducting unorthodox missions (especially for airmen), in high-risk areas to achieve theatre or strategic objectives<sup>389</sup>

This represents key evidence of the RAF as a learning organisation during this period. At the outset of operations the SSO’s did not exist within the RAF, however in a very short period of time they became an integral part of operations, with the appropriate levels of organisation and training.

When discussing the merit of Air Control, it is important to consider what the alternative was. Traditionally operations in a small wars environment were conducted by infantry forces, classically deployed in garrisons and strong points throughout the area to be controlled. These forces would then call upon the infantry column to extend control or to undertake a specific mission. Although the infantry column, or punitive column, was effective, it had several significant issues. In the first instance, it was slow to react, requiring careful planning, logistics and

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<sup>388</sup> Priya Satia, ‘The defense of inhumanity: air control and the British idea of Arabia’, in *The American Historical Review*, vol. 111, no. 1 (February, 2006), pp. 16-51, 46

<sup>389</sup> Lieutenant Colonel (ret’d) Richard Newton, ‘The RAF’s special force before the Special Duties Squadrons’ in *Air Power Review*, vol. 21, no. 1 (Spring 2018), pp 94-108, p. 104

organisation. Secondly it invariably resulted in considerable casualties to the column, not only from the enemy, but also because of the harsh climate in which it needed to operate, typically this resulted in outbreaks of sunstroke and dysentery.<sup>390</sup> Thirdly, it was a blunt force implement; typically, when the Army had instigated an operation of this nature, it would ensure that once the column engaged the enemy, or reached the trouble spot, that it would engage with a vigour and level of violence that was required to justify its mission. Finally, the cost of mounting operations of this nature were high, something that in the post war period was hard to sustain.<sup>391</sup>

Air Control offered a way in which control could be maintained, while negating some of these issues. Aircraft could be deployed quickly over great distances, utilising a centralised structure with the ability to leverage forward airstrips. Air force casualties were minimal, indeed as Towle argues, ‘by 1932 the RAF had only had fourteen pilots killed and eighty-four wounded in air policing operations’.<sup>392</sup> Also the level of offensive operations could more easily be controlled, thus allowing the air force commander to ratchet up or down the level of violence, depending on the situation, thus missions could vary from shows of force to offensive operations. Air Control could also be achieved considerably cheaper than mounting a ground expedition, as has been demonstrated earlier. Finally, geography played a significant role in the success of Air Control as an alternative to the traditional approach, as Malcolm Smith has noted, ‘the natural shelter of deserts and mountains, which had

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<sup>390</sup> Neil Faulkner, *Lawrence of Arabia's war* (London, 2016)

<sup>391</sup> David J. Dean, *The air force role in low-intensity conflict* (Alabama, 1986), p. 22

<sup>392</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 19

made the operations of the Army punitive column so costly and drawn-out, no longer provided safety for rebels'.<sup>393</sup>

Not only did Air Control impact on the way in which imperial control could be maintained, operating within these kinds of environments also had an impact on the RAF. This impact, as with all military conflicts, led to innovation and evolution, both in the practical application of airpower, but also in the technology developed to meet the requirements of performing these types of actions.

### Evolution and Innovation

Throughout this period, we do see an evolution in the RAF's approach to operations and to certain challenges that they faced. The primary role played by the RAF in planning for the operations in British Somaliland is a case in point, furthermore, when faced with the challenges of Palestine, the RAF responded with several innovative approaches. In Palestine, we see the use of the XX system, as described earlier, something that we could draw a direct correlation with to today's QRF (quick reaction force). Also in Palestine, we see the air cordon approach, which effectively cordoned off an area to allow for ground forces to engage and search areas of interest.

One of the arguments posited about Air Control is that due to the nature of the operations performed, that Air Control led to a malaise within the RAF in relation to

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<sup>393</sup> Malcolm Smith, *British air strategy between the wars* (Oxford, 1984), p. 29

tactics, and in relation to technological development.<sup>394</sup> Many have cited that Air Control was the cause of the RAF's unpreparedness for a modern conventional war, the result of which was the poor performance in the opening stages of the Second World War.<sup>395</sup> Furthermore, there is a school of thought that argues that the lack of navigational and bombing precision was because these attributes were not required, or were neglected, in a small wars environment, and thus their development was hampered in the interwar years.<sup>396</sup> This neglect would lead to the poor bombing performance of the RAF in the first three years of the war in Europe. However, this argument is not wholly sound. Regardless of the lack of focus on navigational and bombing precision within the Air Control context, it was also neglected by the RAF in a wider institutional sense, thus to blame Air Control for the failings of the RAF to investigate these areas is misleading.<sup>397</sup> Within the context of Air Control, the RAF did develop some innovative approaches to operations, while also developing technology that would assist them in performing their duties within a small wars environment. The charge against the RAF may more properly be that they failed to implement the lessons learned from Air Control, some of which could easily have been adapted for use in a conventional war environment.

One example of the development of innovative approaches to the use of air power during the Air Control years was the development of casualty evacuation operations,

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<sup>394</sup> For an interesting view of this point, please see, David Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), pp 138-45

<sup>395</sup> Dr. James S. Corum, 'The myth of air control, reassessing the history', in *Aerospace Power Journal* (Winter, 2000), pp 61-77, pp 74-5

<sup>396</sup> for example see; Dr. James S. Corum, 'The myth of air control, reassessing the history', in *Aerospace Power Journal* (Winter, 2000), pp 61-77; Dr Scot Robertson, 'The development of Royal Air Force Strategic Bombing Doctrine Between the Wars', in *Airpower Journal* (Spring, 1998), pp 37-52

<sup>397</sup> David Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 146

or casevac. In Iraq, this task was performed using modified Vickers Vernon aircraft, as outlined earlier.

As has been alluded to earlier, the success of Air Control operations in overseas territories was based largely on the ability of the RAF to create and leverage intelligence. Indeed, Sebastian Ritchie has argued that the clear majority of air force operations in overseas territories in the 1920s were reconnaissance, as opposed to offensive operations.<sup>398</sup> This is reflected in RAF sorties conducted in small wars throughout the interwar period. Intelligence was the foundation on which Air Control was built:

The key to employing a relatively small number of aircraft effectively while avoiding unnecessary, counterproductive casualties was intelligence. A highly sophisticated civil/military intelligence service evolved which formed 'the foundation on which successful Air Control is based'<sup>399</sup>

Indeed by the end of the interwar period, the importance of intelligence was reflected in the teaching at the RAF Staff College in which it was cited as a key success factor when operating Air Control.<sup>400</sup> In order to address this issue the RAF took over responsibility for the intelligence network in Iraq that had been established by the army in the early 1920s. Men like Sir John Glubb would, in Lawrence of Arabia fashion, integrate with local communities and become the eyes and ears of the

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<sup>398</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 31

<sup>399</sup> Wing Commander A. J. C. Walters, 'Air control: past, present, future?', in *Air Power Review*, vol.8 no. 4 (Winter, 2004), pp 1-19, p. 6

<sup>400</sup> 'RAF Staff College, 15th Course, air participation in small wars', by Wing Commander L.N. Hollinghurst, 13 July 1937, RAF Hendon, AC 73/23/35, p. 5, also, 'Precis of a lecture given by Squadron Leader G.C. Pirie to the RAF Staff College, 9th course, small wars', RAF Hendon, B2256, p. 3



administration. Wireless communication would enable this information to be transmitted quickly and give the civil authorities, and their military advisors, a better picture on which to base their decisions. At a more basic level aircraft allowed Iraq to be accurately mapped for the first time, and so photoreconnaissance missions played a very significant part in RAF operations, particularly early in the Air Control era. By 1928 the RAF doctrine stated that 'a knowledge of the country is therefore of the greatest importance to all air personnel who may be called upon, all opportunities should be taken to add to this knowledge through aerial reconnaissance and photography'.<sup>401</sup>

Another key development that evolved because of Air Control operations was the area of communications. During the First World War the ability of aircraft to communicate with ground forces was important, however the development of a satisfactory system did not happen prior to the end of that war. Within the Air Control environment, the close cooperation between air and ground forces meant that this problem needed to be solved. In Iraq, this air ground communication could be achieved through rudimentary systems. One such system described by Sir Basil Embry was based on the laying out of white cloth by the ground forces to communicate messages to the aircraft overhead (see photo 13, below), these were 'ground strips made of white American cloth; for example, a square would mean all was well, an M that a doctor was wanted, an E that hostile tribesmen were about'.<sup>402</sup> The ability of ground forces to better communicate with air forces, and vice-versa,

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<sup>401</sup> 'Royal Air Force War Manual, AP1300', 1928, RAF Hendon, 017691, point 24

<sup>402</sup> Sir Basil Edward Embry, *Mission completed* (London, 1957), p. 53

would continue to develop during the inter-war era, this reached a new high point in operations conducted in Palestine in the 1930s.

**Photo 13 – An armoured car signals an aircraft**

A "T" signal and a flare light signal being fired by officer of armoured car (Ramleh Aerodrome), ND, between 1934-9



**Source:** Library of Congress, Matson Photograph collection, LC-M33- 9927, available at <http://www.loc.gov/pictures/item/mpc2010004270/PP/>, accessed 07 August 2015

Another area that developed rapidly as a key component of operations in Iraq was propaganda, or what would be referred to in modern terminology as psychological operations, or *psyops*. Dean, and others, have argued that *psyops* played a significant role in Air Control;

psychological warfare was tailored to create a sense of helplessness among the target people and was an integral part of Air Control operations. Coupled with the "inverted blockade," psychological

warfare proved useful in Air Control operations<sup>403</sup>

Not only were *psyops* used to create a sense of helplessness, they were also a key component of communication with the population. They enabled the coercive nature of offensive air operations by enabling the air force to communicate its requirements, while also providing the enemy with the information they required to bring an end to such operations. This use of leafleting as a means of communication would be something that the RAF would utilise in later operations in Malaya and Kenya. An evolution in this concept would come with the use of the loud speaker aircraft. Speaking in 1933 to the Imperial Defence College, the Deputy Chief of the Air Staff stated that ‘we now have in the loud-speaker aircraft a sure and almost ideal means of delivering propaganda at its proper destination, the ear of the individual tribesman’.<sup>404</sup>

Evolution and innovation is something that is apparent in any military conflict. As can be seen throughout history, the pace of evolution and innovation accelerates during periods of conflict and the Air Control era is no different. Above are just some of the examples of this, others that will be discussed in later chapters include; joint operations, aircraft development and close air support. What is important about this period is that the evolution and innovation experienced in the likes of Iraq must be viewed in light of the operations in that particular environment, and not used as a comparison for the development, or lack thereof, in conventional operations, as some

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<sup>403</sup> David J. Dean, ‘Airpower in small wars’ in *Air University Review* (1983), n.p.

<sup>404</sup> ‘Air Staff Memorandum, No. 52. 255005/33 air control, a lecture by the Deputy Chief of the Air Staff at the Imperial Defence College’, April, 1933, file contained in, ‘Lectures and articles on air power, from "The Journal of the Royal United Services Institute", 1937 - 1954’, RAF Hendon, 23614

have done.<sup>405</sup> The developments outlined above undoubtedly made Air Control a more effective and efficient military system; the charge that they in any way hampered the development of conventional operations and tactics of the interwar Royal Air Force is disingenuous. As David Omissi has argued, the doctrinal and technical developments that happened in relation to Air Control were valid for that environment and did not correspondingly hamper wider development in the RAF, doctrine on conventional warfare developed to meet the requirements in Europe and was not influenced by operations in the Empire, 'nor did air policing have a detrimental effect upon the design of bombers intended to serve in Europe, as their specifications were issued without reference to imperial requirements'.<sup>406</sup> However it can be argued that the fact that the RAF apparently operated in distinct silos during the period was counterproductive, the lessons of air control could have, and should have, influenced the developed of conventional doctrine and approaches in the wider RAF community. For example, the certainly some of the lessons about air-ground cooperation would have had equal applicability in the deserts of Iraq as in the fields of France.

While it has been shown that to a certain extent operations in the interwar period did reflect doctrinal teachings, and that a period of evolution and innovation is apparent, the final assessment is what impact did these operations have in the territories in which they were conducted.

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<sup>405</sup> For example see, A. Clayton, *The British Empire as a superpower 1919-1939* (Basingstoke, 1939); Dr. James S. Corum, 'The myth of air control, reassessing the history', in *Aerospace Power Journal* (Winter, 2000), pp 61-77;

<sup>406</sup> David Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 149

## Impact of Operations

### British Somaliland

As Sebastian Ritchie has stated, during the campaign in British Somaliland ‘air power was not merely to be employed in an offensive capacity’.<sup>407</sup> The roles listed earlier, and conducted during phase two of the campaign, showed the wide utility of airpower in this type of operational environment. This multifaceted role was a glimpse into the future of RAF operations in the colonies and foresaw the broader operational duties of airpower in small wars and counterinsurgencies. From the outset of operations, the Royal Air Force was viewed as the primary instrument, however land forces would play a significant role:

During the war an expedition against the Mullah was obviously impracticable, but a few months ago the whole situation was carefully reviewed, in the light of the experience gained in the war. It was decided that the operations should take the form of an attack from the air, followed up, if successful, by advanced patrols of mounted forces with infantry supports. These operations have now been carried out.<sup>408</sup>

The role of airpower within the campaign was significant, however in the main the campaign can be described as a joint operation, one in which airpower provided initial independent action, and then in the following phase reverted to the role of ground support operations.<sup>409</sup> The argument that airpower had been decisive in a matter of weeks, in a conflict that had been raging for twenty years, is inappropriate. However, the analysis of the operations in Somaliland would be brought up again

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<sup>407</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies in the Middle East, 1919-1939* (Cranwell, United Kingdom, 2011), p. 5

<sup>408</sup> HC Deb 17 February 1920 vol 125 cc719-23

<sup>409</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 12

and again in the ongoing discussions about the efficacy of Air Control. Speaking in 1926 in relation to a proposed use of Air Control in the North-West Frontier, the DCGS in India, Major General Walter Kirke, wrote ‘that the campaign in Somaliland was in no sense an “independent air operation”. In fact, aircraft were used according to the normal ideas of cooperation with ground troops’.<sup>410</sup> Furthermore, many have argued that the power of Hassan had been gradually eroded and by the time of the campaign in 1920, he was a spent force. Supporters of the Army even went so far as to say that in fact the use of airpower had hampered operations, and that ‘Somaliland had been somewhat of a hoax on the part of the Air Ministry’.<sup>411</sup> Both points of view are extreme, the truth most likely lies somewhere in the middle. Undoubtedly the use of airpower aided the final campaign against Hassan, but more importantly it demonstrated the utility and efficiency of the RAF in colonial operations. Indeed, Winston Churchill, speaking in February 1923 said in the Commons:

The total casualties of all the operations involved in the destruction of the power of the Mullah was one native African soldier died of wounds and one slightly wounded. That is what happens when you let air power have its way.<sup>412</sup>

It would seem in Winston Churchill’s opinion that he had found a utility for airpower that would aid in Britain’s post war colonial obligations. In the same speech to the House of Commons Churchill would confirm that:

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<sup>410</sup> NA AIR 5/413, para. 24a, 16 May 1926, as quoted in, Derek J. P. Waldie, *Relations between the army and the Royal Air Force*, unpublished thesis (London University, 1980), p. 38

<sup>411</sup> Colonel H. L. Ismay, Commander of the Somali Field Force, quoted in David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 16

<sup>412</sup> HC Deb 23 February 1920 vol 125 cc1339-455, 1390

I have directed that the chief of the Air Staff to submit an alternative scheme for the control of Mesopotamia, the Air Force being the principal force or agency of control, while the Military and Naval forces on the ground and river would be an ancillary power.<sup>413</sup>

### Iraq

It is important to remember that British operations during the interwar period cannot all be lumped into the same generic title of ‘imperial policing’, the use of air power in Iraq was very broad. The issues facing the RAF were diverse, from border security against outside threats, to internal policing, to garrison duties, these different roles required different responses. At its basic level, air power in Iraq was an experiment in an approach to imperial control that had no significant precedents. Thus, it is not surprising that the early doctrinal guidance and approach to operations in Iraq was undeveloped and unsophisticated. However, the RAF adapted quickly to its new operating environment, we see an evolutionary process both in terms of the doctrinal guidance and in the practical application of airpower. This is clearly evidenced in the doctrinal documents as outlined earlier, and in the approach to operations in Iraq. What was a rudimentary concept in the early 1920s evolved into a complex approach to the use of airpower in colonial territories.

The results of the Air Control scheme, as it was operated in Iraq in the interwar years are clear. It was a success. Speaking in 1925 Henry Dobbs, the High Commissioner,

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<sup>413</sup> HC Deb 23 February 1920 vol 125 cc1339-455, 1354

stated ‘Air Control has been so brilliantly magnificently successful [...] that it has outstripped the expectations of the Cairo Conference of 1921’.<sup>414</sup>

In his letter to Hugh Trenchard in March 1920, a year before the Cairo Conference, Winston Churchill asked a simple question; could the RAF maintain security of this new mandate (i.e. Iraq), while at the same time reducing the not inconsiderable drain Iraq was putting on the public finances? Thus, Air Control had two specific objectives, first to maintain security, and secondly to deliver this security more economically than existing methods.

In terms of security, the RAF brought stability to the Iraq mandate that helped the development of the still immature Iraqi state. David Omissi has argued that ‘had Air Control not offered a cheap but effective alternative to military occupation, it is likely that the British presence would have been curbed or ended’.<sup>415</sup> Not only did the RAF secure Iraq against outside threats, it also ensured internal security.

Regarding how this security was delivered, debate has emerged as to the extent to which air forces or ground forces were used in proportion to each other, for example James Corum has stated that ‘all the major operations of the [Air Control] era can best be described as joint operations rather than airpower operations’, in a later work he goes further and states that ‘airpower served mostly as a support arm to ground

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<sup>414</sup> David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 35

<sup>415</sup> *Ibid.*, p. 37



forces'.<sup>416</sup> On the other side of the argument are those like Liddell Hart who argued that '[speaking of Air Control in Iraq] The air has made an attack and the ground detachment has walked in to receive a tame surrender. But, throughout, air has played the primary role'.<sup>417</sup> This debate however does not really add to the discussion. The Air Control scheme was not concerned with the ratio of air operations, versus ground or joint operations. That said, its employment led to a significant reduction in the use of ground forces, and a corresponding increase in the use of air forces. Ultimately Air Control placed the mandate for control of Iraq in the hands of the Air Officer Commanding, it was his duty to utilise the tools at his disposal to achieve his objectives, and these tools included air forces, as well as ground forces. This joint approach was highlighted as early as CD22 Operations, and was a familiar thread throughout the doctrinal publications of this period. Airpower acted as a force multiplier, thus allowing for a significant reduction in ground forces. This idea of 'jointery' can be seen not only in doctrinal publications but also in staff college lectures in the interwar period. Courtesy of Neville Parton,<sup>418</sup> the following excerpt from a RAF staff college lecture in 1938 is insightful:

Finally, I would like once more to stress the attitude of mind we should adopt when approaching this subject . . . Let us remember that we and the Army alike are instruments of the Government we serve. We may differ in character, but we are there for the same purpose – to defeat the forces of disorder and lawlessness – *and* we are there to help each other. It is up to each service to be expert in its own particular sphere and to its commanders and staff officers to give impartial advice to the

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<sup>416</sup> James S. Corum and Wray R. Johnson, *Airpower in small wars: fighting insurgents and terrorists* (Lawrence, Kan., 2003), pp 85-6; Dr. James S. Corum, 'The myth of Air Control, reassessing the history', in *Aerospace Power Journal* (Winter, 2000), pp 61-77, p. 75

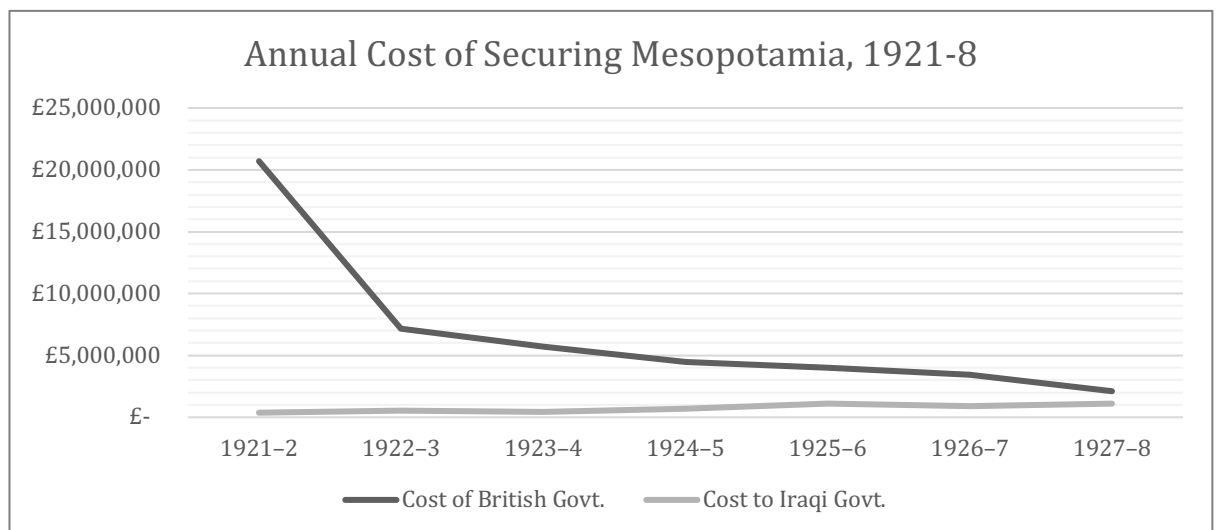
<sup>417</sup> Liddell Hart, *The British way in warfare* (London, Undated), p. 153

<sup>418</sup> Group Captain Neville Parton, 'In defence of doctrine...but not dogma', in *Defense & Security Analysis*, vol. 24, no. 1 (March 2008), pp 81-9, p. 89

political authorities – the users – before any operation is undertaken, and to be ready with that advice as the situation develops. This means the closest co-operation between all three, both in peace and during actual operations, and the recognition by the Army and ourselves of the paramount position of the Government, in whom alone is vested the right to decide upon the form specific operations . . . shall take.<sup>419</sup>

The economy of Air Control is a subject that was much debated at the time. On the face of it defence expenditure in Iraq fell from a high of nearly £30 million in 1920-1, to a figure of £3.4 million by 1925.<sup>420</sup> However, there were those who at the time argued that the budgetary savings were overstated, Lord Lloyd speaking to the House of Lords in April 1930 stated that he felt the figures were somewhat skewed.<sup>421</sup> Thus, the extent of the savings can perhaps be debated, the fact that Air Control delivered significant savings cannot, as is demonstrated in the graph below:

**Figure 12 - Cost of Securing Iraq, 1921-8**



**Source:** All analysis by the author, data taken from, HC Deb 27 February 1929 vol 225 cc2012-2014, 2013

<sup>419</sup> Wing Commander A. B. Ellwood, 'Air participation in small wars', 1938, *Air* 69/178, RAF Hendon.

<sup>420</sup> David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 24; *Ibid.*, p. 35

<sup>421</sup> 'Extension of Air Control', debate in House of Lords, April 9th 1930, also letters from 'Times' referring to the debate, RAF Hendon, AC73/23/33

The charge of inhumanity is an oft-cited one against Air Control and this charge was supported by certain instances that seem to confirm it. For example, Trenchard's proposal that civilian casualties should be reported in bulk numbers without distinguishing age and sex is marked.<sup>422</sup> However when considering this it is important to consider the alternative. The traditional approach to this would have been the punitive ground expedition. The traditional approach had three major disadvantages when compared to the use of air forces, firstly, it led to increased casualties to British forces, secondly it resulted in significantly more casualties to the indigenous population, and thirdly it was considerably more expensive. Furthermore, although operations such as that described at Samawha are held to be representative of air force operations in Iraq. There is a body of work that argues that in fact this type of operation was rare, and became rarer as the years went by. However, as Walters has argued, ultimately, 'Air Control became unacceptable because the West's sense of humanity evolved faster than technology's ability to reduce collateral damage.'<sup>423</sup> What facilitated the continuing debate about the humanity of Air Control operations was the fact that in 1924 a new Labour Government came to power in Britain. This may have focused the mind of those who looked to undermine the Air Control approach, however, apart from some initial attention on this topic by the incoming government, it appears not to have had a lot of support and this faded into the background. Indeed the RAF in the years after the Labour election victory periodically addressed this issue, for example in a report entitled 'Air power, the fallacies of inhumanity and rancour', it states that the conduct of Air Control operations left no lasting resentment against the RAF in territories where it had been

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<sup>422</sup> 'Trenchard to Young', August 22, 1921, TNA, 39645, CO 730/2

<sup>423</sup> Wing Commander A. J. C. Walters, 'Air control: past, present, future?', in *Air Power Review*, vol.8 no. 4 (Winter, 2004), pp 1-19, p. 15

used, indeed it quotes Sir Arnold Wilson, Civil Commissioner in Baghdad, as stating that 'I am convinced that this country [Iraq] offers exceptional scope for use of the Air Force as an inexpensive, efficient and a merciful means of maintaining order alike on hill and plain'.<sup>424</sup> Satia Priya argues however that Air Control was anything but merciless, and states that:

The inhumanity of the system stemmed from its inability to distinguish between combatants and noncombatants, a conflation no less iniquitous in the case of violent impoverishment of villages than in simple massacre of them.<sup>425</sup>

Ultimately Air Control delivered on the twin objectives of security and economy, it also delivered something for each of its progenitors, as David Omissi so eloquently states,

it was conceived by Churchill as an instrument for his own political advancement; it was adopted by Trenchard to ensure the survival of the air force; and it was implemented by the British government to save money without sacrificing oil-rich Middle Eastern territory.<sup>426</sup>

Iraq was not the only country in which the RAF operated in an imperial policing role in the interwar years. In some countries, such as Transjordan and Aden, the RAF also applied the concept of Air Control in its fullest sense, while elsewhere in the Empire, such as Somaliland and the North-West Frontier, the RAF would be used as an adjunct to Army operations. It is within the wider context of these other theatres that we see both the success and the failure of the Air Control scheme.

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<sup>424</sup> 'Air power, the fallacies of "inhumanity" and "rancour"', RAF Hendon, B2244

<sup>425</sup> Priya Satia, *Spies in Arabia, the Great War and the cultural foundations of Britain's covert empire in the Middle East* (Oxford, 2008), p. 246

<sup>426</sup> David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 38

## Aden

On the face of it the operations in Aden were not dissimilar to those in Iraq, the RAF had to deal with an external threat, followed by the objective of maintaining internal security. It achieved both missions very effectively, and efficiently. It would be easy to disregard the RAF role in Aden as being simply an extension of what they had been doing in Iraq, albeit on a much smaller scale, however that would be to oversimplify the situation. In fact, the operations in Aden show an evolution in the principle of Air Control, an evolution that had Iraq to thank, and an evolution that would add to the already strong body of evidence that the principal of Air Control and air substitution was a legitimate approach to colonial control. An approach that delivered on the twin objectives of security and economic efficiency. This evolution can be seen in the heightened appreciation of the importance of intelligence and political officers within the Air Control framework. With the building of a comprehensive network of air strips throughout the Protectorate, the RAF could transport intelligence and political officers to a trouble spot and effectively nip a problem in the bud, before the requirement arose for offensive air action. This was an approach first used in the early to mid-twenties in Iraq and one that the RAF relied heavily on in Aden. Within this approach, we essentially see the birth of the principle that recognized the indigenous people as being an important factor in colonial policing, not simply a target, this is something that the British would rely heavily on in later small wars, this principle was espoused succinctly by Charles Portal in 1938 when he stated that:

In Aden it was our constant aim to get the native to think of a landing ground not only as a place from which he might be bombed, but also as a point of contact with civilization where he could obtain some of its benefits without having to submit to what he regards as its

disadvantages [...] Once these relations have been formed, the native is not slow to make the fullest use of his opportunities, and the network of unguarded landing grounds throughout the country becomes a very real blessing to him.<sup>427</sup>

While the use of Air Control in Iraq and Aden was undoubtedly successful in achieving its objectives, it was not without its faults. The morality of proscription bombing discussed in relation to Iraq, and the consequent lack of infrastructural investment in Aden because of the predominant role of the RAF, have already been highlighted. Throughout the 1920s the RAF showed that the policy of Air Control and air substitution were now becoming a central cog in the machinery of colonial control. It would not be until the challenge faced by the RAF in Palestine that it would become apparent that perhaps Air Control was not the panacea for the British Empires colonial challenges. It would be this challenge that would bolster the detractors of Air Control at the time, and would be held up as an example of the failings of Air Control by commentators ever since.

