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NO HELL LIKE TAC HEL:
A ROLE FOR TACTICAL AVIATION IN COUNTERINSURGENCY OPERATIONS

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ABSTRACT

Rotary wing tactical aviation air power has evolved considerably in both breadth and relevance since its introduction into military operations in the 1940s. Tactical aviation, specifically helicopters, has now become one of the most decisive and potent capabilities currently employed on the modern battlefield. Given the increasingly complex, dangerous and dynamic nature of modern insurgencies, the true value of rotary wing capabilities has come of age in the Iraq and Afghanistan counterinsurgency (COIN) campaigns of the early 21st Century. However, tactical aviation and COIN finds its roots in the smaller insurgencies commencing with the British and French experiences with "Air Control" doctrines in the 1920s. The introduction of the helicopter into military service in Burma near the end of the Second World War spawned several decades of fervent development in both rotary wing technology and the adaptation of traditional air mobility doctrine to become helicopter-centric. This evolution was most poignant in conflicts such as Algeria and Malaya where the inherent advantages of the helicopter were leveraged by commanders to great tactical success in the COIN environment. The advent of Vietnam and the Cold War pushed the US to fundamentally alter its understanding of conventional mobility with the conception, design, and deployment of the Airmobile Division to Vietnam. COIN campaigns evolved to require much more of the secondary supporting effects of air power such as tactical transport, logistic resupply, ISR, and MEDEVAC which are most efficiently provided by rotary wing platforms. Canada deployed noteworthy air power capabilities to the COIN campaign in Afghanistan and this necessitated a significant period of adaptation in transitioning from a conventional war fighting focus to supporting COIN operations. In spite of the challenges, the RCAF was able to adapt its tactics and doctrine to succeed in providing first class tactical aviation support to coalition ground forces in COIN.

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ABBREVIATIONS

ACO	Aersopace Control Order
AFDD	Air Force Doctrine Document
AHO	Above Highest Obstacle
AII	Area of Intelligence Interest
ALI	Air-Land Integration
ALN	*Armée de Liberation Nationale*
AMC	Air Mission Commander
AO	Area of Operations
CAS	Close Air Support
ARVN	Army of the Republic of Vietnam
CBI	China-Burma-India
C2	Command and Control
CCAT	Canadian Contracted Air Transport
CHF-A	Canadian Helicopter Force-Afghanistan
CHUD	Canadian Heron Unmanned Aerial Vehicle Detachment
CO	Commanding Officer
CoG	Centre of Gravity
COIN	Counterinsurgency
CSAR	Combat Search and Rescue
FW	Fixed Wing
FLN	Front Liberation Nationale
FM	Field Manual
FOB	Forward Operating Base
GFC	Ground Force Commander
HMG	Heavy Machine Gun

HQ	Headquarters
IED	Improvised Explosive Device
IO	Information Operations
ISR	Intelligence, Surveillance, Reconnaissance
LUC	Lifted Unit Commander
MANPADS	Man-Portable Air Defence System
MCP	Malayan Communist Party
MEDEVAC	Medical Evacuation
METTT-C	Mission, Enemy, Terrain, Troops, Time- Civilians
MRLA	Malayan Races Liberation Army
NATO	North Atlantic Treaty Organization
NVA	North Vietnamese Army
RAF	Royal Air Force
RCAF	Royal Canadian Air Force
RPG	Rocket Propelled Grenade
RW	Rotary Wing
SAM	Surface to Air Missile
SLOC	Strategic Lines of Communication
SOF	Special Operations Forces
TACAD	Tactical Arrival and Departure
TAIS	Tactical Air Intelligence Section
TAU	Tactical Airlift Unit
TFK	Task Force Kandahar
TSE	Theatre Support Element
UAV	Unmanned Aerial Vehicle
USAF	United States Air Force
USAAF	United States Army Air Forces

> Like all novices, we began with the helicopter (in childhood) but soon saw that it had no future and dropped it. The helicopter does with great labor only what the balloon does with no labor, but is no more fitted than the balloon for rapid horizontal flight. If the engine stops, it must fall with deadly violence, for it can neither float like the balloon, nor glide like the aeroplane. The helicopter is much easier to design than the aeroplane, but is worthless when done.
>
> -Wilbur Wright, 15 Jan 1909[1]

INTRODUCTION

Rotary Wing (RW) tactical aviation air power has evolved considerably since its introduction into military operations in the late stages of the Second World War. It has become one of the most decisive and potent enabling capabilities currently employed in modern conflict. However, the military helicopter and its associated doctrine have evolved inconsistently and often only out of the abject necessity dictated by the complex terrain and the asymmetric enemies commonly associated with the often intractable insurgencies of the 20th Century.[2] As a result of this evolution, the contemporary doctrinal roles of tactical aviation throughout the spectrum of conflict have become battlefield mobility, aerial firepower, and reconnaissance.[3]

Given the increasingly complex, dangerous and dynamic nature of modern insurgencies, the true value of RW capabilities has come of age in the Iraq and Afghanistan counterinsurgency (COIN) campaigns of the early 21st Century; however, RW aviation finds its doctrinal roots in the earliest use of air power following the First World War. While great strides in terms of the evolution of RW air power was derived through some of the major conflicts in the 20th century,

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[1] Walter J. Boyne and Donald S. Lopez . *Vertical flight: the Age of the Helicopter* (Washington: Smithsonian Institution Press, 1984), 22.
[2] Walter J. Boyne, *How the Helicopter Changed Modern Warfare* (New York: Pelican Publishing, 2011), 16.
[3] Department of National Defence, BGA