### *Palestine & Transjordan*

Palestine has been used in contemporary discussions to disregard the potentialities of the use of Air Control in modern small wars. However, what these detractors fail to appreciate is the simple fact that Air Control was not instigated in Palestine by the RAF.<sup>428</sup> This was because from the very beginning of RAF operations in Palestine, they were acutely aware of its limitations, and that it was unsuitable for operations in densely populated areas. The RAF took over responsibility for Palestine, not as

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<sup>427</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 33

<sup>428</sup> *Ibid.*, p. 26

another territory in which they could prove the principles of Air Control, but rather at the insistence of Churchill, who for administrative efficiency, wanted a unified command to secure both Palestine and Transjordan.<sup>429</sup> Another colonial territory in which the RAF held a very clear subordinate position was in relation to India, in particular the North-West Frontier.

### Northwest Frontier

Ultimately, like Palestine, Air Control was never implemented in the North-West Frontier. As Omissi argues, ‘the government of India remained unwilling to risk large-scale reductions to the Frontier Army, and preferred an expensive policy of road building and military occupation’.<sup>430</sup> However what the RAF did do in the North-West Frontier was act as a force multiplier. Its activities spanned the range of air force capabilities at this time, their functions included; air reconnaissance, re-supply, force protection, propaganda, air transport and offensive air operations. The inability of the RAF to implement Air Control in its fullest sense in India resulted from several factors; the political strength of the Army in India, and the lack of a key Air Control champion in the India Office. Another key element of this was the sheer complexity of the problems in the North-West Frontier, the region did not represent one single challenge, but rather represented a series of interconnected issues. ‘In the very north, in Malakand, home of the Yusufzai, there was effectively a monarchy, three tribal chiefs under the protection of the British. In the middle, in the Khyber region populated by the Afridis, there was a feudal aristocracy. In Kurram, among

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<sup>429</sup> ‘Odd notes on "substitution" (dictated as a basis for a talk to the Parliamentary Army and Air Committees on the 21st June, 1932)’, RAF Hendon, B2254, p. 24; Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 28

<sup>430</sup> David E. Omissi, *Air power and colonial control: the Royal Air Force, 1919-1939* (Manchester, England ; New York, 1990), p. 49

the Shia Turis, there was a fairly well worked democracy. In North and South Waziristan, home respectively to the Wazirs and their ancestral cousins, the Mahsuds, there was anarchy'.<sup>431</sup> It was this political and cultural complexity that undoubtedly led the Government of India to retain confidence in the Army, as opposed to trying something new and radical.

Furthermore, the Army had lost the debate in relation to Iraq, Aden, Palestine and Transjordan, they would not lose the debate in relation to India. To a certain extent, India represented the last great bastion of colonial power, one which had relied upon the British Army to ensure its control and security since its inception, if the army held an unshakeable grip on the military power in India, it also retained its position as the senior military service alongside the Royal Navy.

The genesis for the idea of the Air Control scheme is hard to determine. While some have argued that it had various originators, including; Trenchard, Churchill and Sykes, the more likely explanation is that it was an evolutionary process, where many differing ideas culminated in the formulation of the Air Control scheme. As early as December 1918, Frederick Sykes espoused the idea of a 'striking force which would be utilised when possible for Imperial police work, mail-carrying, and other public duties'.<sup>432</sup> Jaffna Cox argues that 'Syke's scheme was too costly for a government anxious to disentangle itself from foreign commitments, or at least from

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<sup>431</sup> Christian Tripodi, 'Peacemaking through bribes or cultural empathy? The political officer and Britain's strategy towards the North-West Frontier, 1901–1945', in *Journal of Strategic Studies*, 2008, vol. 31, no. 1, pp 123-51, p. 127

<sup>432</sup> as quoted in, Paris, Michael, 'Air power and imperial defence 1880-1919', in *Journal of Contemporary History*, vol. 24, no. 2 (1989), pp 209–225, p. 222



the associated burdens of large-scale military spending'.<sup>433</sup> Although Sykes' initial plan was rejected by the cabinet, it was this concept that contributed to the ultimate evolution of the Air Control scheme. Undoubtedly operations in Somaliland, the North-West Frontier and Iraq all added to the doctrine of Air Control and by 1925, as has been demonstrated, this approach was relatively mature.

RAF colonial operations in the interwar period are certainly not a story of the evolution and expansion of the concept of Air Control. The story is also not one of the revolutionary development of airpowers utility. Rather the story is a lot more mundane than that. RAF operations in the interwar period throughout the British colonial empire was a story about necessity and practicality. Necessity in the sense that the British exchequer required a cheaper alternative to traditional ground centric approaches to colonial security, and practicality in the sense that a number of the territories that required securing were geographically predisposed to airpower, being in the main rugged and inaccessible.

Furthermore, when we analyse doctrine and theory, and map this to operational realities, we can determine that the RAF during this period displayed the characteristics of what now would be deemed a learning organisation. As discussed in chapter 1, organisational learning:

[...] typically adds to, transforms, or reduces organizational knowledge. Theories of organizational learning attempt to understand

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<sup>433</sup> Jafna L. Cox, 'A splendid training ground: The importance to the Royal air force of its role in Iraq, 1919–32', *The Journal of Imperial and Commonwealth History*, vol. 13, no. 2 (1985), pp 157-184, p. 157

the processes which lead to (or prevent) changes in organizational knowledge, as well as the effects of learning and knowledge on behaviours and organizational outcomes.<sup>434</sup>

The RAF documented an initial approach to air operations in the colonies and over the course of twenty years this approach evolved based on operational feedback.

This operational feedback added to and transformed the knowledge within the organisation. This knowledge not only influenced subsequent doctrinal publications, but was also taught at the staff college, and disseminated through professional and commercial publications.

Thus, the analysis of RAF operations in the interwar period is a case of horses for courses. Where appropriate, and where the RAF held command responsibility, they pursued a policy of Air Control, based on an approach that instigated air substitution. However, where the Army held command responsibility, for example in the North-West Frontier, the RAF were always in a subordinate position, having to adhere to the overarching policy of security as implemented by the Army.

Regardless of which arm held command responsibility, or to what degree the operations could be characterised as Air Control, or army support, in the main RAF operations during the interwar period were successful. The RAF gave the British Empire the ability to secure, and thus hold onto, many imperial possessions, that they simply could not have maintained with a tradition approach of deploying ground forces. By 1939 the RAF were tasked with operations that were vastly

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<sup>434</sup> Martin Schulz, 'Organizational learning' in *The Blackwell companion to organizations* (2002), available at <http://www.unc.edu/~healdric/Courses/Soci245/Schulz.pdf> (accessed 17 April 2014), p. 1

different to those that had been carried out in the deserts of Iraq or the mountains of the North-West Frontier. However, shortly after the conclusion of the Second World War, the RAF would once again be tasked with operating in a small wars environment, this time it would not be over arid desert, but rather over the lush jungles of Malaya, in South East Asia.

### Chapter 3 – Post War Colonial Security

The use of airpower in unconventional operations was very apparent during the Second World War; for the most part this manifested itself with the Allied support of guerrilla/resistance forces in many countries, including Greece, Yugoslavia, Norway, Poland and Malaya. This was characterised by logistical support and driven in the main by the Special Operations Executive (SOE). During the war the SOE landed 7,000 agents behind enemy lines, these agents acted as liaison officers and advisors to the guerillas.<sup>435</sup> Also, significant during the Second World War was the use, by the Germans, of outdated aircraft to counter guerrillas, in particular the Stuka Dive Bomber and Fieseler Storch.<sup>436</sup> These aircraft, while outdated for front line service, proved very adept at operations against guerillas. With the development of the jet engine, the post war period would show that slower, older aircraft were ideally suited to counterinsurgency operations.

Britain emerged from the Second World War intact, the mainland never having been invaded, however the majority of Britain's colonial empire had faced prolonged fighting; the Middle East, Malaya, and territories in East Africa had faced invasion, occupation and ultimately liberation. Britain now faced the challenge of either reasserting her colonial rights over these territories, or in some cases beginning the transition towards independence, or at least some form of self-governance. Not only

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<sup>435</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 57.

<sup>436</sup> *Ibid.*, p. 61.

had the world changed dramatically in the six years of war, but also the military machine at Britain's disposal had evolved immeasurably.

By the conclusion of the Second World War the RAF was a different air force than that which had fought insurgents in Britain's colonial territories in the interwar years. This evolution, and near revolution, encompassed technology, operations and scale. From a technological perspective the evolution in aircraft, navigation equipment and armament had resulted in an air force that could deliver the basic functions of airpower; air strike, mobility and reconnaissance, but deliver it in a manner much more efficient and effective than it could a decade earlier. In terms of operations, the RAF had become very adept at ground support operations and interdiction, while also evolving their approach to strategic bombing. Operations conducted during the Second World War were significantly different to those performed in the colonies in the 1920s and 1930s. In the main operations had been of a conventional nature, time would tell if the skills learned on these operations could be applied once more to counterinsurgency operations in colonial territories. The scale of the RAF had also changed drastically in the space of a decade, however the contraction experienced in the wake of the First World War was not to be repeated on the same scale with the cessation of hostilities in 1945. However, by 1947 the RAF had still shrunk by over one million personnel, and by March 1947 contained 330,000 personnel.<sup>437</sup> Certainly, the post-war RAF had to be downsized, however the looming Cold War would ensure that the requirement to maintain a strong air force would be a necessity, and not a luxury.

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<sup>437</sup> HC Deb 17 March 1947 vol 435 cc39-147, 42

In the wake of the Second World War the world was changing. A tide of nationalism was sweeping colonial territories and this was very apparent in British colonial territory. Over the next three decades' colonial powers would come under increasing pressure to support self-determination and withdraw from territories that had traditionally been a key component in their financial and social fabric. This movement would particularly effect Britain; countries like Malaya, Kenya, India, Burma and many more would embark on the painful transition from colonial territory to independent state. Within these conflicts the importance of psychological operations would come to the fore, as Martin Thomas has argued, the wars of decolonisation in the period 1945-1975 were 'always as much a struggle for minds as for territory', the RAF would play a significant role in this regard.<sup>438</sup> This chapter will focus on the small wars and insurgencies that the RAF would play a part in during this period, in particular engagements in Malaya and Kenya.

Whereas in Malaya the RAF brought to bear the might and technological strength of airpower, in lesser theatres, RAF personnel were having to make do with equipment that was probably more reminiscent of the Air Control era. Kenya, it can be argued, falls into this category of post-war peripheral colonial conflicts.

This chapter will place these RAF operations in the context of the theory and doctrine that was prevalent at the time, along with analysing whether traits of the interwar Air Control tactics can be seen in the approach to operations in the post war era. A key component of this analysis will be to see to what extent operations

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<sup>438</sup> Martin Thomas, 'Insurgent intelligence: Information gathering and anti-colonial rebellion', in *Intelligence and National Security*, vol. 22, no. 1 (February 2007), pp 155-163, p. 155

impacted doctrine and theory, and correspondingly, how doctrine and theory impacted operations. By performing this analysis, it will become apparent whether or not the learning organisation that the RAF created in the interwar period, as discussed in chapter 2, survived into the post-war period and whether we see a continuation of the approach to learning and knowledge creation that was apparent in the 1920s and 1930s. Furthermore, it will look to see whether evolution and innovation occurred in how the RAF approached these operations from one theatre to another, once again this will provide evidence on whether the RAF continued to be a learning organisation by understanding whether the knowledge and experience gleaned in one theatre was transmitted to personnel operating in other theatres. This period is particularly important as it provides a link between the birth of RAF operations in small wars (i.e. Air Control in the interwar period) and the current operations being carried out by the RAF in Afghanistan against the Taliban and the Middle East against ISIS.

Before focussing on the conflicts mentioned above and the operations that were carried out, it is important in the first instance to view the theoretical and doctrinal context in which these operations were carried out.

### ***Theory & Doctrine***

With the dropping of the atomic bomb on Hiroshima and Nagasaki the US introduced a new and devastating weapon into warfare. The effect that this weapon would have on airpower theory was dramatic. Although the Second World War had proven the importance of tactical airpower in combat, the development and use of atomic weapons heralded a new chapter in airpower theory, one dominated (once

again) by strategic bombing, in this case of the nuclear variety. As John Buckley has argued, 'the atomic bomb negated the need for a massive air superiority campaign, for one aircraft with one atomic bomb could do the task of a whole fleet of conventional strategic bombers in one mission'.<sup>439</sup> In 1946 Bernard Brodie summarised the effect that this would have by stating that now; any city in the world could be destroyed and that no adequate defence then existed against the use of nuclear weapons.<sup>440</sup> For the next twenty years airpower theory would be consumed by the question of how to utilise nuclear weapons. This focus on nuclear strategy was at the expense of tactical airpower, the effect of this neglect would be felt strongly in later conflicts like the Korean War. The effect of the focus on the nuclear dimension of future war was that general airpower theory suffered greatly, there was a significant lack of theory in the period 1945 to 1975, while theory related to the use of airpower in small wars was limited. While there may have been a dearth of airpower theory, particularly related to its use in small wars, there was a body of doctrinal knowledge that practitioners of airpower could rely on.

The first update to post-war RAF doctrine came with the publication in 1950 of the *RAF War Manual*.<sup>441</sup> Although a huge amount of development had happened in the RAF since the publication of their pre-war doctrine manuals, both tactically and technologically, this development had in the main concerned conventional operations. Thus the 1950 publication reiterated many of the points that had been

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<sup>439</sup> John Buckley, *Airpower in the age of total war* (Bloomington, Ind., 1999), p. 204

<sup>440</sup> as quoted in Martin Van Creveld, *The age of airpower* (1st ed., New York, 2011), p. 175.

<sup>441</sup> 'RAF Air Publication (AP) 1300, *Royal Air Force war manual part 1: operations*' (unpublished doctrine manual, Air Ministry, 1950), TNA, AIR 10/9364



published in the 1920s and 1930s in relation to colonial operations. Even the language used is similar in the way it described indigenous peoples:

These barbarous or semi-civilised peoples can be formidable enemies, and they usually have valuable allies in the climate and the terrain. Their very lack of formalised military organisation may in itself be a source of strength to them [...] They will be largely self-supporting, capable of living on the country and independent of lines of communication in the accepted sense.

Furthermore, it was cognizant of the strengths that these opponents had, regardless of the modernity of the forces that the RAF could bring to bear:

Unencumbered by complicated equipment they will be highly mobile and elusive opponents, operating in a climate and in country familiar to themselves but presenting considerable difficulties to normal modern land forces.<sup>442</sup>

Already by 1950 we see, however, some changes in the way in which the traditional doctrinal principles could be carried out. For example, the following paragraph alludes to the potential use of loud hailing aircraft to communicate with insurgents:

The first thing to do is to inform the people in unmistakable terms of what is required of them [...] They must also be given a clear warning of what will happen to them if, within a stated time, they have not complied with our terms. This is done either verbally or by political officers or by dropping pamphlets in the tribal area concerned, or even sometimes by loud-speaker from the air.

This is interesting in that it shows how the RAF was reacting to the development of new technology, and that within a relatively short period this had filtered through to

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<sup>442</sup> 'RAF Air Publication (AP) 1300, *Royal Air Force war manual part 1: operations*' (unpublished doctrine manual, Air Ministry, 1950), TNA, AIR 10/9364, chapter 11, para 3-4

doctrine. Although the 1950 doctrine talked of leveraging new technology, it was at the same time firmly mired in the tactics and techniques of the 1920s and 1930s:

The next step is to issue a further notice that air action will begin within an area which must be clearly defined, from a certain time [...] The enemy should be told to evacuate his habitations and advised to send his women and children out of the prescribed area.

On the expiration of the warning period, air action should begin and be continued until the enemy complies with our terms.<sup>443</sup>

Although it did take note of some early lessons from post war operations, the manual of 1950 was predominantly based on the pre-war Air Control principles. It would not be until an updated doctrine was published in 1957 that the true lessons of the Emergency in Malaya would begin to filter through to doctrinal thinking.

The publication of AP1300, Royal Air Force War Manual Part 1: Operations, in 1957 witnessed two significant changes to the way in which the RAF viewed their role in counterinsurgency operations.<sup>444</sup>

Firstly, one of the main tenets of pre-war Air Control was significantly deemphasized; the importance of the principle of dislocating the enemy's normal way of life was no longer a central principle of air operations in colonial territories. In the 1950 manual, this section had run for nine paragraphs, in the 1957 publication this had been reduced to just two. Secondly, and more importantly, the emphasis on the use of air power in this type of operation had changed. In the 1957 publication,

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<sup>443</sup> 'RAF AP 1300, *Royal Air Force war manual part 1: operations*' (unpublished doctrine manual, Air Ministry, 1950), TNA, AIR 10/9364, chapter 11, para 16-25.

<sup>444</sup> 'RAF AP 1300, *Royal Air Force war manual part 1: operations*' (unpublished doctrine manual, Air Ministry, 1957), TNA, AIR 10/5589

the overwhelming emphasis was placed on ground support operations, including; reconnaissance, offensive support, air transport, protection of surface lines of communication, the air cordon or 'air pin' system, and psychological warfare. It also emphasized the importance of intelligence, jungle operations and 'conduct after capture'.<sup>445</sup> Indeed as early as July 1948 plans had been discussed at cabinet about the 'formation of jungle units for offensive operations against guerrillas [sic]'.<sup>446</sup> Perhaps an indication that the emphasis on ground force utilisation was being stressed over the interwar primacy of airpower.

What can be surmised through an analysis of early post war doctrinal publications is that the operational realities of post war counterinsurgency operations were filtering through to the doctrinal creation process. Knowledge was being captured and communicated, thus there is an indication that the learning organisation that the RAF had fostered in the inter war period had survived the Second World War. Furthermore, the commanding officers of the post war period had served in the interwar period and so knew the challenges men in the field faced, thus they were not unfamiliar with counterinsurgency operations in these environments and the fundamentals that needed to be instilled through doctrinal teaching. However, one of the challenges with doctrine is the inherent lag between experiences in the field, and the ability to capture and disseminate these through doctrine. Thus the 1950 publication does not really include the early experiences of operations in Malaya, rather it relies on the experiences of the interwar period. However, by 1957 the

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<sup>445</sup> Sebastian Ritchie, *RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011), p. 7

<sup>446</sup> TNA, CAB 129/28/40, 19 July 1948

experiences of Malaya (the Emergency having begun in 1948) had been distilled and captured, and thus impacted on the doctrinal publication of 1957. If one thinks about the doctrinal creation process, and all that is involved, it is not difficult to see how this lag occurs. As will be discussed later in this work, one of the challenges for contemporary doctrinal creators is to minimize this lag through changing the doctrinal formulation process, while also using technology to enable the timely capture and dissemination of operational experience. It is to the operational reality of Malaya that this work now turns.

### ***Malaya***

One of the challenges faced by the British in the wake of the Second World War was re-establishing rule in its colonial empire. Many of these colonies had been invaded during the hostilities and so had spent a number of years under different rulers. The challenge now was for the British to not only re-establish rule, but also to re-establish their legitimacy to rule. One such colony was Malaya.<sup>447</sup>

The Malayan peninsula, situated in South East Asia, is surrounded by the sea; the South China Sea to the east and the Strait of Malacca to the south and west. Its only land border is with Thailand and stretches for approximately 170 miles. Malaya is roughly the size of England and Wales together, and about 80 per cent of the land is covered in equatorial rain forest. Its major exports were rubber and tin, and it was these valuable commodities that drew colonial interest to the peninsula. From the

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<sup>447</sup> Malaya, or British Malaya at this time comprised of the *Straits Settlements*, the *Federated Malay States* and the *Unfederated Malay States*.

18<sup>th</sup> to the 20<sup>th</sup> century the region was known as British Malaya and encompassed the peninsula and the island of Singapore.

**Map 1 – Map of Malay Peninsula, 1949**



Source – available at [http://unostamps.nl/country\\_federation\\_of\\_malaya.htm](http://unostamps.nl/country_federation_of_malaya.htm), accessed 26 February, 2017

Malaya, as it was known, was not a single entity but rather a collection of states, as the British Cabinet so presciently noted in May 1945, ‘Malaya forms neither a racial nor a constitutional entity, and an appreciation of this fact is essential to any understanding of the problems we shall meet on our return’.<sup>448</sup> The planning for the return to Malaya began at this point and by August 1945 a memorandum was presented to the Cabinet detailing the post war approach to Malaya and Borneo.<sup>449</sup> From a security perspective, even at this early stage a role was envisaged for the RAF, however its scope of operations was quite limited, being seen predominantly as a tool that could provide a presence in remote areas, while also being of utility in protecting Malaya from outside threats.<sup>450</sup>

In 1942, the Japanese army had invaded Malaya and was to retain control until the end of hostilities. During this occupation, the British aided the Malaya Peoples Anti-Japanese Army (MPAJA), a rebel group fighting against the Japanese occupiers. At the end of the Second World War, elements of the MPAJA would become the core of the Malayan Races Liberation Army (MRLA), the military wing of the Malayan Communist Party (MCP). In 1948 with the rejection of a British proposal to create an independent state, the MCP declared war and the British authorities instituted a state of emergency.<sup>451</sup> The *Emergency* as it would become known, would last until 1960. The emergency regulations allowed for

the re-imposition of the death penalty for the offence of carrying arms,

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<sup>448</sup> TNA, CAB 66/65/37, 07 May 1945

<sup>449</sup> TNA, CAB 129/1/33, 20 August 1945

<sup>450</sup> ‘Operations record books’, TNA, AIR 24/1917, Air Headquarters, R.A.F. Malaya, January 1947 - December 1948, 03 July 1947

<sup>451</sup> James S. Corum and Wray R. Johnson, *Airpower in small wars: fighting insurgents and terrorists* (Lawrence, Kan., 2003), p. 187

and the authorities have been empowered to detain any person without trial, to search persons and buildings without warrant and to occupy properties.<sup>452</sup>

This work now turns to look at the scope and scale of operations conducted by the RAF in support of the *Emergency*.

### Operations

On the one hand Malaya was unlike any counterinsurgency operation that British forces had conducted in the interwar period, however British forces had become very skilled jungle fighters in the course of the Second World War, and it was these experiences that would be brought to bear against the insurgents in the jungles of Malaya. Undoubtedly Malaya was a ground centric campaign that relied heavily on the use of small combat teams inserted and supported within the jungle. These teams would be supported by the establishment of strong points and the fortification of villages across Malaya. While the strategy was ground centric, airpower became a key enabler of operations. One of the ways in which airpower played an important role was in the enablement of intelligence operations, which became a vital part of the counterinsurgency strategy in Malaya.<sup>453</sup>

The Malayan theatre was a difficult one for airpower to operate in; the jungle canopy was thick and deep, thus making target acquisition and identification extremely

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<sup>452</sup> TNA, CAB 129/28/21, 01 July 1948

<sup>453</sup> Roger Arditti, 'The view from above: how the Royal Air Force provided a strategic vision for operational intelligence during the Malayan Emergency', in *Small Wars and Insurgencies*, vol. 25, no. 5 (2015), pp 764-789, p. 764

difficult (the thick canopy also meant that bombs sometimes exploded in the canopy and not on the jungle floor), the weather took its toll on men and machines, while the infrastructure was distinctly undeveloped.<sup>454</sup>

By December 1948, a mere six months after the declaration of the Emergency, RAF strike aircraft were being used in complex operations against communist terrorist (CT) targets on the ground. On one occasion an operation entailed Beaufighters attacking a ground target in the first instance, followed twenty minutes later by Spitfire, two hours later ground forces arrived, however most of the CTs had fled by this stage with only one being arrested. At an adjacent camp two more CTs were arrested who had been frightened by the bombing and thus had sought shelter instead of fleeing. The RAF deemed this a successful operation, justifying this opinion by stating that the concentration of CTs had been broken up, thus potentially disrupting a force that could have ambushed the ground forces.<sup>455</sup> This operation was typical of early engagements where the remoteness of the target area hampered any successful follow up by ground forces. Furthermore, sometimes the length of time between an air strike and the arrival of ground forces made it extremely difficult to accurately survey and report on the results of the air strike operation. This operation was distinctive as being one of the last operational duties of the Beaufighter, which was withdrawn from service shortly after.<sup>456</sup>

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<sup>454</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, extracts from bandit statements

<sup>455</sup> 'Operations record books', TNA, AIR 24/1917, Air Headquarters, R.A.F. Malaya, January 1947 - December 1948, 21 December 1948

<sup>456</sup> *The Times* (London, England), Jun 17, 1949, p. 2



As early as January 1950 serious concerns were being raised about the utility of bombing, Air Vice Marshal Mellersh (Air Officer Commanding, AHQ, Malaya) noted that the opinion towards bombing in Britain and Australia was not favorable.<sup>457</sup> However, in April 1950 operations involving significant bombing were still occurring; for example, in the Selangor region an operation was mounted that involved the dropping of 110 tonnes of bombs on jungle targets.<sup>458</sup> The success of such operations were however very difficult to measure, thus it is no surprise to hear many argue that airpower played only a small role in the Malayan Emergency. For example, Major General Richard Clutterbuck, who served in Malaya, stated that:

Except for occasional successes with pinpoint bombing, offensive air strikes were almost wholly unsuccessful in Malaya; they probably did more harm than good.<sup>459</sup>

However there needs to be a reassessment of this opinion. The way in which the effectiveness of airpower in counterinsurgency operations is evaluated needs to change. Coming out of the Second World War there was an emphasis on the scorecard when it came to air operations; how many men/tanks/enemy aircraft had been destroyed. In counterinsurgency however, the scorecard is very different. The kill is not necessarily the ultimate measuring stick, rather other factors need to be analysed, for example mobility, reconnaissance, ground support, casevac etc. In counterinsurgency operations, as in most types of conflict, airpower is an enabler of ground operations; Malaya offers a great example of how true this is. Air Vice

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<sup>457</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, Air Marshal F. J. Foggarty to Air Vice Marshal Mellersh, 27/1/1950

<sup>458</sup> *The Times* (London, England), April 24, 1950, p. 4

<sup>459</sup> as quoted in, Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 40

Marshal Mellersh, who voiced concerns about the attitude to bombing in Britain and Australia, noted that:

Without our bombing the bandits would have the entire initiative and could operate against our forces on their own terms. The result would be that our own casualties would be higher<sup>460</sup>

As mentioned above, the primary goal of the air force in Malaya was support of the ground forces, to enable them to find, fix and destroy CTs. Although early in the Emergency strike operations were key, by the early 1950s and the implementation of what became known as the Briggs Plan, the RAF had deemphasized strike operations in favour of ground support.

The Briggs Plan was a relatively straightforward operational plan for the conduct of manoeuvres during the Emergency, with the goal of re-establishing control across the peninsula. The plan was composed of the following key elements:

[The plans] are based on full co-ordination of the military, police and civil forces. The military forces will clear the peninsula area by area, from south to north: the job of the police and civil administration will be to establish effective control in each area as it is cleared to enable the military forces to move on to the next.<sup>461</sup>

These elements would deliver on the aim of the Briggs plan to; instil a feeling of security among the population, to break-up the communist organization within the populated areas, to isolate the CTs from their food and support, and finally to force

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<sup>460</sup> 'Bombing mission in Malaya', *The Times* (London, England), Nov. 30, 1950, p. 5

<sup>461</sup> TNA, CAB 129/40/25, 13 June 1950

the CTs to engage on the security forces terms.<sup>462</sup> To deliver on these aims, airpower would be used to support this ground centric campaign.

The primacy of ground support operations was confirmed by Air Vice Marshal Sir Francis Mellersh, speaking at a lecture in 1951, when he said that the prioritisation of RAF roles in Malaya were ‘air supply for the Ground Forces; offensive operations on targets beyond the reach and resources of the Ground Forces; and intercommunication’.<sup>463</sup> The following section will detail each of these types of operations and provide analysis on the impact and importance of each in Malaya.

Air strike operations in Malaya fell into two broad categories, pinpoint attacks and area attacks. The former was used where intelligence indicated the precise location of an enemy target, the latter in circumstances where the enemy was known to be active in a particular area. Operations utilized a myriad of air assets, including; fighters, light bombers, heavy bombers and for a period, Sunderland flying boats.

Early in the campaign pinpoint attacks were a lot more prominent. A typical engagement, and what proved to be one of the most effective and efficient of the whole Emergency, occurred on 29 February 1949. The strike occurred in Mengkuang and involved eight Spitfires and four Beaufighters, the result was nine

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<sup>462</sup> as outlined by Air Commodore Warcup (RAF Commander Malaya, 1957-9), in Conger E. E. et al, *Symposium on the role of airpower in counterinsurgency and unconventional warfare: the Malayan emergency*, RAND symposium, January 14-18, 1963

<sup>463</sup> Mellersh had been AOA, HQ Air Command Far East in 1948 and then appointed AOC, Air HQ Malaya in May 1949; as quoted in, Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 89

CTs killed out of fifteen.<sup>464</sup> A month later in April another operation was conducted which demonstrated the difficulty of operating in Malaya. In this instance a camp was identified, but was too remote for ground forces to reach and in the end only one of a planned three Spitfire attacks could happen due to low cloud.<sup>465</sup>

However, this type of operation did not last, and it was quickly realized that the effect of offensive air strikes went beyond merely killing terrorists. In a memo to the Cabinet on the situation in Malaya, the Secretary of State for Colonies would state in 1955 that:

The continued use of a bomber and ground attack force is essential, for the purpose of keeping the terrorists on the move, disrupting their organisation and lowering their morale by creating a general sense of insecurity.<sup>466</sup>

It was this 'general sense of insecurity' that it was hoped area attacks would instil. Avro Lincoln aircraft would be used extensively in area bombing sorties, see Photo 14.

A typical area attack was a well-coordinated strategy to blanket an area known to be occupied by CTs to unsettle and dislocate the enemy. The Avro Lincoln pictured above, was the key heavy bomber asset utilised in theatre for these types of operations. The approach for such an attack would follow a proscribed format:

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<sup>464</sup> Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), p. 327

<sup>465</sup> 'Operations in Malaya: reports', TNA, AIR 23/8443, March 1949 - February 1951, operation 29 April 1949

<sup>466</sup> TNA, CAB, 129/74/44, 06 April 1955

[...] the area to be attacked was first bombed by medium bombers using 500lb or 1,000lb bombs. This strike, of perhaps six to ten aircraft, would be followed immediately by fighters using lighter bombs, rockets and guns. [...] Raids would then be followed by Sunderlands dropping fragmentation bombs over the next 24-48 hours to keep the CT in a state of shock and to inhibit the removal of the wounded.<sup>467</sup>

**Photo 14 – Avro Lincoln of No 1 Squadron, RAAF, August 1950**

One of the first Avro Lincoln aircraft to set off from Tengah, Singapore on a bombing operation to inaugurate No 1 Squadron's anti-bandit activities in Malaya, revving up its engines before taxiing out to the runway.



**Source** – Imperial War Museum, GOV 2667

The effectiveness of these area attacks is hard to discern. The evidence suggests that in some instances the area bombing proved ‘terribly frightening’ to the CTs on the ground, in other instances the bombing, although intense at times, would appear to

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<sup>467</sup> Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), p. 329

have had little or no impact.<sup>468</sup> One CT having withstood three days of bombing stated that it had little impact and in fact most of the bombs had exploded in the tree tops.<sup>469</sup> Even in Malaya the effectiveness of area bombing was an ongoing debate. General Briggs believed that the effectiveness was based on the effect on CT morale, as opposed to any destructive power. This opinion led him to argue that a reduction in the number of aircraft being used on operations would have little impact, this was an opinion the RAF found to be abhorrent.<sup>470</sup>

As the Emergency evolved from 1948 through to 1960, the reliance on pin point air strike operations dwindled. This was for several reasons. Firstly, in the early months of the Emergency the CTs did not fully appreciate the impact of airpower and thus at times presented targets of opportunity to the RAF. Later they would become very adept at dispersal and camouflage, thus making target acquisition and identification very difficult for strike aircraft. The second reason is that British forces were very successful against the CTs, thus the number of targets in the field dwindled as CT casualties mounted. This is ably demonstrated with an analysis of the loss of life during the emergency presented in figure 11 below.

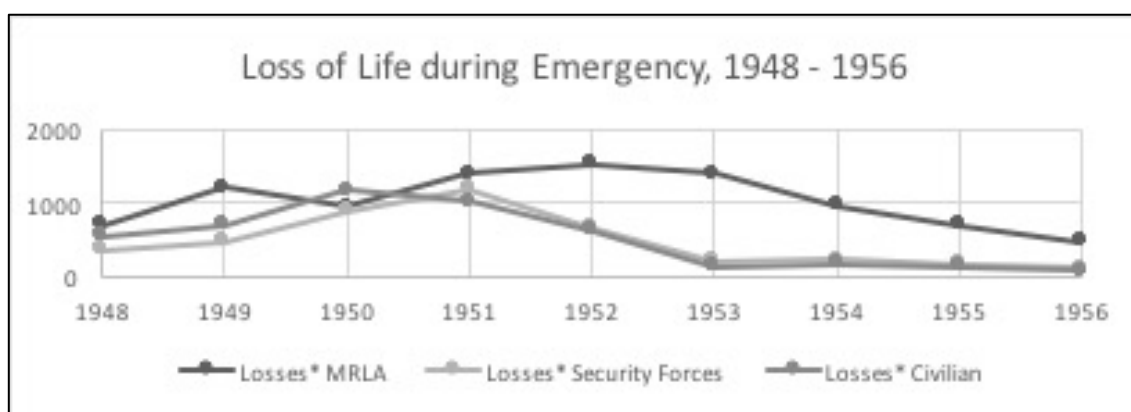
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<sup>468</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, Briggs paper of 22 December 1950.

<sup>469</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, extract from bandit statement

<sup>470</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, draft letter from AOC Mellersh to General Briggs, 28 December 1950

**Figure 13 - Loss of life during the Emergency, 1948-56**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

Although from 1952 there is a downward trend in deaths across the MRLA, security forces and civilians, the losses by the MRLA were significantly higher than that of the other two groups. Thus, there were fewer CTs to target as the Emergency progressed, also they were more dispersed, and these two factors obviously led to a decrease in the efficiency and effectiveness of air strike operations. As air strike operations reduced, the counterpoint was a significant increase in air mobility operations, this is particularly apparent from 1954 onwards (see figure 12, below).

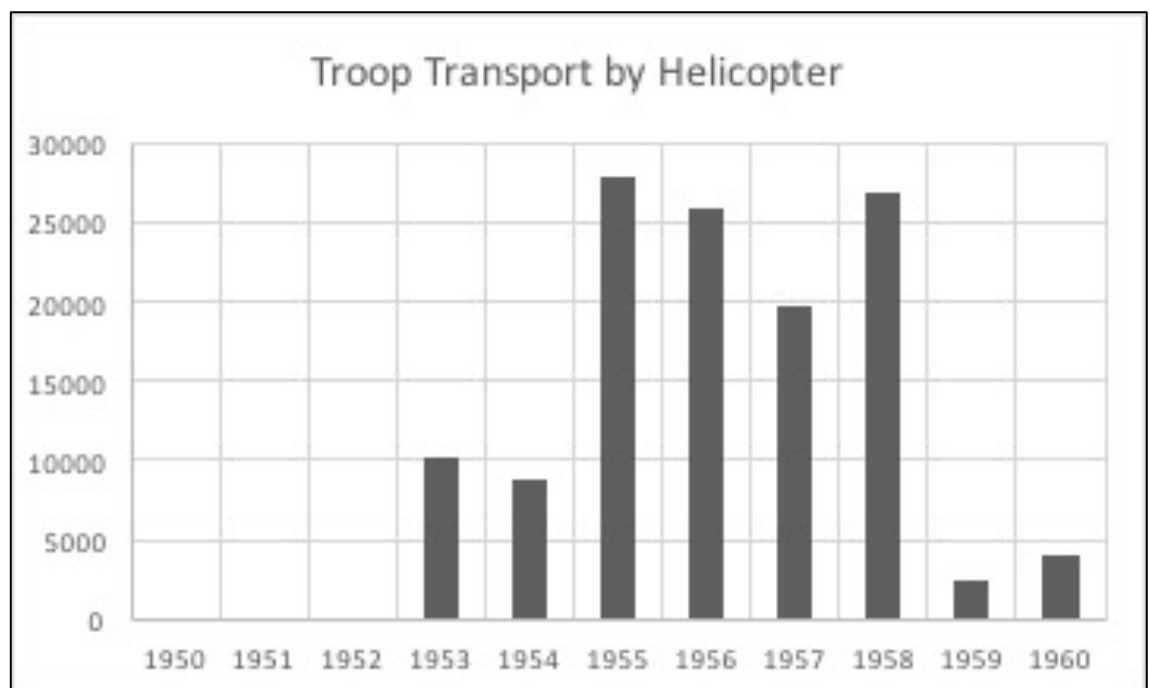
The ability of airpower in Malaya to transport troops into and around operational zones was one of airpower's significant contributions to the Emergency. The importance of this role was clear as early as 1946, when RAF Group Captain G. Barnett prophetically stated that:

Since the essence of occupation is the presence of troops in the country, it is probably that the greatest contribution which the air force can make is to carry the Army around the country [...] If, in addition to being carried by air, the ground forces can also be maintained by air, the

whole problem of control is greatly simplified.<sup>475</sup>

This ability to move men and material around the operational zone was greatly enhanced with the introduction of helicopters in the early 1950s. Although they were very expensive, and difficult to maintain, their growing importance is aptly demonstrated in figure 12.

**Figure 14 – Number of Troops transported by helicopter in Malaya, 1950-60**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

The growth in troop transport by helicopters in the period from 1954 to 1955 is marked, rising from just under 10,000 troops per annum, to close to 30,000 a year later. A figure of 20,000 troops plus moved per annum by helicopter would be maintained until the winding down of the Emergency from 1958 to 1960. This

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<sup>475</sup> Group Captain . G. Barnett, 'The role of the Royal Air Force in the preservation of peace', in *RUSI* (February-November 1946), pp 77-9



drastic increase in helicopter operations is a direct result of the influence that they had in 1953. Speaking in May 1954 this influence was recognized by Brigadier General K.R Brazier-Creagh:

In this type of warfare, the initiative tends to remain with the enemy [...] [However] the initiative is being wrested from the terrorist by relentless hunting, by improved security, and by increased mobility. In the last, the advent of the helicopter has considerably strengthened our hand.<sup>476</sup>

This ability that the helicopter enabled, supported the wider operational and strategic goals encapsulated in the Briggs Plan, it allowed British troops to operate in small force units, and to be supported in the field for considerable periods of time.<sup>477</sup> Troops could be inserted in small jungle clearings, as seen in photo 15 below, and then supported thereafter by supply drops. At times these patrols could remain in the jungle for two months or more.<sup>478</sup> Helicopter operations grew in importance as the Emergency progressed, in 1956 it was also proposed that Westland Whirlwind helicopters of 155 Squadron should be used to drop parachute troops into the jungles of Malaya, however in the main the operations involved mobility, reconnaissance, casualty evacuation and search and rescue.<sup>479</sup>

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<sup>476</sup> Brigadier General K. R. Brazier-Creagh, 'Malaya', in *RUSI* (May, 1954), p. 179.

<sup>477</sup> 'Operations in Malaya: reports', TNA, AIR 23/8443, March 1949 - February 1951, report on Operation Lemon

<sup>478</sup> HC Deb 21 March 1950 vol 472 cc1765-822, 1780

<sup>479</sup> *The Times* (London, England), Jun 15, 1956, p. 10

### Photo 15 - Air mobility in Malaya, ND

Gurkha's disembark from a Sikorsky Whirlwind HAR.21, WV192 'D', of No 848 Naval Air Squadron, Fleet Air Arm, at a jungle-landing zone, ND.



Source: Imperial War Museum, HU 90443

The ability to support these types of operations was not only enabled using helicopters, but also by aircraft capable of short take-offs and landings. Aircraft, such as the Auster AOP9 and Scottish Aviation's Pioneer, could operate from landing strips of minimal length, the Pioneer required only 225 feet of runway to take off. However, these types of operations were not without danger to the pilots. On the 23 May 1956 for example, Sergeant K. G. McConnell of 656 Air Observation Post Squadron went missing while on a routine mission from Ipoh to Kuala Lumpur, he would be found safe and well by aborigines, but not until he had spent three weeks in the jungle.<sup>480</sup> Despite the danger, a network of landing strips was vital to the conduct of operations, as prior to the Emergency, Malaya had only 17 airstrips.<sup>481</sup> Following the start of the Emergency a construction programme began to

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<sup>480</sup> *The Times* (London, England), Jun 15, 1956, p. 10

<sup>481</sup> Gordon Jay Simpson, 'Not by bombs alone, lessons from Malaya', in *Joint Forces Quarterly*, (Summer, 1999), pp 91-8

address this, and as a result a network of major, minor and remote airstrips were constructed.<sup>482</sup> As part of the Briggs Plan jungle forts were constructed in remote areas and typically Pioneer aircraft, similar to that shown in photo 16, made this strategy possible by supplying these forts through the use of nearby remote landing strips.

**Photo 16 - Scottish Aviation Pioneer in Malaya, ND**

A Senoi guard armed with a blowpipe on guard beside a Scottish Aviation Pioneer aircraft at Fort Kemar in the central mountain range of Malaya. Such forts protected the local population from raids by communist guerillas and also provided forward bases for British operations.



**Source:** Imperial War Museum, MAL 45

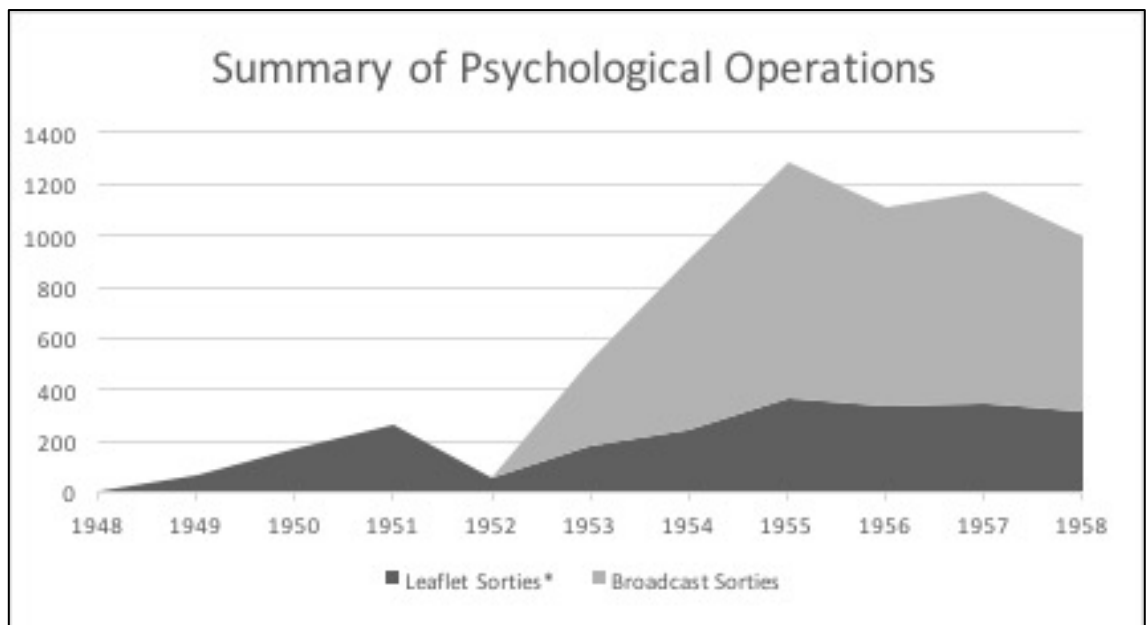
Undoubtedly one of the key roles of airpower in Malaya was in relation to psychological warfare operations. As can be seen in the analysis of psychological warfare operations contained in figure 13 below, after 1952 the increase in this type

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<sup>482</sup> Norman J. Brozenick Jnr., *Small wars, big stakes: coercion, persuasion, and airpower in counterrevolutionary war* (thesis, Air University, Alabama, 1998), p. 122

of operation was very marked. The purpose of these operations was very simple, ‘the main aims of the ‘war of words’ that was inaugurated during the Malayan campaign were to induce surrenders amongst the terrorists’.<sup>483</sup> The Royal Air Force were but one of several ways in which to deliver these messages, however they were a significant one. The operations carried out by the RAF fell into two broad categories, leaflet sorties, and broadcast sorties.

**Figure 15 – No. of Psychological Operations in Malaya, 1948-58**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

Leaflet drops were typically made by aircraft of the medium transport force; Valettas or Dakotas (see photo 18, below). These aircraft could carry loads of up to 800,000 leaflets, and upon dropping it was found that they could achieve coverage of an area

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<sup>483</sup> 'The Royal Air Force's contribution to the psychological warfare campaign throughout the Malayan Emergency', chapter 4, TNA AIR 41/83

1,000 yards square, this was achieved by dropping leaflets in bundles of 5,000.<sup>484</sup>

The scale of the leaflet dropping operation was quite staggering, in June 1951, 2,250,000 leaflets were dropped in support of 'Operation Warbler' in Johore.<sup>485</sup> By the end of the Emergency the RAF had dropped 500 million leaflets. As the Emergency progressed the importance of Psychological Warfare operations increased, this was highlighted in a House of Lords debate on the situation in Malaya, when the Earl of Munster stated:

[...] psychological warfare is playing an increasingly large part in the present operations in Malaya. The object is to persuade those who wish to surrender that they will not be ill-treated, and to explain to them how to surrender, either individually or by units. A special operational force was formed last year in which surrendered terrorists can enlist if they wish to do so.<sup>486</sup>

The contents of the leaflets varied greatly. Some were generic and offered medical assistance or safe passage. Others were very specific, these could be pleas from former colleagues for remaining CTs in an area to surrender, or even messages about family members who wanted their relatives in the jungle to come home. A selection of leaflets from the Malayan Emergency is shown below in Photo 17 for illustrative purposes.

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<sup>484</sup> 'The Royal Air Force's contribution to the psychological warfare campaign throughout the Malayan Emergency', chapter 4, TNA AIR 41/83

<sup>485</sup> Ibid.

<sup>486</sup> HL Deb 10 March 1954 vol 186 cc231-80, 276

**Photo 17 – Malayan Propaganda Leaflets**

Clockwise from top left.

- 3135/HPWS/4 – A leaflet promising medical help
- 4786/HPWS/181 – Safe conduct pass, 1958
- No. 459, Rewards for the capture of Communist Terrorists
- No. 352C, You will be well treated



கேள்வி: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?

பாட்டு: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?

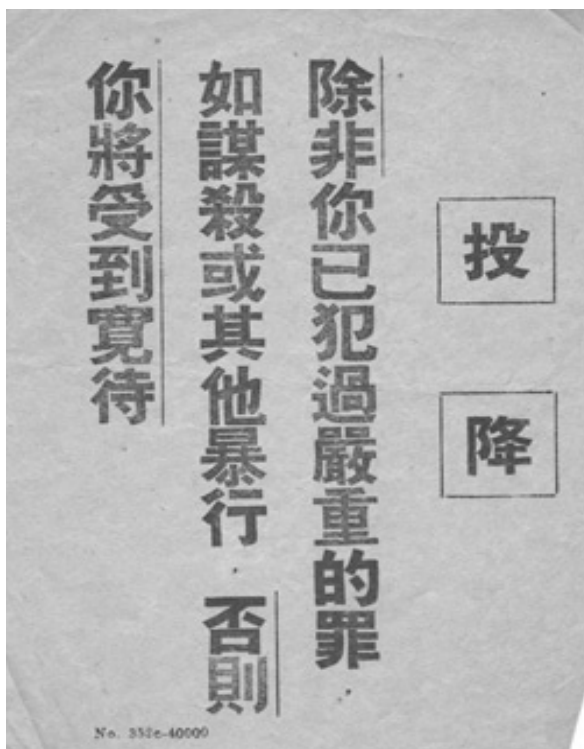
கேள்வி: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?

பாட்டு: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?

MEMBERS OF THE FRONTLINE	செலாவட்டம் உறுப்பினர்கள்	\$ 20,000
MEMBERS OF THE CENTRAL OR WORK CENTER OR DISTRICT HEADQUARTERS	மைய அலுவலகம் அல்லது மாவட்ட அலுவலகம் உறுப்பினர்கள்	\$ 20,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 15,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 10,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 7,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 5,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 3,000
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 2,500
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 1,500
LEADER COMMITTEE MEMBERS (WORKING COMMITTEE MEMBERS)	குழுத் தலைவர் (உழைப்பு குழுத் தலைவர்)	\$ 1,000

கேள்வி: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?

பாட்டு: சிவசுவாமி அரண்மனைக்கு என்ன செய்தி? என்ன செய்தி? என்ன செய்தி?



Source: Psywar leaflet archive, available at <https://www.psywar.org/apdsearch.php?cf=1948>

**Photo 18 - Leaflet drop in Malaya, ND**

Royal Air Force personnel secure boxes of information leaflets inside a transport aircraft. Such leaflets, produced in four languages, were dropped over remote rural areas of Malaya to inform the local inhabitants of the activities of Communist Terrorists (CTs).



Source: Imperial War Museum, DM 112

The second type of psychological warfare operation carried out by the RAF was broadcast or loud hailing sorties. These involved Dakota aircraft (see photo 19 below) that were fitted with four externally mounted tannoy speakers. Initially Gerard Templer, British High Commissioner of Malaya, secured the loan of a US Dakota aircraft for this purpose.<sup>487</sup> These aircraft flew at between 2,500 and 3,000 feet and this allowed the broadcast messages to be heard for 2,500 yards below and to the port side of the aircraft.<sup>488</sup> In photo 19 the tannoy speakers can be clearly seen mounted on the undercarriage. After the success of trials the RAF proceeded to equip two Valetta aircraft with loud hailing equipment, these Valettas were operational by early 1953.<sup>489</sup>

What was crucial to the success of broadcast sorties was the speed with which the police and the air forces could respond to developments on the ground. Broadcast messages were not always generic, quite a lot of the time they targeted specific CTs and referenced specific incidents, thus making them much more relevant and powerful. Requests for broadcast sorties could be actioned in less than 24 hours. To aid in the speed with which these sorties could be mounted, Austers were converted to loud hailing aircraft, and could be scrambled at short notice.<sup>490</sup> One analysis suggests that by 1955 some 70% of all surrendered CTs had been influenced by the 'sky-shouters'.<sup>491</sup>

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<sup>487</sup> 'RAF operations in Malaya, 5<sup>th</sup> report, Feb-Dec 1952', TNA, AIR23/8696, p. 6

<sup>488</sup> Malcolm R. Postgate, *Operation firedog, air support in the Malayan Emergency 1948-1960* (London, 1992), p. 116

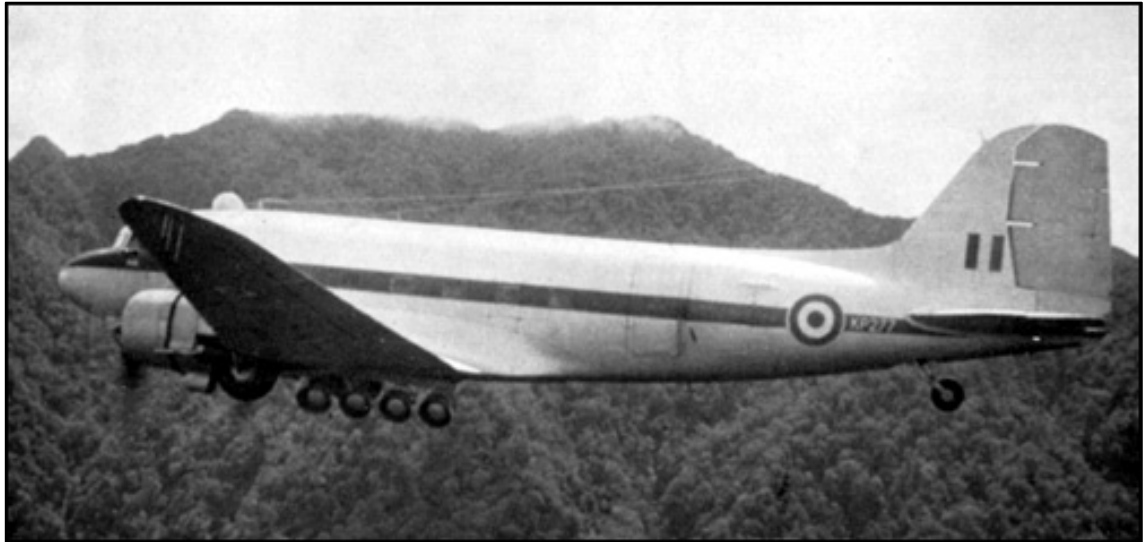
<sup>489</sup> 'RAF operations in Malaya, 5<sup>th</sup> report, feb-dec 1952', TNA, AIR23/8696, p. 6

<sup>490</sup> Malcolm R. Postgate, *Operation firedog, air support in the Malayan Emergency 1948-1960* (London, 1992), p. 115

<sup>491</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 91.



**Photo 19 – Loudspeaker Dakota, ND**



**Source:** <https://www.psywar.org/malaya.php>, accessed 16 October 2016

One example of the effectiveness of psychological operations is demonstrated through a quote from a surrendered CT:

After the attack on our cultivation area we fled to another area where we saw many Government propaganda leaflets and safe conduct passes. I picked up some of the leaflets intending to use them when coming out to surrender. A few days later we heard voices coming from an aeroplane calling on us all to surrender and offering good treatment. We all agreed to this suggestion.<sup>492</sup>

Other instances of the success of psychological operations includes the instance of Wei Keiong, a Platoon Commander in Selongor who attributed his surrender to radio broadcasts and surrender leaflets.<sup>493</sup> Furthermore, during a test flight of loud hailing aircraft, a guerrilla section commander, Wong Lo, surrendered.<sup>494</sup> These instances

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<sup>492</sup> 'The Royal Air Force's contribution to the psychological warfare campaign throughout the Malayan Emergency', chapter 4, TNA AIR 41/83

<sup>493</sup> 'Aircraft loud hailer trials: reports, memoranda etc', TNA, AIR 23/8558, October 1952 - July 1953

<sup>494</sup> 'Review of air operations (Malaya): Chief of Air Staff's reports', TNA, AIR 23/8553, January - December 1952, reports for July to September 1952

need to be viewed in light of the RAF's obvious motivation to portray the success of psychological operations, however it is interesting to note the frequency that surrendered CTs referenced loud hailing and leafleting as contributory factors in their decision to surrender. It was reported that one leaflet, no. 256, led to the surrender of 207 terrorists.<sup>495</sup>

Having reviewed the operations conducted during the Malayan Emergency, this work now turns to look at how, if at all, these operations were mirrored in the RAF operations in Kenya. It is also beneficial to provide a brief overview of other colonial operations the British were engaged in during the post war period.

### ***Other Colonial Operations***

As mentioned earlier, in the immediate post war period, the British government faced many challenges in reasserting its control on colonial possessions, while also dealing with a rising tide of nationalism in its colonies. This section provides a high-level overview of those engagements, the first in Oman.

#### **Oman**

Oman represented a significant area of influence for the British government. Due to its withdrawal from Iraq in the 1950s this became even more important due to the significance of middle eastern oil to the postwar economy. The challenges that

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<sup>495</sup> Wing Commander Bryan J. Hunt, 'Air Power and Psychological Warfare Operations, Malaya 1948-1960', in *Air Power Review*, vol. 11, no. 1 (Spring, 2008), pp 6-19, p. 11

British forces faced in Oman in the 1950s were significant. As was the case in Transjordan, Oman was a desolate and inhospitable place, but more challenging was the fact that the British had to deal with foreign powers, namely Saudi Arabia and South Yemen, who supported Omani insurgents and provided them with supplies and shelter. While the operations in Oman mainly involved ground forces, on occasion the RAF were tasked with specific objectives. When a rebel force landed near Muscat and seized control of an area the RAF were called into to provide an immediate reaction. The engagement involved ground attack operations, but interestingly it also involved operations whereby the RAF would ‘mount regular patrols to deter rebel movement during the hours of daylight’, so called proscription operations.<sup>496</sup>

Oman displayed quite a few similarities to other British air operations during this period, including the use of leafleting and loud hailing for psychological warfare. Leafleting in particular was extensively used, both to provide ultimatums, but also to deliver propaganda messages.<sup>497</sup> One area that was new, was the use of special forces in conjunction with the RAF. It was ultimately a SAS led ground operation, with RAF support, that ended the insurgency in early 1959. Another interesting facet of the operations in Oman was the fact that the British never committed significant ground forces to the theatre, rather the manpower for the ground campaign were local forces, and these were supported by special forces and the RAF. This is an approach that we have seen repeated in more recent counterinsurgency campaigns in Libya and Iraq.

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<sup>496</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011), p. 50

<sup>497</sup> *The Times* (London, England), July 24, 1957, p. 8

## Aden

RAF operations in Aden in the post war period were significantly different to the operations carried out in Aden in the interwar period. With Aden's economic growth in the post war period came an influx of migrant workers, these workers would be at the centre of unrest that would ultimately lead to the withdrawal of the UK.

Sebastian Ritchie has identified three groups at the heart of the disturbances; radicalised groups from Aden and Yemen, as well as rebel tribal factions from the protectorates.<sup>498</sup> Although RAF forces were deployed in roles familiar in the Air Control era, like proscription bombing, reconnaissance and mobility, they also performed patrols to deter Yemeni men and supplies from crossing the border, as well as interdiction on these supply routes.<sup>499</sup> The effectiveness of the older air control approaches in Aden in the postwar period are questionable. As Spencer Mawby has argued:

The inefficiency of proscription [bombing] in this instance was demonstrated not only by the loss of life and the destruction of crops but also by the failure to make any real progress with pacification.

Mawby concludes that air action alone was unable to deliver on the promise of pacification of the tribal hinterlands, and it was not until a combined operation, utilising the Aden Protectorate Levies, that the rebels were expelled from the region.<sup>500</sup>

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<sup>498</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011), p. 78

<sup>499</sup> *Ibid.*, 79

<sup>500</sup> Spencer Mawby, *British policy in Aden and the Protectorates 1955-67* (London; New York, 2005), pp 84-5

Ultimately the British Government decided that reform in Yemen was inevitable, however in order to enact this and to ensure its survival, the British had to eliminate radical elements from Yemen, thus an intense counterinsurgency campaign was launched in April 1959, and would last for eight years, until the final withdrawal of British forces in 1967.

Operations in Aden evolved over this nine year period and as a result the tasks that the RAF were being asked to perform naturally changed. The conflict itself became more and more characterised by urban terrorism and as such the RAF played an increasingly marginal role. The Air Control approach, utilised in the late fifties to questionable effect, gave way to a more joint approach where the RAF performed a supporting role. Due to this in 1964 command responsibility for British forces in Aden transferred from the RAF, who had maintained command responsibility in Aden for three decades, to the Army.<sup>501</sup> Thus marked an evolution away from an airpower first approach, to one which emphasized ground force operations, with airpower in a supporting role. During the mid-1960s the RAF sortie rates in Aden were staggering, particularly due to the small number of aircraft stationed there, these high sortie rates were delivered to support ground operations in the Radfan region.<sup>502</sup> To illustrate the high intensity of operations the following table shows the sorties flown by strike aircraft from Khormaksar in March 1965:

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<sup>501</sup> Bruce Hoffman, *British air power in peripheral conflict, 1919-1976* (RAND Corporation, 1989), p. 88

<sup>502</sup> Sir David Lee, *Flight from the Middle East* (London, 1980), p. 218

**Table 3 - Aden, Strike Sorties from Khormaksar, March 1965**

<b>Aircraft type</b>	<b>Allocation</b>	<b>Hours flown</b>
<b>Hunter FGA.9</b>	25	662.35
<b>Hunter FR.10</b>	5	116.40
<b>Hunter T.7</b>	3	78.25
<b>Shackleton MR.2</b>	4	190.00
<b>Total flying hours</b>		<b>1,047.40</b>

Source – <http://www.radfanhunters.co.uk/Ksar-1965.htm> (accessed 01 September 2018)

However, as the nature of the conflict changed thus this requirement would dissipate. There is considerable debate as to the success of RAF operations in Aden, indeed all operations in Aden during this period. In one instance the UN condemned RAF operations in the Radfan region for being indiscriminate, in particular a raid on Harib Fort, inside Yemen. Also, in what would be a pointer of challenges in deploying airpower in modern counterinsurgency campaigns, the rebel groups in Aden were quick to highlight and sensationalise casualties from RAF bombing raids. This was to make Whitehall wary of further operations, particularly any that could be deemed indiscriminate.<sup>503</sup>

However, once again we see how airpower acted as a key enabler of ground force operations, in his book on this period in Aden, Julian Paget argues:

The RAF strike aircraft were superb, brilliantly handled and always on the spot within minutes. The closest liaison was established with the ground forces, who had complete confidence in the air support provided.<sup>504</sup>

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<sup>503</sup> Spencer Mawby, *British policy in Aden and the Protectorates 1955-67* (London; New York, 2005), pp 103-4

<sup>504</sup> Julien Paget, *The last post, Aden 1964-1970* (London, 1969), p. 106

## Cyprus

Cyprus represented a very different challenge to Malaya or Oman. The insurgency was borne from a failed movement by the Greek majority to instigate a scenario where ultimately Cyprus would become part of Greece. The insurgent's ire was directed squarely at the British government, military and police forces, and resulted in the death of 153 security force personnel between 1955 and 1959.<sup>506</sup>

Due to the nature of operations and the scale of the opposition (estimated at some 300 fighters), the RAF role in Cyprus was limited to support operations, mainly reconnaissance and interdiction of supplies, both at sea and in the air. The bulk of RAF operations in Cyprus would rely on rotary wing aircraft, as was demonstrated in other theatres, helicopters proved invaluable in environments where they could offer rapidity of operations, flexibility and mobility. The tasks performed are best understood when one analyses a typical month's operations for the helicopter force. In Cyprus, this consisted of: '70 reconnaissance flights, 214 troop sorties (449 troops) 407 supply drops (78,000lb), 697 communications sorties (961 passengers), 12 casualty evacuations and two sorties for the governor'.<sup>507</sup>

RAF operations in Cyprus can be characterized as ground support operations in the main, and involved mainly reconnaissance and mobility sorties, however this represented a key enabler of ground force operations, and made a significant

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<sup>506</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011), p. 64

<sup>507</sup> *Ibid.*, p. 75

contribution to the cessation of hostilities in 1959. In Kenya, the RAF would be tasked with a much broader operational role.

## **Kenya**

Unrest in Kenya was borne from a strategy of the settlement of white farmers in what was previously local farming land. Many local farmers believed that they had been cheated out of their land and that the responsibility for this lay with the white farmers themselves and also the British government officials who sanctioned this activity. At the centre of the unrest was the members of the Kikuyu tribe, who felt that their land had been particularly targeted.

During the Second World War the Kikuyu Central Association was banned due to the organization's political activities. After the Second World War the Kenya African Union (KAU) was formed and from this sprang the extremist Mau Mau organization. The authorities believed at the time that the KAU was the political wing of the increasingly extremist Mau Mau movement.<sup>508</sup> The core of the movement was the Kikuyu tribe, an immensely religious tribe whose spiritual and cultural life centred around the taking of oaths, these oaths included initiation and oaths of loyalty.<sup>509</sup> Initially the unrest revolved around agitation for land rights and the reclamation of tribal land that had been taken over by white settlers. By 1952 however, the unrest had spread, and between May and October of that year fifty-nine

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<sup>508</sup> 'Letter from the member of law and order', TNA, CO/822/437, Nairobi, 03 September 1952

<sup>509</sup> Sir David Lee, *Flight from the Middle East* (London, 1980), p. 59; for a fuller understanding of Kikuyu oaths see, Robert W. Blunt, 'Kenyatta's lament, oaths and the transformation of ritual ideologies in colonial Kenya', in *Journal of Ethnographic Theory*, vol. 3, no. 3 (2013)



Africans loyal to the government were murdered, including one of the key loyalist Chiefs.<sup>510</sup>

**Photo 20 – Sir Evelyn Baring**

The Governor of Kenya, Sir Evelyn Baring, inspects troops of the King's African Rifles during a ceremony to present them with new colours, 1957. Sir Evelyn Baring declared the State of Emergency in October 1952.



**Source** – Imperial War Museum, MAU 240

Sir Evelyn Baring the Governor of Kenya, reported to London that the situation required the declaration of an Emergency, this was duly enacted in October 1952. The Emergency came as no surprise to the authorities, as early as 1950 the security forces were already preparing for the requirement to liaise more closely with the

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<sup>510</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 98

Kenyan police in the event of such a situation.<sup>511</sup> As a result of the declaration of a state of Emergency the authorities sent for reinforcements, this initially entailed the dispatch of an additional infantry brigade.<sup>512</sup> By April 1953, the Emergency had already cost an estimated £1 million pounds to the authorities and was running at a monthly outlay in the region of £250,000.<sup>513</sup>

Kenya offered a very different type of environment than that of Malaya. Kenya was a vast country; however, operations were focused on two specific areas; Mount Kenya and the Aberdare Range (see Map 2). These two areas offered a combination of challenges for the RAF, the first was altitude, and the second was the thick forest canopy that carpeted a significant part of the area of operations. Initially there had been an element of urban operations that the security forces had to deal with, however after a crackdown on Mau Mau in Nairobi in April 1954, the remaining Mau Mau retreated to Mount Kenya and the Aberdare Range. Until the end of the Emergency this would constitute the area of operations for both land and air security forces.

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<sup>511</sup> 'Kenya emergency scheme', TNA, WO 27/106, 01 March 1950

<sup>512</sup> HL Deb 15 April 1953 vol 181 cc733-819, 739

<sup>513</sup> HC Deb 06 May 1953 vol 515 cc370-1, 370

This concentration of operations allowed the RAF to operate at a high intensity level, with what was a very meagre force. This intensity is demonstrated by the following analysis of sortie numbers by aircraft during 1954:

**Table 4 - Kenya, Sortie Numbers by Aircraft Type, 1954**

<b>Aircraft</b>	<b>No. of Sorties</b>
<b>Lincoln</b>	1,118
<b>Harvard</b>	3,316
<b>Kenya Reserve Police Air Wing</b>	1,309
<b>Total</b>	5,743

**Source** – All analysis by the author, data taken from 'Kenya Emergency: report by General Erskine, 25 April 1955', TNA, WO 236/18

One of the key differences from operations in Malaya, and elsewhere in the Empire at this time, was a distinct lack of RAF resources and access to reinforcements. This sparsity of resources was also reflected in the allocation of troops to the region, with commitments increasing in Malaya and the Middle East, there was pressure building elsewhere that was deemed of a higher priority.<sup>514</sup>

### Operations

The type of RAF operations conducted during the Emergency in Kenya were very like those conducted in Malaya and elsewhere during this period. Furthermore, the operations in Malaya undoubtedly influenced tactics utilised in Kenya.<sup>515</sup>

Manoeuvres entailed ground support operations, air strike operations, mobility

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<sup>514</sup> 'War Office to East Africa Command', TNA, WO 216/811, 03 November 1952

<sup>515</sup> Andrew Mumford and Caroline Kennedy-Pipe, 'Unnecessary or unsung? The strategic role of air power in Britain's colonial counterinsurgencies', in Joel S. A. Hayward (ed.), *Air power, insurgency and the 'war on terror'* (Cranwell, UK, 2009), p. 73

operations and psychological warfare operations. One of the key differences in the conduct of these operations in Kenya, as opposed to Malaya, was the resources that the RAF had available to carry out these missions. When the Emergency was declared in October 1952 the RAF had at its disposal six aircraft, part of a communication flight based at Eastleigh. However, two significant developments in the coming months would increase the aircraft available. Firstly, with the disbandment of the Rhodesian Air Training Group (RATG) it was decided to transfer several of its *Harvard IIIBs* to Kenya, these were formed into 1340 Flight and transferred to Eastleigh in March 1953. Secondly the Kenya Police Reserve Air Wing (KPRAW) had several light aircraft, including; Austers, Piper Pacers and Tri-Pacers, these proved a valuable addition to the inventory.<sup>516</sup> Members of the KPRAW are shown in Photo 21, below. These aircraft would be supplemented from November 1953 by the rotation of Lincoln bombers to Kenya, these bombers would play a significant role in the Emergency in the coming years.

RAF operations focused on two specific geographic areas, the Aberdare Range and Mount Kenya (see Map 2 – Kenya, Areas of Operations, below). These areas were up to 12,000 feet and 17,000 feet respectively. Operating at these altitudes the pilots faced several challenges, particularly those piloting the smaller light aircraft, as above 7,000 feet these aircraft struggled to perform. However, it was found that lightly-loaded Cessnas and Tri-Pacers of the KPRAW could perform well at these altitudes and they were duly utilized. Another advantage the KPRAW had over its RAF colleagues was the fact that their pilots were intimately familiar with the

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<sup>516</sup> Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), p. 141

geography and so could use local knowledge to help them climb up through the mountain ranges effectively and safely.

**Photo 21 – KPRAW Pilots, 1954**

Pilots of the KPRAW, photographed at Mweiga: (L to R) Ian Munro, Bill Jones, "Punch" Bearcroft, Pakenham Walsh and Robin Lindsay



**Source** – Flight Magazine, 12 November 1954, p. 710

The pilots of the KPRAW became a key component of the air forces that could be deployed. It was originally formed in 1948 and had been involved in the Emergency since its beginning, by 1954 it had seventeen full-time pilots and eight part-timers. These pilots operated a fleet of light aircraft including; ten Piper Tri-Pacers, a Cessna 180, and a Chipmunk. By 1954 the KPRAW was delivering 500-600 flight hours a month out of a total of approximately 1,000 flown.<sup>517</sup>

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<sup>517</sup> Robert J. Blackburn, 'Aircraft versus Mau Mau', in *Flight Magazine*, 12 November (1954), pp 707-8

Along with altitude, another challenge was the dense forest. The thickness of the forest canopy caused several challenges for both air and ground forces.<sup>518</sup> In the first instance it allowed the Mau Mau to easily stay hidden from overhead aircraft thus making it extremely difficult for strike aircraft to find, fix and attack targets.

Secondly the thick canopy made it difficult for the light aircraft to locate ground troops that they had been sent to support and supply, invariably this was overcome by ground forces guiding the aircraft to their location via walky-talky. This was achieved by aircraft flying to a pre-arranged location and then being guided to the troops based on the ground forces listening for the aircrafts engine sounds.<sup>519</sup>

The British military in Kenya believed that the use of airpower greatly enhanced their ability to target Mau Mau within the forests, which would have proved operationally challenging to engage solely with a ground force:

While ground forces are being primarily directed against targets in the Reserves, heavy bombers and Harvard's represent the chief weapon in our hands for attacking terrorists in the forest.<sup>520</sup>

Knowing that the bulk of the targets were within the Aberdare Range and Mount Kenya, the government made these areas prohibited zones and anybody caught within them were subject to attack without warning.<sup>521</sup> While this may seem extreme, the counter to this was that RAF forces were not allowed to conduct

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<sup>518</sup> Chappell, Stephen, 'Air power in the Mau Mau conflict', in *The RUSI Journal*, 2011, volume 156, no. 1, p.66

<sup>519</sup> Robert J. Blackburn, 'Aircraft versus Mau Mau', in *Flight Magazine*, 12 November (1954), p. 708

<sup>520</sup> 'Report on the role of air power in Mau Mau operations', TNA, AIR 2/12668, 14 August 1954

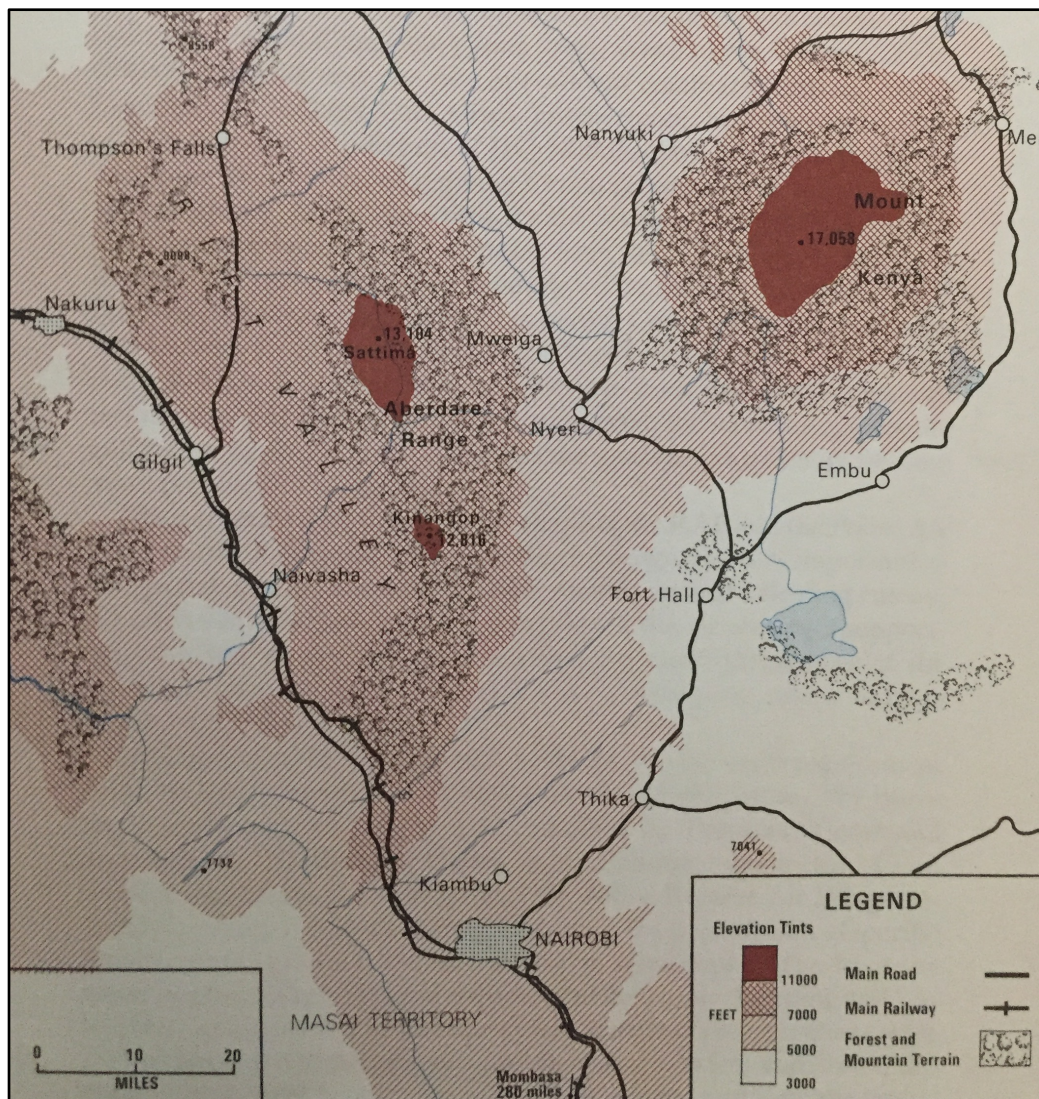
<sup>521</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 100

offensive actions outside of the prohibited areas, this directive was put in place to avoid unnecessary casualties:

[aircraft] will not take armed offensive action against any target outside the prohibited areas. It is emphasized that it is of the greatest importance that our own forces and loyal Africans should not be subjected to offensive action from the air.<sup>522</sup>

The area of operations can be seen in Map 2 below.

**Map 2 – Kenya, Areas of Operations**



Source - Sir David Lee, *Flight from the Middle East* (London, 1980), pp 64-5

<sup>522</sup> 'Royal Air Force bombing raids: emergency directive No. 6', TNA, WO 276/233, 03 May 1953

One of the key tasks of the air force in Kenya was the non-kinetic support of ground forces. This involved several mission types including; resupply, casualty evacuation (casevac) and reconnaissance.

One of the most important missions was the resupply of forces employed in the field. Like operations in Malaya this involved light aircraft dropping supplies to forces who were deployed in forested or mountainous terrain. It was found that the light aircraft of the KPRAW were best equipped to carry out this mission. Typically, these light aircraft would drop supplies from low-level to ground patrols. Furthermore, these light aircraft also used a network of 35 small landing strips, 20 in the Aberdare Range, and 15 close to Mount Kenya, these landing strips were typically sited near ground bases.



## Photo 22 – Supplying Infantry Patrols

Rations are sewn into hessian sack covers to protect the contents from damage when dropped at low level from aircraft to infantry patrols operating in the Aberdare Ranges.



Source - Imperial War Museum, BF 10952

Another key role in Kenya, and one also carried out in Malaya, was the use of aircraft for casualty evacuation (casevac). In Kenya, this was conducted by fixed wing and rotary aircraft. Unlike Malaya, casevac was predominantly carried out by fixed-wing as opposed to rotary aircraft. In fact, rotary aircraft were not favored in Kenya as it was believed that they would be difficult to maintain in the Kenyan climate. It would not be until late 1954 that helicopters were deployed.<sup>523</sup> The Bristol Sycamore, shown in photo 23 below, was a popular helicopter in Kenya.

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<sup>523</sup> 'Evacuation of casualties by helicopter: policy', note by Air Vice Marshall, November 1952, letter of 22 January 1954', TNA, WO 32/13525

### Photo 23 – Bristol Sycamore in Kenya, ND

A Bristol Sycamore helicopter of the Royal Air Force being used for casualty evacuation duty in the forests of Kenya.



Source – Imperial War Museum, MAU 414

Also important in Kenya was the role of reconnaissance. Reconnaissance took several different forms in Kenya, from flights of the KPRAW to more specialized aircraft such as Meteor PR10s. Prior to the arrival of the Meteor PR10s in August 1954, the KPRAW light aircraft were supplemented with modified Lincolns which had been fitted with photo-reconnaissance equipment.<sup>524</sup> Once they arrived in theatre the Meteors worked to perform reconnaissance ahead of bomber strikes by Lincolns that performed area bombing sorties within the Aberdare Range and Mount Kenya.

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<sup>524</sup> Stephen Chappell, 'Air power in the Mau Mau conflict', in *The RUSI Journal*, 2011, volume 156, no. 1, pp 64-70, p. 68

Air strike operations in Kenya were in the main undertaken by two aircraft, the Harvard IIIBs that had been transferred from the Rhodesian Air Training Group, and Lincoln bombers.

The Harvards were fitted with underwing bomb racks (see photo 25, below) that enabled them to operate in an independent strike role as well as supporting ground operations. Over the course of the emergency the Harvard's would bear the brunt of RAF operations, for example, in 1954 the Harvards accounted for 58% of all sorties flown.<sup>525</sup> There were several reasons why the Harvard's were so heavily utilized in Kenya. One reason was that there was a reticence to over use the bomber force due to the potential negative press this could generate. The air force hierarchy in Britain, as well as in headquarters of the Middle East Air Force, warned in 1953 that the use of the Lincoln force in anti-Mau Mau operations could prove to be 'political dynamite'.<sup>526</sup> Steve Biddell argues that in spite of this the Lincoln bomber force had a significant impact in Kenya, with 900 insurgents either killed or wounded between November 1953 and June 1954.<sup>527</sup>

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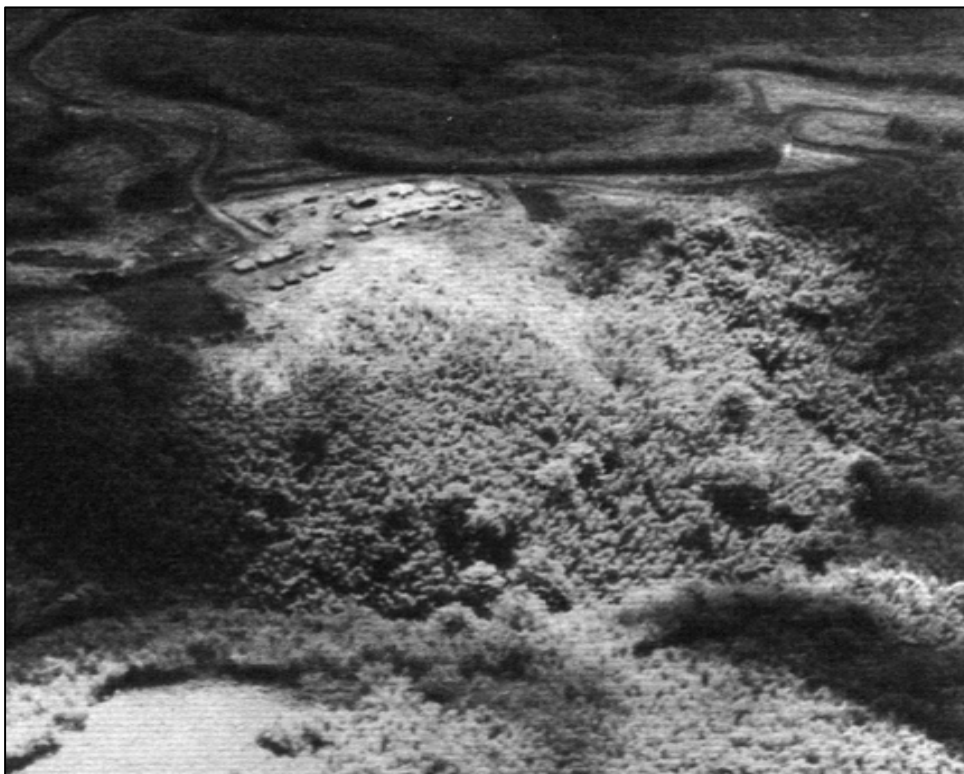
<sup>525</sup> See Table 3 – Kenya, sortie numbers by aircraft type, 1954

<sup>526</sup> Andrew Mumford and Caroline Kennedy-Pipe, 'Unnecessary or unsung? The strategic role of air power in Britain's colonial counter insurgencies', in Hayward, Joel S. A. (ed.), *Air power, insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), p. 74

<sup>527</sup> Wing Commander Steve Chappell, 'Air power in the Mau Mau conflict: the governments chief weapon', in *Royal Air Force Historical Society Journal*, no. 55, pp 25-55, p. 39

**Photo 24 - Kikuyu Reserve and Aberdare Forest Outpost, 1954**

Typical Kenya landscape photographed from the KPRAW's Cessna 180, top image shows the Kikuyu Reserve, the bottom image an isolated Home Guard outpost in the Aberdare Forest (Kenya, 1954)



Source – Flight Magazine, 12 November 1954, p. 708

Another reason for the heavy use of the Harvard force was the availability of offensive aircraft, apart from a fleeting deployment of Vampires, the RAF was stretched with global commitments, particularly in Malaya, and so the RAF in Kenya had to meet their obligations with a force cobbled together.

### **Photo 25 – Harvards in Kenya**

Harvard IIIBs operated in Kenya and were fitted with underwing bomb racks



**Source** - Flight Magazine, 12 November 1954, p. 708-9

Although the RAF were wary of using the Lincoln bomber force, it did eventually begin operations. However, the concern was raised again by the Home Office when it was proposed to use 4,000 pound bombs dropped from the Lincolns.<sup>528</sup> Ultimately the Lincolns would be used extensively in Kenya. In 1954 they would average just under one hundred sorties a month, while this would only represent 19% of all sorties flown, in the context of the type of opponent that the security forces faced, it represents a significant proportion of air strike operations.<sup>529</sup> The efficacy of these

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<sup>528</sup> 'Air operations in Kenya, message from HQ Middle East Land Forces, 15 October 1954', TNA, AIR 8/1886

<sup>529</sup> See Table 3 – Kenya, sortie numbers by aircraft type, 1954

type of bombing operations is always difficult to determine. General Erskine's summary however was unequivocal when he commented on this:

in circumstances of this kind you have to be satisfied with indirect results [...] It is seldom that you can expect actual casualties [...] I am convinced that the air effort prepared the way for ground action<sup>530</sup>

By 1954 the scale and scope of RAF operations in support of the ground forces was significant. The following information from an *Air Operations Order* is enlightening in this regard, by providing a sample of the type of operations that were conducted daily:

**Table 5 - Air Operations Order, 19 February 1954**

Target No	Aircraft Type	Ordnance to be Used	Target Marker	Time on Target	Rendezvous Point	Height of Target (ft)
5	6 Harvards	8x19lb plus strafing per aircraft	No	1400	N/A	9800
1A- 1B	2 Lincolns	10x500lb bombs plus strafing pwe aircraft until 1455	1 Pacer	1430	RZR2735	9200
2A- 2B	2 Lincolns	10x500lb bombs plus strafing per aircraft until 1525	1 Pacer	1500	Gura Waterfall	9800
7A- 7B	2 Lincolns	10x500lb bombs plus strafing per aircraft until 1555	1 Pacer	1530	Sauma Dam	9000
7C	6 Harvards	8x19lb plus strafing per aircraft	No	1600	N/A	9000

**Source** – All analysis by the author, data taken from, 'Mau Mau emergency: joint operations centre air operations order No. 4/54', TNA, WO 276/458, 19 February 1954

However, by May 1955 General Lathbury succeeded Erskine and felt that all of the Lincolns should be withdrawn. The operations had, in Lathbury's view, entered a

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<sup>530</sup> 'Situation in Kenya: reports from GHQ Middle East Land Forces, War office to East African Command, 03 November 1952', TNA, WO 216/811

new phase, one that would rely more heavily on the indirect support of airpower.

This indirect use of airpower in Kenya is illustrated in its use for casualty evacuation and psychological warfare.<sup>531</sup>

Before Erskine would leave Kenya he would write a report that gave a glowing commendation to airpower and its impact on operations in Kenya. Not only had it proved to be a significant enabler of operations, it has also evolved to a significant level of sophistication. He argued that through the use of radar stations that the RAF could carry out bombing 'in all weathers and by day or night over a wide area'.<sup>532</sup>

While these claims may have been a little exaggerated, the fact remained that in a relatively short period of time the RAF had brought together a disparate group of pilots and aircraft and utilised them in an impactful way, as is evidenced in Erskine's report.

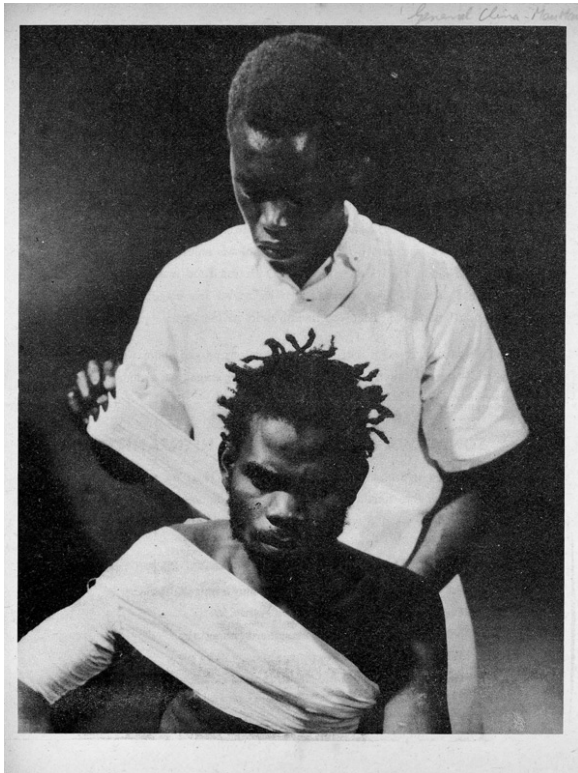
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<sup>531</sup> 'Air operations in Kenya, minute of 19 May 1955', TNA, AIR 8/1886

<sup>532</sup> 'Kenya Emergency: report by General Erskine, 25 April 1955', TNA, WO 236/18

## Photo 26 - Kenyan Propaganda Leaflet, 1954

Mau Mau gang leader General China (Waruhiu Itote) receiving medical attention after his capture by Government forces.



### UTHONDEKANI WA THIBITARI NIUHONOKAGIA MUOYO

#### Mundu uyu Niahonoketie Muoyo wake

**R**IRIA Mbutu cia Thayu ikuratha, irathaga ciurage. Gikuu ti hindi ciothe gikinyaga o rimwe. Ciumia nyingi ciahota kuhituka mundu muguarie atanakua. Marigitari no-o andu aria moi uria muoyo uhonokagio. Thiini wa mutitu gutiri na marigitari. Murimu ni kindu kingi kiuragaga andu. O na tumirimu tutakuoneka turi bata twahota kurehe gikuu tungiaga guthondekwo na ndawa iria ciagiriire ni marigitari maria moi uria ihuthagiruo. Thiini wa mutitu gutiri na marigitari.

Mundu uyu uri mbica-ini aari mutoi. Ndaiguaga urugari thiini wa mutitu, na ndonaga irio kana marigitari. Ndaiguaga heho na ng'aragu, na akaigua ruuo rua nguraro yari kiande.

#### TONDU WA MAUNDU MACIO, NIENEANITE

Umuthi, mundu uyu ni mugima na ari na gikeno. Ugi wa marigitari, na irio njega, na urugari na toro niimucoketie hinya wake. Aturaga atari na guoya.

#### WINEANE RIU

Waikarania na ikundi cia mitu ukuguimwo utagutithirio.

Uginyitwo no ugie ugwati-ini wa guitwo.

NO ungieneana ndungitwo utangikoro uraganite.

Wineane na gwitwara wee mwene ukuite ithigi riigu.

Ungiika uguo no uheo irio na wikwo ciiko cia kihooto.

Source: Psywar leaflet archive, available at [https://www.psywar.org/product\\_1954MAUMAU001.php](https://www.psywar.org/product_1954MAUMAU001.php)



As in Malaya the use of psychological warfare was for persuading anti-government forces that the struggle was futile and that they should surrender. As the Secretary of State for Colonies, Alan Lennox-Boyd, reported to the House of Commons in October 1954:

Three hundred and twenty-nine terrorists surrendered between the end of August, 1953, and the end of August, 1954. Between 1st September and 12th October a further 106 surrendered. The rate of surrender is increasing and the Kenya Government, whose aim is to end the fighting, have always been ready to consider any approach for a mass surrender from gang leaders who are able to influence large numbers of terrorists into surrendering. They are using all possible means to bring this to the notice of the terrorists.<sup>534</sup>

All possible means included the use of psychological warfare tactics that had been trialled and proven to be successful in Malaya. This involved two main tactics; the first being the use of leafleting, and the second the use of loud-hailing aircraft. Leafleting had started as early as 1948, although this was prior to the Emergency, its use to communicate with aggrieved farmers during that time laid a precedent for its use in Kenya. During the Emergency, the use of this approach was significant. In January 1955, the RAF dropped 100,000 leaflets in support of *Operation Hammer*, a further 5 million were dropped in June of that year.<sup>535</sup>

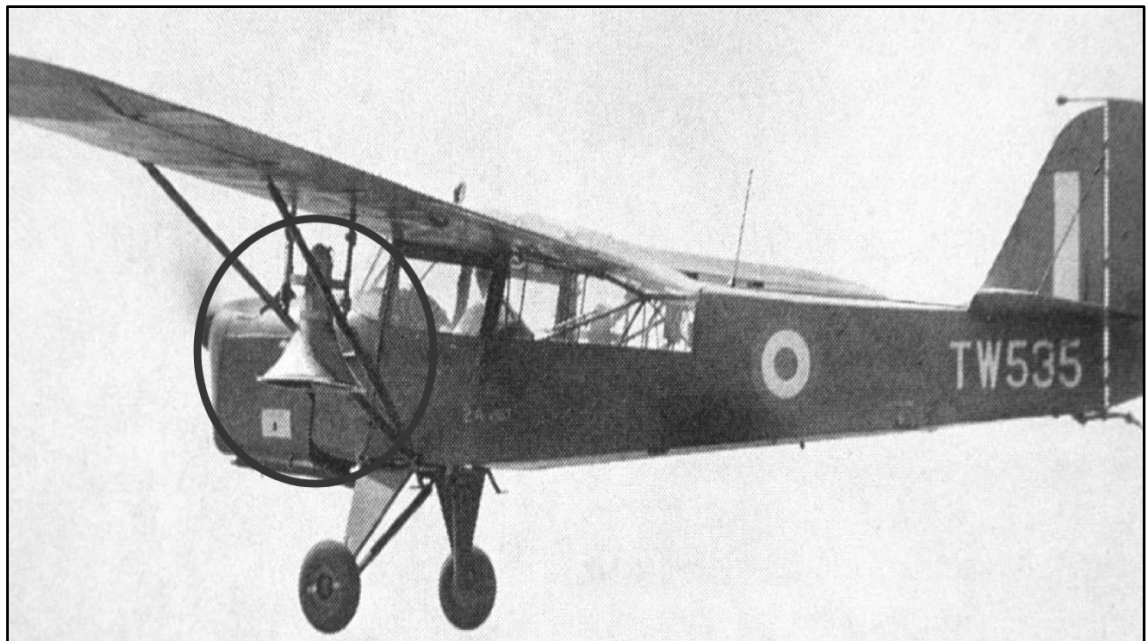
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<sup>534</sup> HC Deb 26 October 1954 vol 531 cc1761-8, 1763

<sup>535</sup> Chappell, Stephen, 'Air power in the Mau Mau conflict', in *The RUSI Journal*, 2011, volume 156, no. 1, pp 64-70, p.67

The second significant psychological warfare operation undertaken in Kenya was the use of loud-hailing aircraft. This tactic became increasingly important as the Mau Mau were dispersed and did not offer obvious targets for strike operations. The challenge for General Lathbury was the fact that the Emergency in Malaya was in full swing and that conflict had utilised the majority of the available loud-hailing aircraft, there were no additional aircraft to be had for Kenya.<sup>536</sup>

**Photo 27 – Auster 6 Loud Hailing Aircraft, Kenya**



**Source:** Chappell, Stephen, 'The RAF's contribution to the Kenyan Mau Mau conflict, 1953-56', presentation to the RAF Historical Society (05 February 2015), accessed at [http://brcmac.org.uk/20150203Chappell\\_Kenya\\_V2\\_REDACTED.pdf](http://brcmac.org.uk/20150203Chappell_Kenya_V2_REDACTED.pdf) 12 Nov 2016

When one looks at the analysis of airpower in Malaya and Kenya one is left to conclude that too much emphasis has been placed on the direct contribution of offensive air operations and not enough emphasis put on the full spectrum of air

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<sup>536</sup> 'Air operations in Kenya, minute of 10 June 1955', TNA, AIR 8/1886

operations. These conflicts came at a time when the RAF had just come out of a six-year global conventional conflict, that had naturally focused its attention towards the key conventional roles of airpower, namely; strategic bombing, air to air combat and ground support operations. What was needed in post-war operations was a return to the thinking that had shaped the Air Control operations of the interwar years, this realignment is easier said than done. Before proceeding to review the impact of RAF operations in these theatres, in the first instance it is instructive to analyse whether operations in Malaya and Kenya represented an application of doctrinal principles and whether during the conduct of operations we see a thread of evolution and innovation in RAF tactics.

### Application of Doctrinal Principles

What is interesting about doctrine in the immediate post-war period is that it retained many of the characteristics of the pre-war doctrine in relation to counterinsurgency operations, even though the RAF had been engaged in conventional war on a global scale in the preceding six years. However, this is not as surprising when one looks at the make-up of the senior ranks in the RAF in the post-war period. In the late 1940s and into the 1950s we see a cadre of senior officers who had begun their careers engaged in colonial operations in the 1920s and early 1930s. It was these officers who in the post-war period appreciated the ability to retain the experience and knowledge that had been gleaned from twenty years of colonial operations in the interwar period. The question remains, did operations during this period mirror the doctrinal principles that were espoused in the RAF war manuals published in 1950 and 1957? The answer is partially.

The 1950 War Manual spoke of air power in terms of the lessons learned from Air Control in the 1920s and 1930s, however Air Control was not something that could be repeated, certainly not in the approach that was taken in earlier decades. The 1950 War Manual still spoke in terms of airpower being the primary arm, although it did talk of operations in support of ground forces. The aim, as per earlier doctrinal publications, was to be:

achieved not by killing the enemy or occupying his country, but by making life a burden to him – by so dislocating the normal existence of the community that they submit to terms rather than endure the continuance of inconvenience and discomfort<sup>537</sup>

Although there was a certain element of operational truth in this in Malaya, particularly as it related to the destruction of jungle camps and cultivation plots. The overall use of airpower in Malaya did not correlate to that which had gone before. Airpower in Malaya undoubtedly played a significant role, however always it was in subordination to ground forces. This may have been because of lessons learned during the Second World War, but also certainly was because of the operational reality of conducting manoeuvres in dense jungle conditions. Independent operations, while carried out in some instances, were rare and ultimately of questionable utility. Thus, we see over the course of the 1950s a reduction in independent bombing sorties and a huge increase in other mission types, including; psychological warfare, ground attack, casevac and mobility.

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<sup>537</sup> ‘RAF Air Publication (AP) 1300, *Royal Air Force war manual part 1: operations*’ (unpublished doctrine manual, Air Ministry, 1950), TNA, AIR 10/9364

The conclusion drawn is that in the early 1950s the RAF did not apply the doctrinal principles espoused in the 1950 publication, this was because the operational reality on the ground had moved on, whereas the doctrinal tenets had not. However, by the publication of the updated war manual in 1957, the fruits of the experiences of Malaya would be translated into doctrine.

We see in this publication a de-emphasis on the old Air Control principle of the ‘dislocation of the enemy’s normal mode of life’.<sup>538</sup> Also a corresponding increase in the emphasis of operations in support of the ground forces. These support operations included; reconnaissance, offensive support, air transport, protection of surface lines of communication, the air cordon or ‘air pin’ system, and psychological warfare. Thus, the operational reality in Malaya in the late 1950s undoubtedly mirrored the doctrinal principles of the 1957 war manual.

1961 saw the publication of Air Ministry Pamphlet 375, *Internal security air operations*, and while it was published after the end of the Emergency, it is instructive in relation to the impact that Malaya had on the doctrine related to colonial operations. This publication signals a significant shift away from doctrine that specifically relates to colonial or Air Control operations, and instead focuses predominantly on key *functions* of air power. As Sebastian Ritchie has argued:

The publication of Air Ministry Pamphlet 375 clearly marks an important shift in the RAF’s doctrinal position away from the language of the Air Control era and towards something far more recognisable

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<sup>538</sup> ‘RAF AP 1300, *Royal Air Force war manual part 1: operations*’ (unpublished doctrine manual, Air Ministry, 1957, TNA, AIR 10/5589

from a modern-day perspective<sup>539</sup>

While Ritchie argues that this publication represents a significant change in RAF *doctrinal* position, it did not signal a significant shift in *operational* reality. Rather this pamphlet captured in doctrine that which had been practiced for fifteen years in post-war operations. Furthermore while it may not have discussed Air Control, or the principles upon which this concept was built, it does owe its past to the doctrine that had gone before. If doctrine is anything, it is inevitably evolutionary, and rarely, if ever, revolutionary. This chapter now turns to highlight some of this evolution and to assess whether or not innovation was present in the RAF operations in Malaya and Kenya.

### Evolution and Innovation

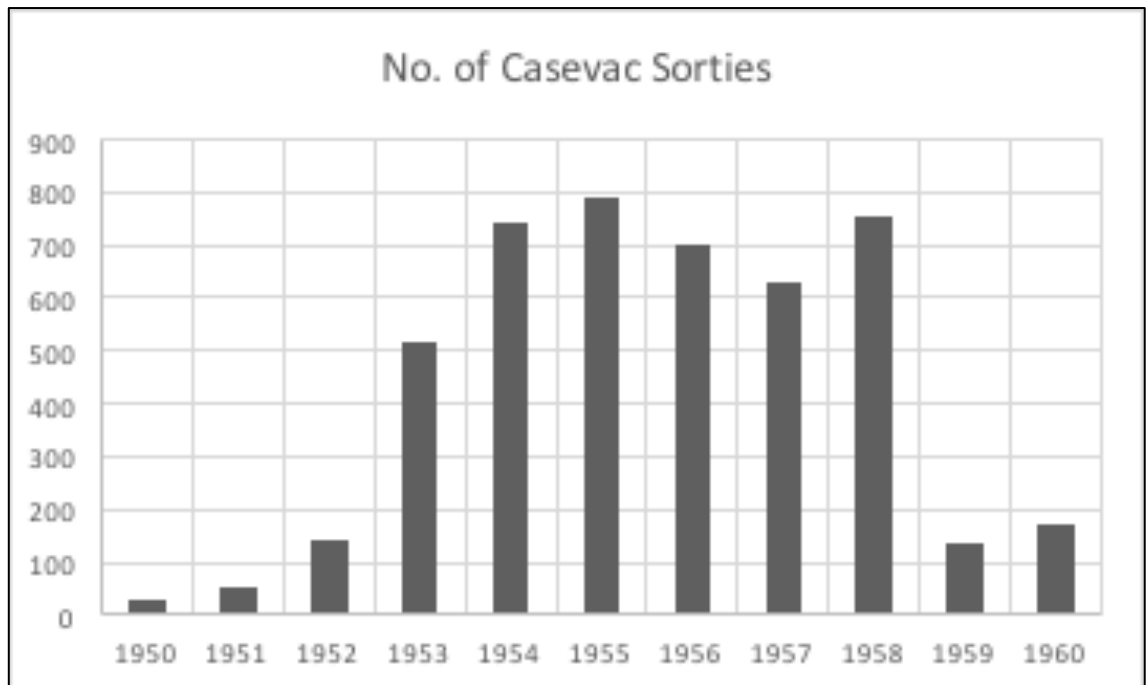
One of the great advancements made by the RAF in the immediate post-war period was the development and progress in casualty evacuation. Casevac was not new, and had been started in the colonial operations of the 1920s (see chapter 2 for further details), however in Malaya and Kenya it evolved to a level of sophistication that ensured it became a key operation in future engagements. Casevac operations were significantly enhanced with the introduction of helicopters to Malaya in April 1950, and to Kenya from early 1954. Although at first deemed unreliable, and expensive to operate, their flexibility and ability to support troops in isolated locations far outweighed any perceived challenges. As early as March 1952, one MP noted that ‘their value has been demonstrated for recovering casualties from very difficult

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<sup>539</sup> Sebastian Ritchie, *The RAF, small wars and insurgencies: later colonial operations, 1945-1975* (Cranwell, United Kingdom, 2011), p. 11

country'.<sup>540</sup> The growth in popularity of helicopter operations is amply demonstrated by an analysis of casevac operations in Malaya from 1950 to 1960. As can be seen in figure 14, below, after the introduction of helicopters in early 1950 (consisting of one flight, FEAF Casualty Evacuation Flight),<sup>541</sup> their initial use was low, but by 1952 their utility had been proven and there is a corresponding dramatic increase in casevac operations:

**Figure 16 - Casevac operations in Malaya, 1948-60**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft : a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

<sup>540</sup> HC Deb, 18 March 1952, vol 497, cc2172-2770, 2268

<sup>541</sup> Wing Commander John Dowling, *RAF helicopters, the first twenty years* (London, 1992), p. 36.

This lesson had been learned by the US in Korea, when in ‘1951 an official American report stated that the versatility of the helicopter as an instrument of war had received formal recognition in the United States’.<sup>542</sup>

The growth in casevac capability and capacity had two significant effects. Firstly, casualty evacuation provided a great boost to the morale of men in the field, particularly those who were inserted deep into the jungle for significant periods of time.<sup>543</sup> The ease of mind which casevac provided enabled the morale of these troops to remain high, which undoubtedly increased effectiveness. Secondly, and more obviously, it provided for the better care of injured personnel, thus increasing recovery rates. There was also another side to casevac operations that is not highlighted, that is the ability of troops on the ground, where appropriate, to utilize the casevac capability to assist civilians, a so called ‘hearts and minds’ effect.

Casevac was but one mission type that helicopters performed in Malaya and Kenya. Other significant operations included mobility and aerial resupply. As early as May 1952, one army officer, in a letter to Gerard Templer, noted that the Naval S-55s in use had ‘revolutionized the conduct of operations’ and that the RAF should be encouraged to provide further helicopter support to Malaya.<sup>544</sup>

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<sup>542</sup> Wing Commander John Dowling, *RAF helicopters, the first twenty years* (London, 1992), p. 55.

<sup>543</sup> Mark Clegg, 'Air power, counter-insurgency and influence: the British experience during the period 1945-1976', in *The Royal Canadian Air Force Journal*, vol. 1, no. 2 (Spring 2012), pp 7-15, p. 8

<sup>544</sup> ‘Use of helicopters in Malaya’, TNA, WO 216/542, April - September 1952, Templer letter 08 May 1952



**Photo 28 - Casevac in Malaya, ND**

Men of 22 Special Air Service Regiment load a casualty aboard a Bristol Sycamore HR14 helicopter of 194 Squadron, Royal Air Force (RAF), in a jungle clearing at Ula Langat, near Kuala Lumpur.



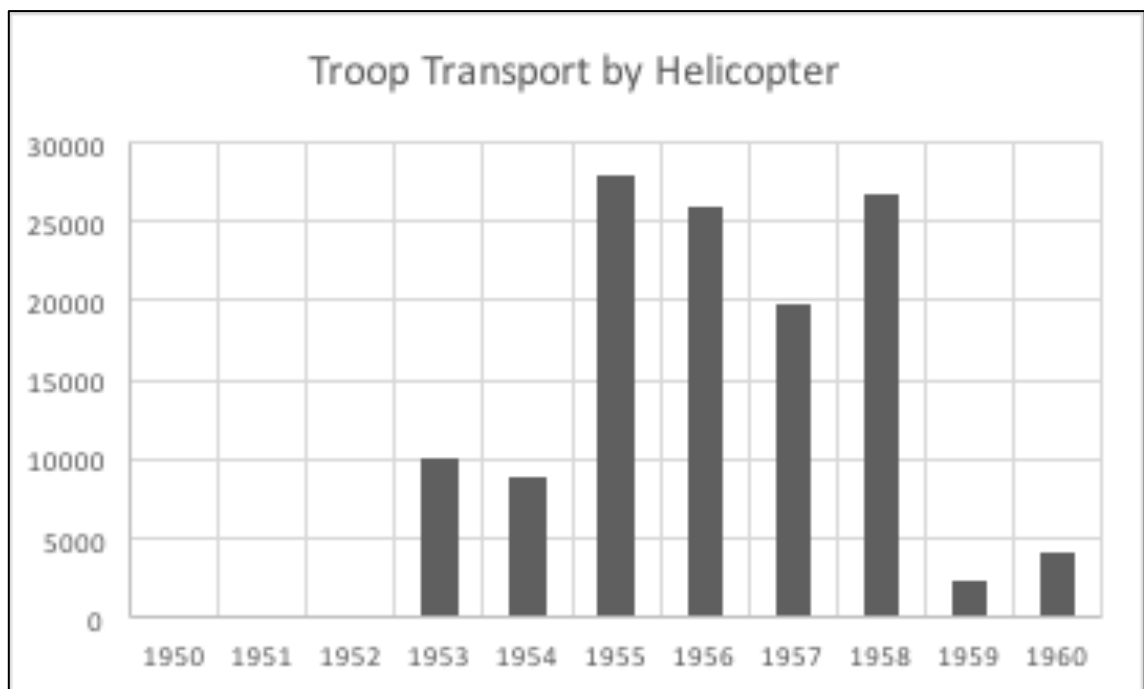
**Source:** Imperial War Museum, D 87946

In Kenya, while slow to appreciate the impact that rotary wing aircraft could have, once introduced in 1954, the helicopter became an important component of air operations. For the first time the helicopter allowed the army not only to get small numbers of troops deployed into isolated locations, but more significantly, they could be supported for long periods of time once there. This operational flexibility that helicopters granted was essential to the tactical and operational approach in Malaya in particular, as the Secretary of State for Colonies stated in a memo to cabinet in 1955, while decrying the shortage of helicopters:

The importance of helicopters to operations in Malaya is immense. Throughout the year the helicopter has demonstrated its versatility and has been used extensively in its various roles of casualty evacuation, troop lifting, reconnaissance, communications flying, and for search and rescue

Furthermore, he highlighted that troop transport by medium helicopters was now the primary role and was 'vital in achieving the maximum effectiveness of the security forces against the terrorists'.<sup>546</sup> This importance is illustrated by the growth in troop transport in the middle of the 1950s, ultimately, between 1952 and 1960 more than 110,000 troops would be lifted by helicopter.<sup>547</sup>

**Figure 17 – Troop transport by helicopters, Malaya, 1950-60**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft : a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

<sup>546</sup> TNA, CAB 129/74/44, 06 April 1955 (Malaya, memo by the Secretary of State for Colonies)

<sup>547</sup> Wing Commander John Dowling, *RAF helicopters, the first twenty years* (London, 1992), p. 92.

Aerial resupply was another area where helicopters contributed in Malaya, although to a lesser degree in Kenya. Although not their primary role, it was used to support troops in isolated areas where there was no access to a landing strip, or when it was a new position that had yet to be supplied with a landing strip. However, most aerial resupply was conducted by the short take-off and landing aircraft, thus in 1954 helicopters were responsible for freight operations totalling 238,000 pounds, this contrasted against a total annual air supply activity totalling 6,793,000 pounds, thus contributing just 3.5% in 1954.<sup>548</sup>

### **Photo 29 - Aerial resupply in Malaya, ND**

A Bristol Sycamore HR14 helicopter of 194 Squadron, Royal Air Force (RAF), practicing underslung load-carrying at RAF Kuala Lumpur airfield.



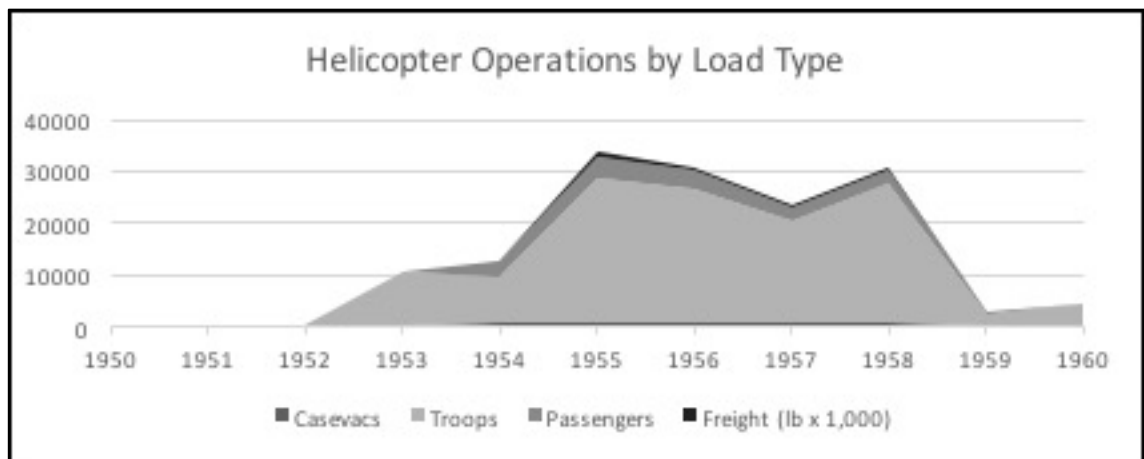
**Source:** Imperial War Museum, MAL 65

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<sup>548</sup> Victor Flinham, *Air wars and aircraft: a detailed record of air combat, 1945 to the present* (New York, 1990), pp 330-32

Another area in which helicopters contributed was mobility. Between 1954 and 1960, helicopters were responsible for delivering over 17,000 passengers throughout Malaya. While a significant figure, it is dwarfed by troop movements in the same period of over 100,000. Thus, while helicopters moved troops, passengers, freight and casualties around Malaya, it was the mobility of troops which undoubtedly led to its greatest impact on operations. This is clearly demonstrated through an analysis of helicopter load types in Malaya in the period 1950-60, see figure 16, below.

**Figure 18 - Helicopter operations by load type in Malaya, 1950-60**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft : a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

Psychological warfare was another area of evolution and innovation. Psychological warfare operations were not a new phenomenon, however in Malaya, and Kenya they were a central part of the overall counterinsurgency operations. In Malaya, Operating under the Psychological Warfare Department of the Director of Operations, the role of this unit was to increase the surrender rate of CT's<sup>549</sup>. The

<sup>549</sup> 'The Royal Air Force's contribution to the psychological warfare campaign throughout the Malayan Emergency', chapter 4, TNA AIR 41/83

part played by airpower was as one of several delivery mechanisms for leaflets and broadcasts. As we have seen, by 1957 this role of airpower was ingrained within the official doctrine, indeed there was a chapter dedicated to this role. However, the role was not a new one, during the Air Control operations of the interwar period, as we have seen, leafleting was an important element. What had changed by the post-war period, was that the sophistication of such operations had advanced, while the part they played in overall strategy had become more important. Although by 1950, two years into the Malayan Emergency, the requirement for more focus on this area was highlighted by the Secretary of State for the Colonies when he stated:

There is need however for better direction of effort against the Communists in both *(a)* general propaganda work and *(b)* direct " psychological warfare " against the bandits. The latter is in its infancy, although a start has now been made by the appointment of a Public Relations Officer to General Briggs's staff and of a " propaganda section " of the C.I.D., which works in close co-operation with him.<sup>550</sup>

Not only did these types of operations appeal for the surrender of CTs, what it also did was enable specificity; messages directed against individuals and groups, targeting them with direct, relevant communications. This of course was enabled by the intelligence network, and the ability of it to collect, interpret and disseminate information. Thus, we see in Malaya for the first time in colonial operations, the multi-faceted and multi-layered approach to operations, this was built into the foundation of the Briggs plan, a plan that brought together the political, martial, and police agencies to deliver on the overall goal of ending the Emergency by defeating

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<sup>550</sup> TNA, CAB 129/40/25, 13 June 1950

the CTs. In Kenya, we see some of the fruits of this approach in Malaya, when these tactics were mirrored in order to help with the fight against Mau Mau terrorists.

Psychological operations were part of an overall pivot away from purely direct, offensive air operations, to a more nuanced and mature model of counterinsurgency operations. This argument is summed up well by Robert Asprey when he states that Malaya represented:

a realignment of tactical thinking-away from conventional terms of "battle" and "victory" to much more sophisticated terms of "pressure" and "gain".<sup>551</sup>

This pivot is central to an understanding of the impact of airpower operations in any counterinsurgency environment.

### Impact of Operations

Just like Kenyan operations had been influenced by those in Malaya, operations carried out in Kenya would influence the conduct of British forces in other theatres. One example of this is the way in which new settlements in Kenya were constructed taking account of lessons that had been learned in Malaya about provision of water supplies and the risk of flooding.<sup>552</sup>

These lessons also were apparent in the use of airpower. Specifically, the use of helicopters for casualty evacuation, and the extensive use of aircraft for

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<sup>551</sup> Robert B. Asprey, *War in the shadows* (Lincoln, NE, 2002), p. 572

<sup>552</sup> 'Protection of villages against Mau Mau attacks, Kenya, notes on planning and housing aspects of resettlement and development of new villages', TNA, CO 822/481

psychological warfare operations, were because of experiences in Malaya and elsewhere.

It is difficult to accurately determine the impact of airpower operations in the conduct of, and the ultimate success, of British forces against the Mau Mau in Kenya, and Communist Terrorists in Malaya. However, all evidence would tend to suggest that air operations were certainly impactful. In Kenya, Air strike operations were responsible for the death of ‘almost 900 insurgents [...] as a direct result of air attacks by June 1954’.<sup>553</sup> Furthermore the unambiguous statement by both Erskine and Lathbury certainly support the thesis that airpower played a decisive role in enabling the successful conduct of operations against the Mau Mau.

In Kenya we do not see a significant evolutionary or innovatory trend, rather we see a reinforcement of the evolution and innovation experienced in Malaya. The scale of operations in Kenya did not necessitate evolution and innovation in tactics, rather they took what had and what was working in Malaya, and implemented them successfully. This in itself shows a level of knowledge creation and transfer across the RAF, something that is a key requirement for a learning organisation.

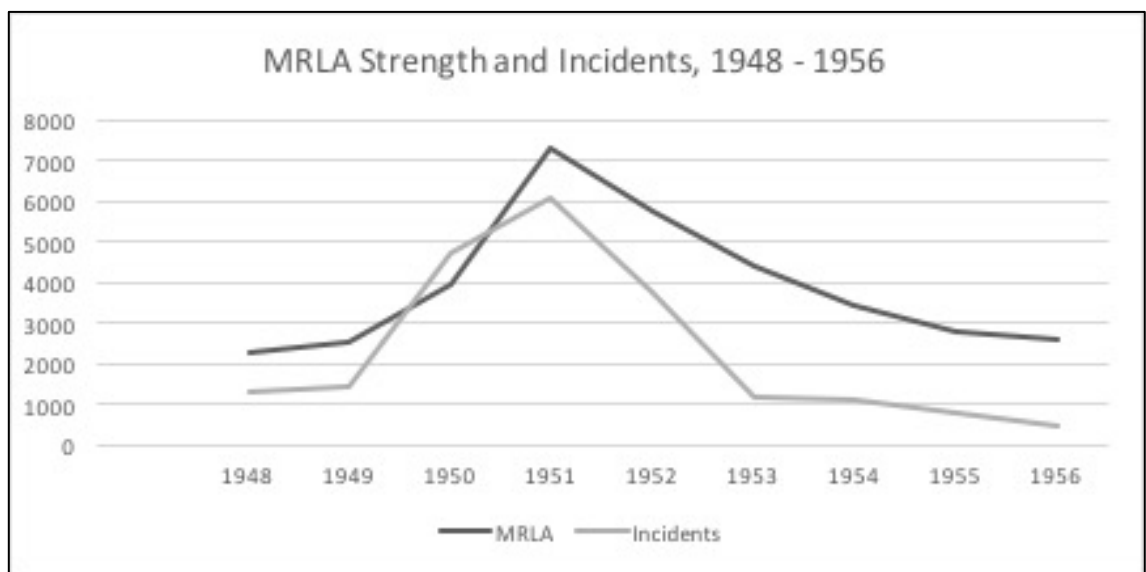
The previous decade had made the RAF focus on conventional operations and this was seen in their doctrine, combat capability, tactics and technological development. Thus, it is not surprising to see a lag in doctrine and tactics, and it is not really until the early 1950s that we see the RAF focus turn from offensive air operations to a

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<sup>553</sup> Chappell, Stephen, 'Air power in the Mau Mau conflict', in *The RUSI Journal*, 2011, volume 156, no. 1, pp 64-70, p. 68

fuller spectrum approach. This full spectrum approach realised that airpower was a component part of a much broader strategy, and that the key contribution that airpower could provide would be to support the other components. This resulted in airpower delivering a range of operation types, including; casevac, mobility, psychological warfare, along with their more familiar roles of reconnaissance, ground attack and air strike operations. Also, the change in the emphasis of operations conducted, evolving from a focus on direct to indirect as the engagements evolved, can be explained in the case of Malaya very simply by an analysis of the strength of the MRLA during this period:

**Figure 19 – MRLA strength and incidents, 1948-56**



**Source:** All analysis by the author, data taken from; Victor Flinham, *Air wars and aircraft : a detailed record of air combat, 1945 to the present* (New York, 1990), pp 326-38

Direct operations were conducted in the early years of the Emergency, however this waned as the 1950s progressed, a simplistic explanation, as shown above, is that there were less targets for direct offensive air strikes, however this is a little too simplistic. The reality is that as the Emergency progressed the sophistication of the



approach by the Director of Operations necessitated a more sophisticated approach by airpower, an approach to provide better support to the broader strategy. Thus, as the 1950s progress we see a significant increase in indirect operations conducted by airpower. Similarly, in Kenya, as the Mau Mau got dispersed they represented a harder target to find, fix and engage, thus more indirect airpower roles came to the fore.

Was airpower effective in Malaya and Kenya? Again, airpower must be judged across the full spectrum of operations and not judged solely by the typical measuring stick of enemies killed. Gordon Simpson sums this up well when he concludes that:

The effectiveness of airpower in the Malayan Emergency was mixed. From the standpoint of defeating guerrilla forces, “the air campaign could hardly be judged other than a colossal misuse of resources.” Yet in terms of taking the war to the enemy both psychologically and physically, it must be considered a success. It was a force multiplier, maximizing efforts to both eliminate the insurgents and win hearts and minds.<sup>554</sup>

His argument is convincing, coupled with this is not only the psychological effect on the enemy, but also the psychological effect of airpower on your own forces.<sup>555</sup> The ability of airpower to deliver casevac and mobility operations in Malaya and Kenya had an enormous effect on force morale.<sup>556</sup> When one considers the environment in which British forces had to operate, the knowledge that they could be resupplied, no

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<sup>554</sup> Gordon Jay Simpson, 'Not by bombs alone, lessons from Malaya', in *Joint Forces Quarterly* (Summer 1999), pp 91-8

<sup>555</sup> 'Air support for anti-bandit operations in Malaya', TNA, AIR 23/8437, 8 December 1950, Briggs paper 22 December 1950

<sup>556</sup> Mark Clegg, 'Air power, counter-insurgency and influence: the British experience during the period 1945-1976', in *The Royal Canadian Air Force Journal*, vol. 1, no. 2 (Spring 2012), pp 7-15, p. 8

matter how remote their location, and the comfort of knowing that if you got injured you could be flown out was a huge boost to the men on the ground. In this respect the helicopter proved an immense asset in Malaya, and while underutilised in Kenya, the same advantages were delivered by the light aircraft force of the KPRAW.

One of the key lessons learned in Kenya about the use of airpower in small wars environments, as argued by Steve Chappell, is that the avoidance of civilian casualties is paramount:

senior RAF officers and members of the Cabinet were fully attuned to the need to avoid CIVCAS [civilian casualties] from air action. This was first seen when the rules concerning the use of Harvards were issued: ‘...[aircraft] will not take armed offensive action against any target outside the prohibited areas. It is emphasised that it is of the greatest importance that our own forces and loyal Africans should not be subjected to offensive action from the air.’ Likewise, another report reveals that both Erskine and the Kenyan Government did not support indiscriminate bombing of the Kikuyu as it stated that offensive air operations would occur only in those areas prohibited to civilians.<sup>557</sup>

The challenge the RAF would now face was the fact that due to the Cold War, the emphasis on force structure and aircraft procurement was very much centred on the jet aircraft, and the requirement to prepare for a conventional war against the Soviet Union in Europe.<sup>558</sup> This emphasis would deliver what the RAF required, in terms of structure and aircraft, however it would be at the expense of operations that would not conform to this paradigm. Kenya would have a lot of similarities to Malaya, however in certain ways it was quite different. While the scale of the operations in

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<sup>557</sup> Wing Commander Steve Chappell, ‘Air power in the Mau Mau conflict: the governments chief weapon’, in *Royal Air Force Historical Society Journal*, no. 55, pp 25-55, p. 33

<sup>558</sup> Philip Towle, *Pilots and rebels: the use of aircraft in unconventional warfare, 1918-1988* (1st ed., London ; Washington, 1989), p. 95

Malaya necessitated a significant investment of men and resources, in Kenya this did not happen. Thus, we see in Kenya the ability of the RAF to conduct operations from a force cobbled together. However, what the RAF achieved in Kenya was to confirm the ability of airpower to significantly influence and aid the conduct of operations in a small wars environment. Particularly in theatres where operations were conducted in areas that proved challenging for ground forces to consistently secure. This would be an advantage that airpower delivered at the time, and still delivers today. What the RAF had demonstrated in Kenya was that airpower was still very relevant in policing the Empire, if not the decisive leader it had proved to be in the interwar years. Furthermore, it demonstrated that tactics developed and deployed elsewhere, in particular Malaya, were relevant to the RAF's role in counterinsurgency operations around the Empire.

So as our attention turns to more contemporary operations, the question remains; was the RAF still the learning organization that was seen in the interwar years? The answer to this is partially. Undoubtedly, during the post war period we see the RAF show a capability to capture and transmit knowledge, we see that in the way that lessons from Malaya are implemented in Kenya. However, the great limiter of the RAF's ability as a learning organization in the small wars environment during this period is the fact that the focus is predominantly on conventional operations, nuclear operations and the Cold War. As the Cold War era faded and RAF turned their attention to Iraq and Afghanistan in the 2000s, initially conventional operations would again take precedence, however in the wake of the end of conventional operations in these two theatres, the RAF would once again be asked to operate in a small wars environment.

## Chapter 4 – Airpower in Contemporary & Future Small Wars

The onset of the Gulf War in 1991 pitted a coalition of Western powers against what was at the time the fourth largest army in the world. At this time, Iraq seemed to be a formidable foe, however as subsequent experience showed, the Iraqi army and air defences proved to be a house of cards, that after initial strikes, tumbled to the ground. In retrospect, many commentators have disregarded this conflict precisely for this reason, as Martin Van Creveld said, ‘looking back over the last few centuries [...] it would be hard to find any campaign in which one side enjoyed such a huge qualitative advantage over the other’, while this is certainly true, this does not take away from the fact that the First Gulf War was a key point in the development of modern airpower.<sup>559</sup> It witnessed a new approach to warfare, one influenced heavily by technology, that relied on a highly advanced, elite air component, backed by ground forces. This would be an approach which would influence the US and its allies in subsequent wars in Afghanistan in 2001 and again in Iraq in 2003.

Although representing a new approach to modern wars, interestingly this approach is in line with earlier British policy, the so-called ‘steel over flesh’ approach to the Second World War being a case in point. In this war, the coalition deployed 1800 aircraft, against the Iraqis’ 600, this quantitative edge, coupled with the qualitative difference, meant that within days of hostilities beginning the coalition air forces could operate with near impunity over Iraq. The air campaign broadly followed John Warden’s industrial ring theory (see chapter 1 for further detail), coalition aircraft targeted Iraq’s command and communication systems, its industrial and utilities

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<sup>559</sup> Martin Van Creveld, *The age of airpower* (1st ed., New York, 2011), p. 321.

infrastructure and finally focused devastating firepower on Iraq's fielded forces.<sup>560</sup>

The result of this mismatch in airpower was highlighted in the duration of the subsequent land campaign, a mere 100 hours.

While the Gulf War represented such a mismatch in opponents, it did highlight the new direction that modern conflict was taking, this was a direction that had airpower as a core component. Supporting this pillar was the new wave of technology that enabled commanders to see the battlefield in unprecedented clarity (Joint Surveillance and Target Attack Radar System, JSTARS), and the emergence of precision guided munitions (PGMs) that allowed the coalition aircraft to accurately engage key targets.

By 2003, the new approach to war, alluded to above, had developed significantly.

The air forces would lead the way followed by a small, elite ground force component. Donald Rumsfeld would famously call this approach "shock and awe".<sup>561</sup> A phrase coined by Ullman and Wade in their 1996 work 'Shock and awe, achieving rapid dominance'.<sup>562</sup> If the First Gulf War had been a mismatch, the second was even more so. Iraq had never recovered from the losses of the first war and this was amplified by a decade of economic sanctions.<sup>563</sup> The coalition opened the Second Gulf War by launching 1,000 precision-guided cruise missiles, this was followed up by a devastating air campaign utilising the most technologically

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<sup>560</sup> David Jordan, 'Air and space power in the contemporary era: 1990-2030', in David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016), p. 276.

<sup>561</sup> as quoted in Martin Van Creveld, *The age of airpower* (1st ed., New York, 2011), p. 331.

<sup>562</sup> Harlan Ullman and James Wade, *Shock and awe, achieving rapid dominance* (National Defense University, 1996)

<sup>563</sup> Martin Van Creveld, *The age of airpower* (1st ed., New York, 2011), p. 332.

advanced air forces in history. While the outcome of this conventional phase of the war was never in doubt, what is interesting about the Second Gulf War is that the conflict did not end when major combat operations did, in the following years coalition forces would be faced with a rising insurgency, and it is this facet of the war that will be analysed in detail later in this work.

In the last forty years, the RAF has been engaged in several small wars throughout the world. In the last twenty years, these have focussed on engagements fighting alongside the United States in the global 'war on terror'. These conflicts, in Iraq, Afghanistan and Libya, and more latterly the conflict against ISIS, have entailed the deployment of British land, sea and air forces, initially to fight conventional conflicts, and subsequently to bolster internal security and fight insurgencies. Coming in the post-Cold War era these deployments have been problematic for both the RAF and its coalition partners. Having spent 45 years preparing for a conventional conflict with the USSR in Europe, the ability of the RAF to be flexible to meet the challenges in modern counterinsurgency would be sorely tested. However, with a long history of the deployment of airpower in small wars environments, the RAF should demonstrate a level of experience and expertise in operating within this challenging environment.

One of the difficulties surrounding the use of airpower in small wars is the measurement of success. Whereas in conventional conflict the measurement of success is the degradation of the enemy's ability to fight, in counterinsurgency the measurement of success, especially in recent conflicts, should be based on the ability to 'weaken and deter insurgents long enough for the indigenous government to get

on its feet'.<sup>564</sup> This has certainly been the approach to operations in Afghanistan, Iraq and in the fight against ISIS. This is not a new idea, Curtis Lemay, whilst Chief of Staff of the U.S. Air Force stated:

In this type of war [irregular] you cannot – you must not – measure the effectiveness of the effort by the number of bridges destroyed, buildings damaged, vehicles burned, or any of the other standards that have been used for regular warfare. The task is to destroy the effectiveness of the insurgent's efforts and his ability to use the population for his own ends.<sup>565</sup>

This chapter will attempt to analyse the 'success' of airpower in contemporary small wars and try to understand what if any debt this success owes to the past.

Furthermore, it will review contemporary doctrine and understand through an analysis of the role of airpower and the resulting operations in small wars environments, whether airpower can play a significant role in small wars into the future. Before continuing, it is important firstly to provide some context to the modern small wars mentioned above. In the RAFs case these have entailed operations in Iraq, Afghanistan, and latterly against ISIS across the Middle East.

### Airpower in Afghanistan

The conflict in Afghanistan began in the wake of the 9/11 attacks and the objective of the invasion was to remove the Taliban from power. It was believed that the

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<sup>564</sup> Richard Andres, 'The new role of air strike in small wars', in *Small Wars Journal*, blog post | Jul 19 2008, available at <http://smallwarsjournal.com/blog/the-new-role-of-air-strike-in-small-wars> (accessed 02 April 2017)

<sup>565</sup> U.S. Department of the Air Force, *Irregular Warfare*, Air Force Doctrine Document 2-3 (Washington, DC: U.S. Department of the Air Force, August 1, 2007), vi. General Curtis Lemay, fifth Chief of Staff of the United States Air Force referring to irregular warfare.

Taliban represented a power bloc that supported the use of terrorism against the US and its allies. The goal of the operation was regime change. The coalition planned to do this by leveraging three key components; airpower, special forces, and indigenous opposition forces. Afghanistan represents one of the first instances of western powers utilizing this approach, essentially it represents an airpower first strategy, with the special forces troops providing eyes and ears on the ground to supplement air intelligence assets, as David Deptula has described:

The opening phase of OEF [Operation Enduring Freedom] saw a measured application of modern airpower in conjunction with a light footprint of special operations and other government agency personnel on the ground acting as intelligence, surveillance, and reconnaissance (ISR) sensors, partnering with the Afghan Northern Alliance ground forces.<sup>566</sup>

### **Photo 30 - RAF Tornado in Afghanistan, 2010**



**Source:** available at <http://helmandblog.blogspot.ie/2010/04/raf-tornado-squadron-hands-over-duties.html> (accessed, 09 April, 2017)

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<sup>566</sup> David Deptula, *Air power in the Middle East, a contemporary assessment*, available at <http://www.hoover.org/research/airpower-middle-east-contemporary-assessment> (accessed 30 January 2017)



What is interesting about this approach, is that as operations continued the NATO coalition relied more and more on ground force intervention. Thus, we see the initial strategy as an airpower first one, however this then evolved into a traditional ground centric counterinsurgency strategy.<sup>567</sup>

There are several key reasons why an airpower first strategy was superseded by a ground centric campaign. Firstly, airpower could deliver rapid mobilization to kick-start the beginning of the campaign. Thus, almost immediately airpower could bring kinetic effect to bear against the Taliban in Afghanistan, while at the same time delivering special forces teams and the equipment they required to the theatre. As the conflict continued, NATO was in a better position to transport ground forces to the theatre and build up the ground component. Secondly, the inability of the indigenous forces to bring operations to a successful conclusion necessitated NATO in supplementing their capabilities with ground forces.

The initial airpower centric approach, utilised in Afghanistan, has come to be known as the ‘Afghan Model’.

in which indigenous allies replace American conventional ground troops by exploiting U.S. airpower and small numbers of American special operations forces (SOF).<sup>568</sup>

The Afghan Model has been a controversial approach and many commentators argue

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<sup>567</sup> David Deptula, *Air power in the Middle East, a contemporary assessment*, available at <http://www.hoover.org/research/airpower-middle-east-contemporary-assessment> (accessed 30 January 2017)

<sup>568</sup> Stephen Biddle, ‘Allies, airpower and modern warfare: the Afghan model in Afghanistan and Iraq’, in *International Security*, vol. 30, no. 3 (Winter, 2005/2006), pp 161-176, p. 161

on the one side, that it foretold a new approach to global conflict by western forces, one which will result in a transformation of traditional ground force capabilities to smaller highly specialised armed forces. On the other side Stephen Biddle, amongst others, argues that the evidence does not point to this conclusion and that in fact;

Ground and air forces are thus powerful together, but are poor substitutes for one another: even twenty-first-century precision airpower cannot replace suitable skills on the ground.<sup>569</sup>

As NATO ground forces increased, the requirement for air support operations, both kinetic and non-kinetic, increased rapidly. In a country where road and rail transport is nearly non-existent, the ability of fixed wing and rotary aircraft to support fielded forces was vital.

Afghanistan is an interesting conflict from an airpower perspective for several reasons; the heavy reliance on airpower in the initial stages, the role of combat air support, the task of air supply and air mobility, and the early steps towards the establishment and support of an indigenous airpower capability. These roles are within the remit of modern air forces, however, as we will see, not all modern small wars are the same.

### Airpower in Iraq

In 2003, coalition forces would return to the Middle East for the second time in the space of 12 years. In the 1991 Gulf War, coalition forces had forced an Iraqi

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<sup>569</sup> Stephen Biddle, 'Allies, airpower and modern warfare: the Afghan model in Afghanistan and Iraq', in *International Security*, vol. 30, no. 3 (Winter, 2005/2006), pp 161-176, p. 175

invasion force out of Kuwait and back behind its border. A decision was made at that time not to pursue the retreating Iraqi army, and in the ensuing years the coalition maintained pressure on the Iraqi government by implementing a stringent no-fly zone over northern and southern Iraq, while also introducing sanctions to reduce the ability of Iraq to rearm and redevelop their military forces. With the 9/11 terrorist attack, Iraq was identified by the US as a state that supported terrorism, this coupled with a belief that Iraq had stocks of weapons of mass destruction (WMD's), gave the justification for the US and British led coalition to once again go to war with Iraq. The difference this time was that the objective of the conflict was regime change. The conflict in Iraq, like that of Afghanistan, was split into two distinct phases. First came the conventional phase, where coalition forces defeated Iraq's fielded military forces. This phase lasted less than six weeks. However, what is of interest to this work is phase two of the Iraqi conflict. This phase was defined by an insurgent uprising, initially against coalition forces, and then latterly against Iraqi government forces.

The insurgency was borne out of several issues, firstly there was the civil strife between the Sunni and Shia populations, and secondly there was the presence of Al Qaeda in Iraq. Initially there was violence between Sunni and Shia militia groups, then the violence spread and was targeted against coalition forces and later Iraqi government forces. For coalition forces the challenge was in discerning who was the enemy and who was not. Ground forces were the best means in overcoming this challenge through the utilization of checkpoints and search and destroy missions, however, the ability of ground forces to operate effectively was supported in no small part by airpower.

The use of airpower in Iraq included the full spectrum of airpower missions, both kinetic and non-kinetic. From fire support, CAS (close air support) and precision strike, to ISR (intelligence, surveillance, reconnaissance), mobility, casevac (casualty evacuation) and transport. Like Afghanistan, airpower played a key role in enabling ground forces within Iraq.

### Airpower against ISIS

The Islamic State of Iraq and Syria (ISIS) has become a growing menace to states across the Middle East.<sup>570</sup> The group itself has its origins in the late 1990s and formed an alliance with al-Qaeda to fight against the US and its allies in 2004 as part of the Iraqi insurgency. With the outbreak of the Syrian civil war, ISIS sent forces into Sunni regions of Syria and from there they have grown their support base within Syria, as well as establishing areas of influence within Iraq. ISIS claim that they are establishing a global caliphate, and it is against this threat that many countries have come to the aid of Iraq to help bolster their armed forces and support their operations with airpower. A significant development in 2016 has been the deployment of Russian forces, including Russian airpower, to support the Assad regime in Syria.

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<sup>570</sup> The ISIS group is also known as ISIL and Daesh, for the purposes of this work it will be referred to as ISIS throughout.

**Photo 31 - US Army soldier with captured Islamic State flag in Iraq, 2010**



**Source:** Available at <http://archive.is/INIJe> (accessed 10 April 2017)

To date (mid-2017), coalition forces deployed against ISIS have been limited to SOF (special operations forces), training forces, air forces, and some ground support personnel. In the main the role of the airpower components has been in strike roles; close air support, interdiction and precision strike, and support roles; ISR, air refuelling and transport. The UK airpower involvement is called *Operation Shader*. The main UK component of the coalition is made up of 901 and 903 Expeditionary Air Wings (EAW). 903 EAW represents the bulk of RAF capabilities in the Middle East and the strike aircraft at its disposal are *Tornado GR4* and *Typhoon FGR4s*, these are supported by *C-130 Hercules*, and *Voyager* air-to-air refuelling aircraft.

Significantly, 903 EAW also includes 1 Intelligence, Surveillance and Reconnaissance Wing (1ISR) detachment.<sup>571</sup>

**Photo 32 - 903 EAW Tornado during counter-Daesh operations**



**Source:** Tweet, 19 March 2017, by <https://twitter.com/RafPhotog> (accessed 18 April 2017)

Before discussing the operations conducted by the RAF in these two conflicts and their relative success, it is important in the first instance to review contemporary doctrine and theory to provide some doctrinal context to the operations.

***Theory & Doctrine***

As was discussed in Chapter 1, there is a dearth of contemporary airpower theory. The theory that did influence contemporary operations was that written in the 1970s by John Boyd, and 1980s and 1990s by John Warden. Outside of these two there is a sparsity of theoretical writing. There is an abundance of writing on airpower topics, including a huge amount of publications related to airpower history, and some on the

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<sup>571</sup> RAF, 903 Expeditionary Air Wing, available at <http://www.raf.mod.uk/83eag/903eaw/> (accessed 18 April 2017)

future of airpower, however in the main these publications seem to avoid any theoretical considerations. There are exceptions, John Andreas Olsen is one, who's significant contribution to the debate on airpower can be found in his series of published works in the last two decades, David Jordan is another, where in *Understanding modern warfare*, he talks about the future of airpower and more presciently about the evolving threat landscape in a post 9/11 world dominated by insurgencies.<sup>572</sup>

Before outlining contemporary RAF doctrine it is important first to discuss how doctrine has changed during this period, and to provide the context in which contemporary doctrine sits. While this work is not focussed on the doctrinal creation process, but rather on the impact that doctrine has on operations, and operations on doctrine, it is important to understand how this process differs in a contemporary context.

The modern doctrine creation process is significantly different than what the RAF experienced in the inter-war and post-war period. Firstly the emergence of nuclear power in the post war period garnered a huge amount of focus and undoubtedly influenced the doctrine that emerged from the RAF. This is evidenced in the foreward to AP1300 (fourth edition), when Air Chief Marshal Sir Dermot Boyle states that 'providing the great deterrent [i.e. nuclear capability] is the primary

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<sup>572</sup> John Andreas Olsen, *Airpower Applied: U.S., NATO, and Israeli Combat Experience* (2017), *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd* (2015), *Air Commanders* (2012), *The Evolution of Operational Art: From Napoleon to the Present* (2010), *A History of Air Warfare* (2009), *John Warden and the Renaissance of American Air Power* (2007), *Strategic Air Power in Desert Storm* (2003), *Asymmetric Warfare* (2002), *A Second Aerospace Century* (2001); David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016)

function of air power today'.<sup>573</sup> Furthermore the growth in NATO also influenced RAF doctrine, and the RAF became a key contributor to the development of NATO doctrine. This influence culminated with the withdrawal of AP 1300 in the early 1970s, which had last been updated in 1964, and thus the RAF relied solely on NATO doctrine.<sup>574</sup>

With the collapse of the Soviet Union in 1989, the reliance on purely NATO doctrine, which focused on a conflict envisioned against the Warsaw Pact, was highlighted, and as a result the RAF recognised:

The need for commanders, planners, aircrews and airmen to understand the characteristics and fundamental tenets for the employment of air power [...] and [as a result] AP 3000, Air Power Doctrine, was first published in 1990<sup>575</sup>

Re-introducing RAF authored doctrine to the service was not without its challenges. As Christopher Finn has argued there were two main challenges, firstly there seemed to be a 'scepticism and suspicion' about written doctrine, and secondly there was a perception that introducing an RAF doctrine would conflict with NATO doctrine and thus lead to seemingly lack of solidarity within the alliance.<sup>576</sup> Despite these challenges, a second edition was published in 1993 and a third in 1999.

Contemporary RAF doctrine is encapsulated in AP3000, 4<sup>th</sup> edition, published in 2009. While NATO's preeminence and the subsequent fall of the Iron Curtain were

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<sup>573</sup> Group Captain Christopher Finn, 'British thinking on air power – the evolution of AP3000', in *Air Power Review*, vol. 12, no. 1 (Spring, 2009), p. 57

<sup>574</sup> 'History of British air power doctrine', in RAF, *British air and space power doctrine, AP 3000* (3<sup>rd</sup> edition), available at [https://www.raf.mod.uk/rafcms/mediafiles/374F3212\\_1143\\_EC82\\_2E801D2FE37E9617.pdf](https://www.raf.mod.uk/rafcms/mediafiles/374F3212_1143_EC82_2E801D2FE37E9617.pdf) (accessed 21 May 2017)

<sup>575</sup> Ibid.

<sup>576</sup> Group Captain Christopher Finn, 'British thinking on air power – the evolution of AP3000', in *Air Power Review*, vol. 12, no. 1 (Spring, 2009), p. 58



two significant events that impacted RAF doctrinal development, a third was the establishment of the Development, Concepts and Doctrine Centre (formerly called the Joint Doctrine and Concepts Centre) in the late 1990s.

The role of the Development, Concepts and Doctrine Centre (DCDC) is to help ‘inform defence strategy, capability development, operations and provides the foundation for joint education’. This role is delivered with a focus on a number of key areas, namely;

the Strategic Trends Programme which provides the long term strategic context for policy makers; concepts, which outline how our armed forces and defence may operate in the future; doctrine, which provides guidelines for commanders based on best practice and operational experience; and oversight of the legal content of operational law training.<sup>577</sup>

Thus contemporary RAF doctrine has at its core a joint approach, although the RAF still produces Tactics, Techniques and Procedures (TTP) documents, its overarching doctrinal philosophy is based on the joint doctrine emanating from DCDC. Another important aspect of modern British doctrine is that in essence they are public documents, for the consumption of all, this must be borne in mind when comparing older doctrinal publications to contemporary documents.

Contemporary RAF doctrine is encapsulated in AP3000, the most recent manifestation is edition 4. Its purpose, as stated in the introduction is:

*AP3000 Edition 4* therefore explains how British air and space power can be applied in an uncertain world, where expeditionary warfare is

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<sup>577</sup> <https://www.gov.uk/government/groups/development-concepts-and-doctrine-centre>

as likely to be enduring as interventionist, but where success in contemporary counter-insurgency operations, conducted within a framework of joint action, must be balanced against the retention of a contingent, full spectrum capability, able to deliver national security objectives whatever the nature of the crisis.<sup>578</sup>

What is significant about this stated purpose is the prominence that counterinsurgency operations are given. The RAF, throughout AP 3000, states that it is cognizant of the changing contemporary threat landscape, and while it needs to retain a capability in conventional conflict, it understands that the ability to counter asymmetric threats is key.

While the essence of violent conflict has remained constant, the character of warfare is changing, largely in response to the overwhelming conventional combat power developed by the West in general and the United States in particular.<sup>579</sup>

Thus, the RAF is all too aware that the ability of western powers to deploy overwhelming airpower, has led opponents to rely on asymmetric responses, and this necessitates a doctrinal framework that commanders can use to counter this asymmetry. AP3000 (4<sup>th</sup> edition) is presented in a manner in order to deliver messages to two audiences, as Christopher Finn argues:

Edition 4 has two aims: first, to provide authoritative conceptual direction on the employment of air and space power to airmen; and second, to explain as clearly as possible its utility to soldiers, sailors and all of the other actors who, as part of a Comprehensive Approach to ordering crises, are influenced by, or influence air and space

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<sup>578</sup> RAF, *British air and space power doctrine, AP 3000* (4<sup>th</sup> edition), available at [https://www.raf.mod.uk/rafcms/mediafiles/9E435312\\_5056\\_A318\\_A88F14CF6F4FC6CE.pdf](https://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf) (accessed 21 May 2017)

<sup>579</sup> RAF, *British air and space power doctrine, AP 3000* (4<sup>th</sup> edition), p. 29, available at [https://www.raf.mod.uk/rafcms/mediafiles/9E435312\\_5056\\_A318\\_A88F14CF6F4FC6CE.pdf](https://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf) (accessed 21 May 2017)

power.<sup>580</sup>

This aim, as described above relevant to AP3000 (4<sup>th</sup> edition) is an aspect of RAF doctrine that Parton has argued is enduring, he states that:

A study of the way that the RAF has used doctrine throughout its history reveals two main purposes: first, as a guide to those within the Service and, second, as an explanation to those outside the Royal Air Force of the way that it intended to operate.<sup>581</sup>

Doctrinal evolution is further evidenced in the publication of Joint Doctrine Publication 0-30 (JDP 0-30).<sup>582</sup>

Through a century or more of counterinsurgency operations the British have learned that the best approach to these operating environments is a holistic approach that encompasses political, social and military responses. This approach has now been formalized in doctrine and is known as the *Comprehensive Approach*:

the Comprehensive Approach, employing all available levers of power, has been adopted by the United Kingdom as the best way to achieve favourable and enduring end-states. The military contribution to this cross-government and inter-agency approach is captured by the campaigning process.<sup>583</sup>

The RAF expanded on this approach in its publication ‘Airpower in an uncertain world’.<sup>584</sup> It is to the operational realities of contemporary small wars that this work now turns.

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<sup>580</sup> Group Captain Christopher Finn, ‘British thinking on air power – the evolution of AP3000’, in *Air Power Review*, vol. 12, no. 1 (Spring, 2009), p. 63

<sup>581</sup> Group Captain Neville Parton, ‘In defence of doctrine...but not dogma’, in *Defense & Security Analysis*, vol. 24, no. 1 (March 2008), pp 81-9, p. 83

<sup>582</sup> JDP 0-30, UK Air and Space Power is the keystone air and space domain doctrine publication within the joint doctrine architecture, sitting below JDP 0-01, UK Defence Doctrine and alongside other joint doctrine.

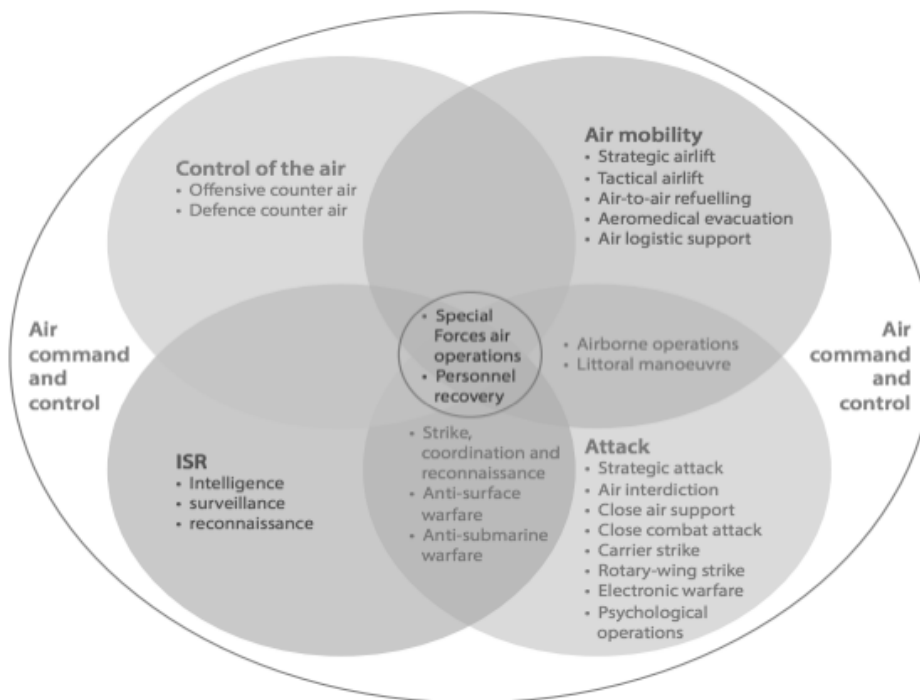
<sup>583</sup> *Ibid.*, p.33

<sup>584</sup> RAF, *Air power in an uncertain world*, available at <http://www.raf.mod.uk/role/airpoweruncertainworld.cfm> (accessed 30 January 2017)

## Operations

The RAF highlights several roles for the modern air force, these include; control of the air, air command and control, rapid global mobility, persistent ISTAR, precise effects, battlefield mobility and force protection.<sup>585</sup> The below graphic from *Joint Doctrine Publication 0-30* summarises this well:<sup>586</sup>

**Figure 20 - Summary of the roles of airpower, and their associated missions**



**Source:** *Joint doctrine publication 0-30 (JDP 0-30): UK air and space Power*, 2<sup>nd</sup> edition (2017), p. 41

These roles differ little from the role envisaged for airpower in its earliest incarnations, however the way in which each of these roles are delivered today

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<sup>585</sup> RAF, *Air power in an uncertain world*, available at <http://www.raf.mod.uk/role/airpoweruncertainworld.cfm> (accessed 30 January 2017)

<sup>586</sup> Ministry of Defence, *Joint doctrine publication 0-30 (JDP 0-30): UK air and space Power*, 2<sup>nd</sup> edition (2017)

differs greatly from what has come before. This section will look to outline the RAF view of its role and particularly how this relates to the way in which the RAF operates in small wars environments today. This will be achieved through an analysis of the seven key roles that the RAF has highlighted in their publication 'Air power in an uncertain world'. The RAF views these roles as enduring. For each of these roles this work will analyse the following; the RAF principal, its application in modern small wars, its evolution throughout the last 100 years, and its potential for the future. By analysing these enduring principals this chapter will provide an analysis of how and why these roles have evolved, and whether during their evolution we can discern a pattern of learning and development, particularly as it relates to the employment of airpower in small wars.

### Control of the Air – freedom of action

Control of the air essentially refers to the ability of *your* air forces to operate unmolested within an area of operations. In the past, this has been referred to by various names, the most common is that of air superiority. Within the Iraqi, Syrian and Afghan engagements the requirement for airpower to win and hold control of the air was limited, this control was achieved very early in the conventional phase of these operations and was never legitimately challenged. Thus, there was no requirement for the air forces to perform a function to *maintain* this, however in all theatres it has been challenged.

The essence of asymmetrical warfare is the ability to find ways to challenge your opponent even if you cannot match up in conventional conflict.

Insurgents contested the Allied use of air power, not by having an air force, but by anti-aircraft fire, attacks on airfields, and the use of propaganda about casualties.<sup>587</sup>

In Iraq one way in which insurgents challenged the coalitions, including the RAFs, control of the air, was to target aircraft that were in the process of taking off or landing. This was achieved by using several types of weapons, including shoulder launched anti-aircraft missiles and even crude rocket propelled grenades (RPGs). On the 6<sup>th</sup> of May 2006, the Royal Navy lost a Westland Lynx AH.7 over Basra in southern Iraq, a subsequent military inquiry concluded that the helicopter ‘was shot down by a surface-to-air missile, using a man-portable air defense system, fired from the ground.’<sup>588</sup> The man portable air defence system, or MANPAD, turned out to be an SA-14.

**Photo 33 - SA-14 launch tube and missile**



**Source:** <https://naveodtechdiv.navy.mil/> (accessed 22 April 2017)

In a similar incident in February 2007 an RAF C-130 Hercules was seriously damaged upon landing at a temporary landing strip in southern Iraq. Initially the

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<sup>587</sup> Jeremy Black, *Air power* (Lanham, MD, 2016), p. 275

<sup>588</sup> *International Herald Tribune Europe*, 27 April 2007

RAF reported that the incident had simply been a landing accident, however a subsequent report stated that

The C-130J transport aircraft was struck by two bombs planted by militants as it landed on a temporary runway in Maysan Province in south-eastern Iraq on February 12 last year [2007].<sup>589</sup>

These two incidents demonstrate that an asymmetric approach by insurgents can certainly challenge the concept of ‘control of the air’, thus it is imperative that air forces continue to devise strategies to not only maintain control of the air, in the air, but also to find ways in which they can negate the ability of ground based insurgent forces from threatening their ability to operate unmolested.

The ability to operate unmolested in an area of operations has been the goal of the RAF since its earliest days over the western front in World War 1. In Iraq and the Northwest Frontier in the interwar period the RAF faced similar challenges, however in both of those theatres the challenge came from tribesmen wielding rifles, whereas today the ‘tribesmen’ wield MANPADS (man portable air defence systems, like the SA-14). The tactics to protect against this type of threat have not really changed from Iraq in the 1920s and 30s to the Middle East today. The key is to maintain security of your facilities, and if possible, to maintain a security zone around your facilities. One of the challenges faced by this in contemporary small wars environments is that modern day airports tend to be in and around cities and thus the ability to create a security zone around the facility is very difficult.

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<sup>589</sup> *Express*, May 17 2008, available at <http://www.express.co.uk/news/uk/44813/MoD-covered-up-truth-about-Hercules> (accessed 21 April 2017)

With the development and evolution of weaponry, this ability to challenge air control by asymmetric means will continue to increase. Weapons are becoming more accurate and smaller, thus the ability to detect and counter the threat will become increasingly difficult. Training air force personnel to be aware of these threats and to act accordingly will be a key way in which this threat can be negated.

### Air Command and Control – efficient and effective use of resources

Since the emergence of airpower in the early twentieth century one of the key areas of debate has centred on the command and control structure that should be in place when it comes to utilising airpower. The RAF, since it gained independence, has positioned itself as the most appropriate command structure for the utilisation of air assets and one of the key drivers for this is the belief that only through this structure can air assets be used in an efficient and effective manner. This is regardless of the primary role of airpower, whether that be on independent operations, or as a force to support land or sea operations.

In modern deployments, unless they are independent air operations, the RAF tend to contribute to a larger force structure, and as such tend to be subordinate to the officer commanding, typically an army officer. In relation to the ongoing actions against ISIS, speaking in January 2016, the Royal Air Force's Deputy Commander of Operations, Air Marshal Bagwell, stated that:

My role and that of RAF Air Command is simply to force generate the air forces to sustain our contribution [...] We have a long way to go before the operation concludes, but we should be very proud of our



contribution [...] Airpower is our major advantage in this conflict and the RAF is a very significant part of its successful delivery.<sup>590</sup>

As can be seen in this quote the RAF views its role as contributing to the larger operation, at the same time it is aware of the importance of this contribution to the overall success of the mission. What is interesting is that there has been a sea change in approach to air dominated deployments. Whereas during the interwar years the RAF had command responsibility for British operations in Iraq, Palestine, Transjordan and Aden, in modern small wars where air is the dominant arm, this approach has not been taken. So why is this? Modern small wars operations are very much joint operations, and there are little if any independent operations. This is in line with more of an emphasis by the British military on *jointery*. This can be evidenced in the publication of Joint Doctrine Publication 0-30.<sup>591</sup> Thus air component commanders typically work in collaboration with a land component commander and both report to a joint forces commander. For context a British command structure for contemporary operations is outlined below:

The concept of component command is central to the joint command and control of the British armed forces on operations. The JFC [Joint Forces Commander] will designate a JFACC [Joint Forces Air Component Commander] to exploit the full air capabilities available to the joint force; his role is to recommend how the Air Component should be employed, and he is responsible for planning, coordinating, allocating, tasking, executing and assessing air operations to accomplish assigned objectives.

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<sup>590</sup> Air Marshal Bagwell, 'RAF Deputy Commander of Operations: The fight against Daesh', *Defence in the Media Blog*, available at <https://modmedia.blog.gov.uk/2016/01/14/raf-deputy-commander-of-operations-the-fight-against-daesh/> (accessed 21 April 2017)

<sup>591</sup> Ministry of Defence, *Joint doctrine publication 0-30 (JDP 0-30): UK air and space Power*, 2<sup>nd</sup> edition (2017)

The key philosophy underpinning modern air force command is the concept of ‘centralised control, decentralised execution’, this typically takes the operational form of *tasking orders*.<sup>592</sup>

Will there be a situation in the future where the RAF has command responsibility of a small war? No. However there is every likelihood that an RAF officer will command within Permanent Joint Headquarters, but the significant shift towards ‘jointery’ has meant that no single service will hold command responsibility for a contemporary small war. As stated above the clear majority of contemporary operations are joint operations, furthermore, the approach to modern small wars is a holistic approach that not only includes the armed forces, but also political and humanitarian aspects.

### Rapid Global Mobility – deployment and sustainment

One of the enduring abilities of airpower is to be able to project power globally, and to sustain deployment in difficult environments. Thus, the RAF sees as one of its key goals the ability to deliver Rapid Global Mobility. The US Department of Defence defines Rapid Global Mobility as:

The timely movement, positioning, and sustainment of military forces and capabilities across the range of military operations.<sup>593</sup>

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<sup>592</sup> RAF, British air and space power doctrine, AP 3000 (4<sup>th</sup> edition), p. 61-6, available at [https://www.raf.mod.uk/rafcms/mediafiles/9E435312\\_5056\\_A318\\_A88F14CF6F4FC6CE.pdf](https://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf)

<sup>593</sup> Joint Publication 3-17 (JP3-17), *Air mobility operations*, available at [http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3\\_17.pdf](http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_17.pdf) (accessed 01 September 2018)

Rapid Global Mobility mission types include airlift, aerial refuelling, and casualty evacuation.

In today's modern small wars, rapid global mobility is one of the key attributes of airpower and one of its defining contributions to the conflicts that the RAF are involved in today. A great example of this is the operations in Afghanistan. Initially Afghanistan posed a challenge to military planners from several perspectives; it was landlocked, adjacent basing rights were not in place, and road and rail infrastructure were very poor. Thus, the ability of airpower to move, position and sustain the leading coalition elements was of paramount importance. Following on from airlift, the ability of air forces to sustain operations through aerial refueling, and their ability to deliver casualty evacuation across a theatre of operations allows military commanders to maintain the tempo of operations, while providing support to those on the ground.

As airpower has developed, specifically engine and aircraft technology, mobility has developed from a secondary role to a primary role of modern air forces. Although there was the use of air mobility in the interwar era, it was quite limited, however over the last thirty to forty years the development of air mobility as a key primary role of air forces has been marked. In the RAF, this development is marked by a continued significant investment in air mobility assets (eg. A400M, Voyager, C130J and C17), and the establishment of a separate Air Mobility Force (AMF).<sup>594</sup> The

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<sup>594</sup> RAF, *Air mobility*, available at <http://www.raf.mod.uk/role/air-mobility.cfm> (accessed 22 April 2017)

versatility of the A400M is an example of the increasing importance of these air mobility assets.<sup>595</sup>

**Photo 34- Voyager Refueling a C-130 Hercules**



**Source** – RAF, available at <http://www.raf.mod.uk/equipment/voyager.cfm> (accessed 22 April 2017)

Engine and aircraft development in the last seventy years has enabled the rapid growth and evolution of air mobility, this will not change. As aircraft engines becomes more efficient, thus it will make economic sense to move more and more cargo by air. This will certainly not replace the requirement of sea transport to move bulk cargo, however the ability of air mobility to carry heavier loads over longer distances will only enhance politician’s ability to rapidly deploy military assets across the globe.

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<sup>595</sup> Royal Aeronautical Society, *Atlas shoulders the load*, available at <https://www.aerosociety.com/news/atlas-shoulders-the-load/> (accessed 08 August 2018)

## Persistent ISTAR – intelligence-led operations

Whether acting in an independent role, or as part of a joint operation, one of the key attributes of modern airpower is the ability to provide the commander with a more complete view of the battlespace. This clarity has been enhanced in recent decades with the proliferation of technology that enables more accurate intelligence gathering. In modern terms, the ability of aircraft to become *sensor-shooters*, has enabled a single aircraft, multi-role reality.<sup>596</sup> Thus, according to the RAF, airpower ‘provides an essential and very significant element of the Joint intelligence collection and surveillance capability’.<sup>597</sup>

The application of this ability by the RAF is significant in modern small wars. This is how the RAF describes the application of intelligence-led operations:

In recent conflicts, hostile forces have sought to exploit this ‘confusion’ [confusion between combatants and non-combatants] to avoid air attack. However, the constellation of sensors employed by modern air forces is uniquely placed to solve the problem and exploit the solution – the process is termed Find-Fix-Finish-Exploit-Assess

- Target is identified through intelligence
- Its location precisely confirmed
- It is captured or attacked
- Documentation and other information at the site is examined
- Collected intelligence is analysed

The RAFs ability to *Find-Fix-Finish-Exploit-Assess* is enabled through its ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) fleet, including;

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<sup>596</sup> A sensor-shooter is an aircraft that not only provides the ability to conduct ISTAR activities, but can also then act on this information through kinetic effect (i.e. weapons employment)

<sup>597</sup> RAF, Air power in an uncertain world, available at <http://www.raf.mod.uk/role/airpoweruncertainworld.cfm> (accessed 30 January 2017)

the Sentinel, Sentry and Beechcraft Shadow R1, and the General Atomics MQ-9 Reaper. These assets are controlled by ISTAR Force Headquarters.<sup>598</sup>

**Photo 35 - Sentinel landing**



**Source:** RAF, available at <http://www.raf.mod.uk/equipment/sentinelr1.cfm> (accessed 22 April 2017)

The evolution of intelligence gathering by airpower in the last one hundred years has been staggering. Airpower's original mission in World War 1 was reconnaissance, and even at that early stage the ability to deploy a sensor-shooter was acknowledged. Airpower, and its development, has been hugely influenced by technological advancements and this is particularly apparent in intelligence. Concepts like sensor-shooter and network-centric warfare have been enabled by the immense advancements in networking technology in the last thirty years.

Recent operational experience of the RAF has led to the development of the Combat ISTAR (C-ISTAR) approach:

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<sup>598</sup> RAF, *Intelligence*, available at <http://www.raf.mod.uk/role/intelligence.cfm> (accessed 22 April 2017)

whereby the platforms, sensors and their ground and airborne exploitation nodes are networked. In addition to providing a fused picture, this joined up approach ensures that ISTAR assets, which are often described as high demand/low density assets, are employed efficiently. It must also be remembered that C-ISTAR reflects not just a passive capability, but also confers the opportunity to take immediate and decisive action, including the use of weapons.<sup>599</sup>

This idea is probably best demonstrated in the concept of the sensor-shooter, this is an aircraft that not only provides the ability to conduct ISTAR activities, but can also then act on this information through kinetic effect. Aircraft that provide this capability today include the MQ-9 Reaper unmanned aerial vehicle, and the not yet operational F-35.

#### Precise Effects – timely, kinetic and non-kinetic, across the battlespace

One of the ongoing debates about modern airpower in small wars, has been the discussion as to whether kinetic effects or non-kinetic effects are a more important role for airpower in this environment. This is an area that will be revisited in the next chapter. However, the ability of modern airpower to deliver precise effects, whether kinetic or non-kinetic, is one of its most powerful attributes. The RAF believe that this ability to deliver timely and precise effect is one of its most enduring capabilities. By kinetic effect we refer to all those roles that involve the application of firepower, non-kinetic are those roles that do not involve the application of firepower.

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<sup>599</sup> RAF, *Intelligence*, available at <http://www.raf.mod.uk/role/intelligence.cfm> (accessed 22 April 2017)

One of the key discussions around the use of kinetic airpower in modern small wars is the potential damage that collateral damage causes to the overall strategic aim of the operations. Colonel Merrick Krause has written about this topic and describes a concept called the ‘atrocities threshold’, this refers to the political will to digest collateral damage and interestingly, the propaganda value that collateral damage gives to asymmetric opponents:

An important mechanism, referred to here as the atrocities threshold, affects the conceptualization, planning, and conduct of postmodern military operations. The will of both the public and elected leadership is influenced by the number and type of casualties, depending upon a number of factors, including whether or not the casualties are civilian, children or adults, women or men, and documented by the media.<sup>600</sup>

The use of civilian casualties by insurgents as a propaganda weapon against western coalitions has been an increasing factor in recent conflicts. There are many reasons for collateral damage; poor intelligence, human error etc, however regardless of how targeting technology evolves into the future, collateral damage and civilian casualties will *always* be a part of conflict. As Jeremy Black has analysed:

The advisability of bombing in COIN operations was questioned given the frequent difficulty of identifying targets separable from civilians and the problems posed by a hostile response to bombing in a context within which local support was sought. Thus, in Afghanistan, air strikes compromised such support and also had an adverse impact elsewhere, notably in neighbouring Pakistan.<sup>601</sup>

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<sup>600</sup> Col Merrick E. Krause, ‘Airpower in modern war’, in *Air & Space Power Journal*, vol. 29, no. 3 (May-June 2015), p. 48

<sup>601</sup> Jeremy Black, *Air power* (Lanham, MD, 2016), pp 300-1



The ability of modern air forces to minimise the occurrence of civilian casualties is a vital challenge for the future. However, the capability to deliver precise kinetic effect is a vital component of airpowers contribution to modern small wars.

Kinetic and non-kinetic effects in small wars have a significant impact on operations. As discussed, the challenge in relation to kinetic applications of airpower is predominantly around the identification of target sets. Furthermore, as Joel Hayward has argued:

Designing target sets to punish insurgent groups successfully for their maleficence is almost impossible.<sup>602</sup>

This is in stark contrast to the policies of air control examined earlier in this work. In the 1930s the RAF developed a strategy that described collective responsibility, thus if you were supporting or aiding insurgents, you too could become a target of retribution through bombing, in the contemporary world this would-be anathema, and indeed illegal. Thus, there has been a tendency to focus more on the non-kinetic effect of airpower. Roles in this area include; ISTAR, casualty evacuation, propaganda, electronic warfare and many more. While kinetic effect is the most visible of airpower contributions, arguably, non-kinetic roles are even more important. In the present-day operations against ISIS in Iraq, the RAFs intelligence

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<sup>602</sup> Joel S.A. Hayward, 'Air power and insurgency: some preliminary thoughts', in Joel S. A. Hayward (ed.), *Air power, insurgency and the 'war on terror'* (Cranwell, United Kingdom, 2009), p. 12

assets are some of the busiest, with the ISTAR force being responsible for ‘30-40% of the Coalition’s total ISTAR output’.<sup>603</sup>

As discussed earlier there will always be collateral damage whenever military force is applied, so the question becomes how this can be addressed. The facts support the argument that insurgents are responsible for far more civilian deaths than airpower, in Afghanistan for example:

According to the National Counterterrorism Center, terrorist attacks in Afghanistan were responsible for 6,796 casualties in 2009. Comparatively, ISAF actions accounted for 657 casualties, and only 78 of those were attributable to airpower [...] The reality is that between 2007 and 2009, nearly 14,500 air-to-ground weapons releases occurred in Afghanistan and less than one-tenth of one percent resulted in civilian casualties<sup>604</sup>

However, insurgents are becoming increasingly adept at leveraging social media and the internet to paint a picture of the attacking forces that supports their view of events. The ability of air forces to counteract this through electronic warfare and cyber warfare will be a key to future operations.

We cannot escape the fact that one of the enduring principles of the application of *modern* airpower is its ability to have precise effects.

Kinetic airpower is an important element of combined arms employment and its primary role in counterinsurgency operations is to

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<sup>603</sup> ‘ISTAR firmament: the future of the RAF’s combat air reconnaissance assets’, in *Janes Defence Weekly*, p. 5, available at [http://www.janes.com/images/assets/332/72332/ISTAR\\_firmament\\_the\\_future\\_of\\_the\\_RAf\\_s\\_combat\\_air\\_reconnaissance\\_assets.pdf](http://www.janes.com/images/assets/332/72332/ISTAR_firmament_the_future_of_the_RAf_s_combat_air_reconnaissance_assets.pdf) (accessed 24 August 2017)

<sup>604</sup> Norton A. Schwartz, ‘Airpower in counterinsurgency and stability operations’, in *Prism 2*, no. 2, p. 131

provide fire support.<sup>605</sup>

The potential for the future is for the kinetic effect to be more precise and the non-kinetic effect to be more reactive, responsive and supportive across the entire spectrum of operations.

### Battlefield Mobility – tempo and protection

Battlefield mobility, especially in a small wars environment, is seen by the RAF as a key enabler of operations. Afghanistan is a great example of this, where land communications became so dangerous that the ground forces relied heavily on the ability of rotary wing aircraft to move men and materials into and around the area of operations. The RAF argue that this capability provides military leaders with the ability to significantly affect tempo, while also offering protection.

A significant step forward was made in 1999 with the establishment of Joint Helicopter Command, this organisation brings together the battlefield military helicopters of the British Army, Royal Air Force and Royal Navy. It's inventory comprises of more than 200 helicopters split by designation of 'lift, find and attack'.<sup>606</sup>

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<sup>605</sup> Colonel Eugene L. McFeeley, *Balancing the kinetic effects of airpower with counterinsurgency objectives in Afghanistan* (US Army War College, PA, 2009), p. 12

<sup>606</sup> 'UK JHC prepares for Future Force 2025 and global contingencies', in *Jane's International Defence Review* (28 March, 2018), available at <https://www.janes.com/article/78905/uk-jhc-prepares-for-future-force-2025-and-global-contingencies> (accessed 15 September 2018)

The application of battlefield mobility in contemporary small wars has been significant. As discussed, the ability of rotary wing aircraft to supply and sustain isolated troops has enabled British forces to establish and maintain strongpoints in an environment where insurgents have made road communication very problematic. This benefit has been seen in Afghanistan and in Iraq. Since the Malayan conflict in the post-war period the application of battlefield mobility has been increasing in significance. In Malaya, as has been discussed, helicopters were a key enabler of counterinsurgent activities. As helicopters have evolved the roles that they can perform have widened. Today the RAF fields a wide spectrum of rotary aircraft, these include; Chinook, Puma HC2 and Griffin HAR2 aircraft. One of the key helicopters in the past thirty years has been the Chinook, the workhorse of the RAF's support function, the Chinook offers troop transport, resupply and battlefield casualty evacuation.

**Photo 36 - Troops boarding a Chinook Helicopter**



**Source:** RAF, available at <http://www.raf.mod.uk/equipment/chinook.cfm> (accessed 27 April 2017)

Since its introduction in the Malayan Emergency the helicopter has played an increasingly important part in all the RAFs subsequent small wars. However, this has not been without challenges. Although the helicopter provides a flexible platform on which can be delivered numerous functions, the challenge has been its vulnerability to asymmetric forces. By its very nature, the helicopter is slow moving and operates at lower altitude, this has made it susceptible to ground attack.

Helicopters will continue to be an integral part of future small wars. Like aircraft evolution, the helicopter of the future will be stealthy and multi-role. The challenge that needs to be addressed is the vulnerability of advanced helicopters to asymmetric threats, this is particularly acute given the proliferation of advanced MANPADs (man portable air defense systems), like the SA-14 described earlier.

#### Force Protection – reach, responsiveness and precision

Force protection, or the ability to support ground forces, kinetically and non-kinetically, has been one of the principal roles of airpower in modern small wars. Debate as to the efficacy of close air support, and the much-publicised errors that have occurred in this arena, has led many to question the suitability of many modern fast-jets to this role. As Jeremy Black has argued:

Operations in Iraq and Afghanistan also reveal a lack of flexibility on the part of "fast jets"<sup>607</sup>

This is linked to the ongoing debate within the American military as to the future of dedicated close air support aircraft, such as the A-10 Warthog. Rotary wing aircraft

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<sup>607</sup>Jeremy Black, *Air power* (Lanham, MD, 2016), p. 274

are the best equipped to perform this role, however, in contested environments these aircraft are not ideally suited. Thus, we have seen a proliferation of fast jets performing close air support, sometimes with negative consequences.

The application of force protection in Afghanistan and Iraq has been highly publicized within the media, since the possibility of civilian casualties is higher when targeting insurgents. However, the ability of aircraft to support ground forces has been a key enabler of operations in these two conflicts. The challenge for air forces operating in a small wars environment has been that the aircraft available to them, are not always well suited to the role they are trying to perform, as Joel Hayward has stated:

Slower-speed, armoured, survivable and precise fixed-wing aircraft and gunships with good loiter capacity (such as the A-10 Warthog, the AC-130H Spectre and the AC-130U Spooky) may seem the answer [to providing close air support], but few air forces have them and, in the case of the gunships, few can afford them. UAVs (unmanned aerial vehicles) and UCAVs (unmanned combat aerial vehicles) are accordingly becoming far more numerous<sup>608</sup>

The proliferation of UAVs and UCAVs has been marked in the RAF in the last two decades. While the primary mission of the MQ9 Reaper is intelligence, reconnaissance and surveillance (ISR), the RAF also states that:

Its secondary mission is to provide pilot-commanded kinetic effect to Land Force commanders for fleeting targets that “pop up” in the battlespace and also to provide Close-Air-Support (CAS) options to the Reaper’s supported unit.

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<sup>608</sup> Joel S. A. Hayward, ‘Air power and insurgency: some preliminary thoughts’, in Joel S. A. Hayward (ed.), *Air power, insurgency and the ‘war on terror’* (Cranwell, United Kingdom, 2009), p. 14

After its first introduction into service in 2007 as an ISR platform, within 12 months the Reaper was employing kinetic effect in Afghanistan. What is interesting about the Reaper is the fact that the RAF views its employment no differently than it does any other aircraft, manned or unmanned, this is seen in its view that:

The Rules Of Engagement (ROE) used for Reaper weapon release are no different to those used for manned combat aircraft; the weapons are all precision guided, and every effort is made to ensure the risk of collateral damage and civilian casualties is minimised, this may include deciding not to release a weapon.<sup>609</sup>

Regardless of the ROE in place for drones, the public perception of the use of drones in strike operations is conspicuously negative. As Scott Shane summarised in a New York Times article:

Some people find the very notion of killer robots deeply disturbing. Their lethal operations inside sovereign countries that are not at war with the United States raise contentious legal questions. They have become a radicalizing force in some Muslim countries. And proliferation will inevitably put them in the hands of odious regimes.<sup>610</sup>

Air forces around the world are investing heavily in unmanned aircraft and automation, due to this they will need to address public concerns about the perceived inhumanity of strike operations conducted by unmanned or autonomous military

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<sup>609</sup> RAF, *Reaper MQ9A RPAS*, available at <http://www.raf.mod.uk/equipment/reaper.cfm> (accessed 27 April 2017)

<sup>610</sup> Scott Shane, 'The moral case for drones', in *New York Times* (July 14, 2012), available at <https://www.nytimes.com/2012/07/15/sunday-review/the-moral-case-for-drones.html> (accessed 03 September 2018)

vehicles. As Sarah Sewall argues, ‘avoiding civilian harm effectively makes ethical military behavior an operational imperative’.<sup>611</sup>

The evolution of force protection has been closely aligned to the evolution of aircraft technology and to the perception of the relative importance of air operations in counterinsurgency environments. The evolution of technology within aircraft has had a decisive impact on the force protection role. The advance in precision guided munitions and the platforms from which they can be released has led to the utilization of modern fast jets in the force protection role. This has resulted in both positive and negative aspects. The positive impact relates to the ability of air forces, including the RAF, to retire older platforms while consolidating roles performed by newer platforms. Thus, in the RAFs case, we see the move away from the Tornado, and more reliance on newer platforms like the Eurofighter Typhoon, this will be further seen with the introduction of the F-35 in the coming years. Coupled with this has been an expansion of the role of UAV andUCAVs. The ability of these unmanned platforms to provide kinetic effect on the battlefield has introduced a great amount of flexibility to the employment of airpower in operational environments. The negative impact of some of these changes has been the perception that modern fast jets and unmanned aerial platforms do not provide the specialist capabilities many believe are required to provide close air support to troops in the field. This is particularly marked in counterinsurgency operations where the margin for error for weapons release has become smaller and smaller.

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<sup>611</sup> Sarah Sewall, ‘Ethics’, in Thomas Rid and Thomas Keaney (eds.), *Understanding counterinsurgency, doctrine, operations, and challenges* (Oxon, UK, 2010), p. 206



The future of force protection would appear to be moving more towards the reliance on unmanned platforms and modern fast jets to provide this capability, however, in recent years there has been an ongoing debate as to the efficacy of using older technology aircraft to provide close air support, aircraft like the A-10, and newer platforms that are based on prop or turbo-prop engine technology. The extensive use of the Embraer Tucano in counterinsurgency operations against the FARC guerrillas in Colombia is a great example of this. The Afghan government has also invested in this aircraft and as recently as early 2017, the US armed forces trialled the use of an OV-10 aircraft in Iraq. The OV-10 was used extensively in the Vietnam conflict.

**Photo 37 - OV-10 Bronco**



**Source** – *Airman Magazine*, November 1984

This potential return to the past offers significant advantages to air forces. On the one hand the aircraft are slow moving and have a good loiter capability, this is very

advantageous in a close air support role. Also, and potentially more significantly, these older aircraft offer the ability to provide close air support and counterinsurgency operations, at a price point that is very attractive.

When we look at the roles and capabilities that the RAF purports to have, all of these are relevant to the counterinsurgency environment. It must also be remembered that capabilities of air forces must be looked at in relation to the impact that non-kinetic applications can have, along with the more traditional kinetic roles. These various roles encompass:

Non-kinetic applications of airpower include electronic attack, counter IED support, combat search and rescue; intelligence, surveillance, and reconnaissance (ISR), command and control, space operations, mobility, and information operations. Kinetic applications of airpower include precision engagement in the interdiction, dynamic targeting or close air support roles<sup>612</sup>

The ability of airpower to influence operations in the small wars environment is significant. Colin Gray believes that one of the great fallacies perpetrated in discussions about counterinsurgency strategy and tactics is the belief that airpower can have little impact in this operational environment:

‘[...] Airpower can never be other than a minor player in the conduct of counterinsurgency warfare (COIN). Judgment: COIN is inherently land-, indeed, ground centric in nature. But this geostrategic and tactical fact does not mean that the varieties of airpower that support the ground effort can accurately or helpfully be described as being only of minor importance. In COIN today, airpower cannot be the leading edge to the military dimension, but it will always be quite literally

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<sup>612</sup> Colonel Eugene L. McFeeley, *Balancing the kinetic effects of airpower with counterinsurgency objectives in Afghanistan* (US Army War College, PA, 2009), p. 18

essential.<sup>613</sup>

As Gray rightly asserts, although airpower will not be the predominant component of counterinsurgency operations, like it was in the air control era, it is undoubtedly essential. However, the challenge for the other military services, is the fact that airpower has played such a decisive role in modern military conflict, that its ability to secure a high proportion of defence expenditure is significant. As Benjamin Lambeth argues:

[...] a high-stakes controversy has emerged in major capitals around the world centering on how best to apportion operational roles and budget shares among the services at a time of uncertain challenges and near-unprecedented fiscal constraints. Naturally, given the predominant role played by the allied air campaign in Desert Storm and the far-reaching claims made on behalf of air power as a result of its performance, the roles and resources controversy has gravitated toward air power as the principal lightning rod for debate.<sup>614</sup>

As a result of this, political decision-makers have looked for ways in which airpower can be utilised in a far greater way that it had been in previous decades. The current operations against ISIS are a good example of this. The strategy of the western coalition would appear to be based on the utilisation of airpower to provide breathing space for the retraining and re-arming of indigenous forces, in this case the Iraqi military and the Kurdish forces.<sup>615</sup> It remains to be seen whether this strategy will be successful.

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<sup>613</sup> Colin S. Gray, *Understanding airpower* (Alabama, 2009), p. 12

<sup>614</sup> Benjamin S. Lambeth, 'The role of air power going into the 21st century', in Natalie W. Crawford and Chung-In Moon, *Emerging threats, force structures, and the role of air power in Korea* (Santa Monica, CA, RAND Corporation, 2000), available at [https://www.rand.org/pubs/conf\\_proceedings/CF152.html](https://www.rand.org/pubs/conf_proceedings/CF152.html) (accessed 31 October 2016)

<sup>615</sup> *Arming Iraq's Kurds: Fighting IS, inviting conflict*, International Crisis Group, report no. 158 (12 May 2015), available at <https://www.crisisgroup.org/middle-east-north-africa/gulf-and-arabian-peninsula/iraq/arming-iraq-s-kurds-fighting-inviting-conflict> (accessed 04 September 2018)

As we analyse the contemporary RAF and its approach to doctrine and the application of airpower in small wars, can we consider them to be a learning organisation? An organisation that:

[...] typically adds to, transforms, or reduces organizational knowledge. Theories of organizational learning attempt to understand the processes which lead to (or prevent) changes in organizational knowledge, as well as the effects of learning and knowledge on behaviors and organizational outcomes.<sup>616</sup>

There is evidence to suggest that the RAF in recent decades has embraced learning in a certain way. It has shown an ability to pivot its approach and application of airpower, from one focused on conventional conflict, to one that appreciates the significance of unconventional operations. This is demonstrated in AP 3000 4<sup>th</sup> edition and Joint Doctrine Publication 0-30: UK air and space power (second edition), as well as the more informal communications coming from the RAF. Furthermore the establishment of the Directorate of Defence Studies (founded in 1977) and the RAF Centre for Airpower Studies (founded in 2007) shows a desire by the RAF to create organisations that can capture, analyse and disseminate information of relevance throughout the organisation. This viewpoint is captured well in the RAF's description of the Centre for Air and Space Power Studies:

The Royal Air Force Centre for Air and Space Power Studies (RAF CASPS) is an RAF think tank which focusses on the strategic and conceptual study of air and space power. It seeks to: generate evidence-based academic research; provide strategic influence through coordinated engagement with think tanks, allies and other professional bodies in the defence and policy space; *leverage the intellectual*

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<sup>616</sup> Martin Schulz, 'Organizational learning' in *The blackwell companion to organizations* (2002), available at <http://www.unc.edu/~healdric/Classes/Soci245/Schulz.pdf> (accessed 17 April 2014), p. 1

*horsepower of external institutions and RAF personnel; and help inculcate a philosophy of learning and critical thinking within the RAF* (emphasis added).<sup>617</sup>

One interesting way to analyse RAF thinking is to look at the annual reading list recommended by the Chief of the Air Staff. In 2017 this reading list includes books on ISIS, as well as the Libyan Civil War, its theme would appear to be about the changing international climate and how military power must adapt; a pivot from conventional to unconventional thinking.<sup>618</sup>

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<sup>617</sup> <https://www.raf.mod.uk/what-we-do/centre-for-air-and-space-power-studies/> (accessed 05 September 2018)

<sup>618</sup> RAF, *CAS reading list 2017*, available at <http://www.airpowerstudies.co.uk/sitebuildercontent/sitebuilderfiles/20170615-cas-reading-list-2017.pdf> (accessed 25 August 2017)

## Conclusion

From The First World War to The Second Gulf War the importance of military aviation has been growing. While airpower may only have played a supporting role in the First World War, by the start of the twenty first century it is a core component in the planning for all military operations. In relation to its use in unconventional operations, this work has analysed the use of airpower by the RAF in small wars. In particular it focused on the relationship between theory, doctrine and operations, and how each of these influenced the other. Furthermore, it has used this analysis to answer a key research question; does the evolution of doctrine, theory and practice, relevant to the use of airpower in unconventional operations, demonstrate that the RAF during this period can be considered a learning organisation?

This work has examined the evolution in the approach to the use of airpower in small wars and counterinsurgency operations by the RAF since the end of the First World War to the present day. It has done this through a focus on some key small wars campaigns, including; British Somaliland, Iraq, Aden, Palestine, Transjordan, North-West Frontier, Malaya, Kenya and also contemporary operations in the Middle East and Afghanistan. In doing this it has attempted to trace the impact of doctrine and theory on operations, and the impact of operations on succeeding theory and doctrine, through an examination of three core areas; theory, doctrine and practical application. Through this analysis it has looked to address a number of core research questions, all of which relate to the key research question mentioned above, namely; was there an evolution in relation to airpower doctrine and theory during this period as it related to small wars, did practical application during this period filter through into subsequent theory and doctrine, does the utilization of airpower in small wars in

the twentieth century provide lessons for its utility in the twenty first century, and finally, does the development of the RAFs approach to the utilization of airpower in small wars inform an opinion as to whether or not the RAF can be considered a learning organization. Much of this concluding chapter will address each of these points in detail.

***Was there an evolution in airpower doctrine, relative to small wars, in the period 1910-2010?***

When one looks at the evolution of doctrine in the last one hundred years there is an obvious dichotomy apparent. Between the end of The First World War and the start of The Second World War there is an apparent and traceable evolution in doctrine relevant to small wars, this began with the publication of CD-22 in 1922 and ends with the publication of AP 1300 in 1940. Within this period, we see a constant and consistent evolution in thought as to how airpower should be used in small wars. This doctrinal evolution is easily linked to the operational experience during this period. The RAF learned from its operations in British Somaliland, Afghanistan, Iraq and wider operations in the Middle East. The lessons from these operations were captured and ultimately encapsulated in later doctrinal publications. After The Second World War RAF doctrine was heavily influenced by two events; firstly, the creation of atomic and nuclear weapons, and secondly the establishment of NATO. The establishment of NATO has had a significant impact on RAF doctrine, as discussed in the previous chapter. NATO was established to create an alliance that would conduct operations against Soviet forces on the plains of Central Europe and did not consider small wars as an eventuality that needed to be accounted for. What

this meant for RAF doctrine was that NATO doctrine superseded RAF doctrine, and doctrinal change happened within the framework of NATO doctrine and not native RAF doctrine. Thus the first modern RAF doctrinal publication was only released in 1991. The RAF was to suffer the consequences of this in its small wars of the 2000s.

It is not until AP 3000 (4<sup>th</sup> Edition) that we see a concerted effort by the British military to officially examine the impact of asymmetric and hybrid warfare. There is now in the RAF a realisation that they must prepare for, and demonstrate an ability to play their part in, the *Comprehensive Approach*, as codified in AP 3000. Thus, when we analyse the period there are two waves of evolution, the first between 1920 and 1940, and the second beginning in 2004, it is hoped that the second wave will continue to show an evolution in doctrine, however the danger is that 2004 represents a point in time and not a transitory period from which further innovation and evolution of doctrine will begin.

This new wave of focus on asymmetric and hybrid warfare is borne of nearly two decades of operations within small wars environments. However, this needs to be balanced with the evolving threats posed by the re-emergence of Russia and the growth of Chinese military capability. Thus we have a scenario where although the RAF are operating extensively within small wars environments today, they inevitably need to also focus on their conventional role and what will be required to carry this out in the future. It is this balancing act that poses a risk, too much emphasis on one side has a detrimental effect on the other. This is where the advantages of a dynamic and evolutionary approach to doctrine creation and dissemination can prove invaluable. As Air Commodore Tim Garden has argued:



If the thoughts of today are not dated in ten year's time by the march of technology and the countermoves of potential enemies, then we are not thinking enough.<sup>619</sup>

Thus there is a requirement to not only think more, but to construct a doctrinal creation and dissemination process that ensures that doctrine is always relevant.

### ***Was airpower theory during the period examined reflected in airpower doctrine?***

British theorists had a significant impact on airpower in the interwar years, in particular Hugh Trenchard and John Slessor, however we do not see a significant British influence in the period after the end of the Second World War. Although John Slessor was to write extensively on nuclear theory, this topic was dominated by American theorists, writers like Bernard Brodie. In the main nuclear theorists were American, and airpower theorists also tended to be from the US, men like John Boyd and John Warden. British historians have written extensively about the history of airpower, but there is a dearth of British *theorists*. This is not a purely British phenomenon; the development of airpower theory has been limited in the last fifty years. Jeremy Black has recently highlighted a simple but impactful fact:

In the early twenty-first century, there have been almost no major theoretical innovations or developments in air power. Practitioners today are more centered on method than outcomes.<sup>620</sup>

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<sup>619</sup> Air Commodore Tim Garden, 'Air power and the Royal Air Force, lessons from the past', in Group Captain Andrew Vallance, *Air power, collected essays on doctrine* (London, 1990), p. 48

<sup>620</sup> Jeremy Black, *Air power* (Lanham, MD, 2016), p. 299

Thus, it is not surprising to conclude that there is little evidence of theory influencing doctrine in the RAF context after the Second World War. What is sometimes argued is that theory abounds and that the topic is well catered for, however when one looks at modern airpower writing it tends to focus on the history of airpower and some commentary on its future direction, there has been little if any focus on the *theory* of airpower and its employment. What is also interesting to note is that in the interwar period the writers of theory, were quite often also significant influencers when it came to doctrinal content, for example Trenchard's influence on the RAF, and Mitchells on the output of the Air Corps Tactical School (ACTS).

***Did practical experiences of airpower in small wars during this period filter through into subsequent airpower doctrine and theory?***

As has been shown, there are undoubtedly linkages between the practical application of airpower in small wars and doctrinal evolution, this is particularly apparent in the case of the interwar period. However, this same influence has not been seen in relation to airpower theory related to small wars. It can be argued that there has been a dearth of theory written specifically about the employment of airpower in small wars, work by John Andreas Olsen and David Jordan is the exception, rather than the rule in this regard.<sup>621</sup> Although works do exist, the ratio of writing about

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<sup>621</sup> For example see, John Andreas Olsen, *Airpower Applied: U.S., NATO, and Israeli Combat Experience* (2017), *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd* (2015), *Air Commanders* (2012), *The Evolution of Operational Art: From Napoleon to the Present* (2010), *A History of Air Warfare* (2009), *John Warden and the Renaissance of American Air Power* (2007), *Strategic Air Power in Desert Storm* (2003), *Asymmetric Warfare* (2002), *A Second Aerospace Century* (2001); David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016); David Jordan, 'Air and space power in the contemporary era: 1990-2030', in David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016)

conventional as opposed to unconventional airpower is not representative of the application of airpower today. From Douhet to Warden, airpower theorists have tended to focus on the employment of airpower in a conventional sense.

Contemporary writers who have written about airpower in small wars, like Corum, Wray, Towle and Omissi have provided an historical review of airpower in small wars in the last century, but have not analysed that experience with a view to theorising on the application of airpower in small wars into the future.

***Does the application of airpower in small wars throughout the period provide lessons for its utility in the 21st century?***

Airpower, and its utilisation in armed conflict, is now over one hundred years old.

Despite this, there has been, and continues to be, debate about how airpower is to be utilised, As David Jordan states, this debate:

[...] often heated – has ebbed and flowed over the ensuing decades, frequently as practitioners, politicians and analysts, use the most recent conflict to espouse a particular view of airpower and the ‘right way’ to use it.<sup>622</sup>

While it is dangerous to attempt to seize upon the lessons of the most recent conflict to plan for the next, it is equally dangerous to ignore the lessons of the past. With that sentiment in mind, we must understand what lessons can be learned from the RAF use of airpower in small wars over the last one hundred years. One of the ways in which western militaries can better learn from the past is to put in place

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<sup>622</sup> David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, Christopher Tuck, C. Dale Walton, *Understanding modern warfare* (Cambridge, 2016), p. 228

mechanisms to allow them to learn more effectively. Matthew Kowalski explains this well when he states that in order for western militaries to be more successful in the prosecution of modern small wars there are three areas that must be addressed:

First, “Western” militaries need to place greater emphasis on a political response to the contemporary confrontation and further develop their abilities to wage unconventional warfare, particularly MOOTW. Second, “Western” militaries must take more effective measures in creating the necessary functions to better learn from their mistakes. Third, “Western” governments must recognise the inherent limitations in attempting to eradicate and annihilate “terrorists.”<sup>623</sup>

It is Kowalski’s second point that must be an area of focus going forward in order to capture and leverage the existant knowledge. The body of knowledge used to extrapolate must include emergent trends and threats, but this information must also be combined with the experiences of the past. As Dave Sloggett has so presciently stated:

One of the enduring aspects of air power in its first century is its ability to be flexible, agile and adaptable to changing technology and geostrategic viewpoints. In its second century, those enduring characteristics are unlikely to change.<sup>624</sup>

The ability of air forces and airmen to correctly analyse the past for potential lessons is a crucial aspect of creating doctrine and theory for the future. As Neville Parton has so eloquently stated:

The question, therefore, is not so much whether or not history has anything to offer, but how people should be trained to understand what

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<sup>623</sup> Matthew Kowalski, ‘Global insurgency or global confrontation? Counter-insurgency doctrine and the “long” war” on terrorism’, in *Defense & Security Analysis*, vol. 24, no. 1 (March 2008), pp 65-71, p. 68

<sup>624</sup> Dr. Dave Sloggett, *A century of air power* (Barnsley, 2013), p. 193

can be learned. They need to be given an “analytical toolbox” necessary to determine what may be usefully deduced.<sup>625</sup>

So what are the key lessons that can be learned from the first one hundred years of the RAFs use of airpower in small wars? Certainly in the period studied we see a significant trend towards the reduction in the kinetic application of airpower in small wars and an increase in the use of non-kinetic applications. In a practical sense this results in the increased use of airpower in a supporting role. Key applications include mobility and reconnaissance, both of which have been increasing in importance throughout the last century. Certainly in the last two decades, mobility in particular has become a key airpower role. However, this conclusion must not detract from the important part that kinetic applications of airpower can bring to a small wars environment. Again this is typically in a supporting role, however the ability of airpower to provide fire support and ‘precise effect’ is, and will be, enduring.

***Does the development of doctrine during this period tell us something about the ability, or inability, of the RAF to implement practical changes based on the evidence of operational experience? (i.e. can the RAF be considered an effective learning organization?).***

When one looks at the period in question it is not straight-forward to determine whether the RAF can be considered a learning organisation. If we focus on two key aspects this becomes clear. Firstly, did the RAF add to, transform or reduce

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<sup>625</sup> Group Captain Neville Parton, ‘In defence of doctrine...but not dogma’, in *Defense & Security Analysis*, vol. 24, no. 1 (March 2008), pp 81-9, p. 84

organisational knowledge during this period? and secondly, did the RAF take a systems thinking approach, or rather did they evolve their thinking in silo's, thus not appreciating the impact as experienced throughout the organisation. When one looks at the period through the context of these two questions then a clear dichotomy emerges between the interwar period and the post Second World War period.

It is apparent within the interwar period that the RAF certainly added to and transformed their knowledge base. This is seen in the evolution of interwar doctrine and specifically the elements of that doctrine that related to small wars. However, even in this period of evolution, this thinking seems to have been done in a silo; the thinking of how to conduct air operations in a small wars environment did not seem to influence core conventional doctrine. Furthermore, informal doctrine, as evidenced through staff college lectures, once again appears to have focussed solely on the applicability of that thinking in a small wars environment and not its potential impact on wider doctrine. This is evidenced in an analysis of the small wars syllabus of the RAF Staff College in the interwar period.<sup>626</sup>

When we look at the theoretical writings, there is a dearth of theory published in the interwar period that talks to the experience of conducting operations in a small wars environment, thus there does not appear to be a theoretical outlook to influence

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<sup>626</sup> For a list of lectures given as part of the small wars syllabus, see, Andrew John Charles Walters, *Inter-war, inter-service friction on the North-West Frontier of India and its impact on the development and application of Royal Air Force doctrine* (PhD thesis, University of Nirmingham, 2017), Annex 5, pp 423-9

higher level RAF thinking, as was evidenced with the impact that interwar airpower theorists (eg. Douhet and Trenchard) had on conventional doctrine.

When one looks at the post Second World War period this lack of theoretical writing on airpower in small wars is compounded by a lack of doctrinal focus. Whereas the interwar RAF gave considerable attention to the small wars environment, coming out of the Second World War this attention faded. It is not really until the late 1980s and 1990s that we see a resurgence in writing about the small wars environment, and not until the 2000s do we see this reflected in official RAF publications.

Thus the conclusion is that the RAF displays some characteristics of a learning organisation, at a number of points in its history, however it would be untrue to say that the RAF *is* a learning organisation. It does not appear to have the attributes that you would expect to find in a learning organisation. A learning organisation is an organisation where:

people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.<sup>627</sup>

The RAF certainly has the experience of operating in a small wars environment, probably more so than any other western air force, however their focus until very recently has still been on conventional capability and planning for a conventional conflict.

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<sup>627</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (Revised edition, London, 2006), p. 3

A point of focus for modern military forces needs to be on the concept of adaptability. As can be seen in the analysis conducted in this work, the doctrinal creation process is slow at the best of times, thus in the future a new concept of doctrine, or perhaps a new process for its creation and dissemination needs to be considered. The lag that has been demonstrated is simply at odds in the digital age in which military forces need to operate. Benjamin Jensen in discussing how military officers need to escape the ‘iron cage’ of doctrine, argues that:

‘doctrinal change requires *incubators*, informal subunits established outside the hierarchy, and *advocacy networks* championing new concepts that emerge from incubators. Ranging from special study groups to war games, test beds and field exercises, incubators provide a safe space for experimentation and the construction of new operational concepts. Incubators form sites where officers engage in what scholar-practitioner Thomas Mahnken calls speculation, a search ‘to identify novel ways to solve existing operational problems’. These concepts [...] become the foundation of new doctrine articulating a theory of how to fight and win future conflicts’.<sup>628</sup>

Further research related to the areas highlighted above would be very beneficial. Examples of areas requiring exploration include; quantitative analysis of small wars and counterinsurgency operations, in particular the analysis of aircraft type and sortie rates of kinetic and non-kinetic airpower, an analysis of fiscal spending in the last number of decades to understand where RAF spending has been focussed and whether or not this is justified through its actual application. Finally, and one of the key areas for further analysis, would be a review of educational strategy within the

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<sup>628</sup> Benjamin Jensen, ‘Escaping the iron cage: the institutional foundations of FM 3-24. counterinsurgency doctrine’, in *Journal of Strategic Studies*, vol. 39, no. 2 (2016), pp 213-230, p. 214



contemporary RAF and an understanding of the linkages that exist between learning and the doctrinal creation process within the RAF. As Jeremy Black has argued:

Whatever the nature of the distribution of international power in the future, it is likely that major states will continue to have to plan for symmetrical and asymmetrical conflict, and for high- and low-tech military operations, In turn, these categories are malleable, may require continual redefinition, and can overlap.<sup>629</sup>

Thus, one of the greatest challenges for modern air forces, including the RAF, is to get the balance right. On the one hand to ensure capability to conduct conventional operations, while on the other being cognizant of the current threat landscape and the nature of operations that need to be conducted. Air Chief Marshal Sir Andrew Pulford recognised this in a speech in 2015 when he stated that:

‘Global strategic trends 2040’, ‘Future operating environment 2035’ and a ‘Primer for the new future air and space operating concept’ are 3 key documents now informing the UK’s ongoing strategic defence and security review. The picture they paint is one of complex global challenges on the horizon with no simple solutions for their resolution.<sup>630</sup>

It is documents like these that will help inform doctrine. Doctrine will be a key enabler of helping states plan for the future. A key way in which this can be achieved is through the creation and dissemination of *appropriate* doctrine, as Hoiback has argued:

[...] the point is that doctrine ought to be explanatory, culturally sensitive, and authoritative in order to have effect.

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<sup>629</sup> Jeremy Black, *Air power* (Lanham, MD, 2016), p. 311

<sup>630</sup> Air Chief Marshal Sir Andrew Pulford, ‘Thinking to win’, speech delivered at the *RAF’s Air Power Conference* (17 September, 2015)

The balancing of the three elements above, i.e. theory, culture and authority, can be done in different ways, and by doing so can produce three 'ideal types' of doctrine: doctrine as a tool of command, doctrine as a tool of change, and doctrine as a tool of education. As a tool of command, doctrine says authoritatively what to do; as a tool of change, it says authoritatively what to be; and, as a tool of education, it says what we do, and why, and who we are for the time being.<sup>631</sup>

The only way the RAF can truly display the flexibility required to meet future challenges is by becoming, in every sense, a true learning organisation. An organisation that captures and disseminates knowledge, that encourages and drives learning amongst its people, and encourages and supports engagement and feedback at all levels of the organisation. The good news is that the RAF has begun to do this.

The role of the RAF Learning Force is:

[...] dedicated to helping members of the Royal Air Force, Royal Air Force Reservists their families and MOD employed personnel realise their full potential through Lifelong Learning.

The Royal Air Force provides its personnel with a range of Educational and Training opportunities.<sup>632</sup>

While the RAF facilitates and encourages learning, it also emphasizes the importance of the person's commitment to learning, thus it defines personal development as:

Where an individual takes responsibility for experiential or academic learning in achieving their own personal goals and career aspirations, which also enhance the effectiveness of the organisation.<sup>633</sup>

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<sup>631</sup> Harald Hoibacvk, 'The anatomy of doctrine and ways to keep it fit', in *Journal of Strategic Studies*, vol. 39, no. 2 (2016), pp 185-197, p. 190

<sup>632</sup> <https://www.raf.mod.uk/raflerningforces/> (accessed 13 June 2017)

<sup>633</sup> <https://www.raf.mod.uk/raflerningforces/usefulinfo/personaldevelopmentrecord.cfm> (accessed 13 June 2017)

Thus the RAF on the one hand provides the apparatus for learning, on the other it emphasizes the importance of the individual in achieving development. This is a key trait of a learning organisation. The final part of the equation is to ensure that an environment is created:

where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.<sup>634</sup>

The RAF has the foundations in place to become a learning organisation and in an age where it is becoming increasingly difficult to attract and retain top talent, this will become ever more important. Thus the RAF must now utilise these foundations to deliver on the vision of the RAF Learning Force.

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<sup>634</sup> Peter M. Senge, *The fifth discipline: the art and practice of the learning organization* (Revised edition, London, 2006), p. 3

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### Imperial War Museum – Photograph Collection

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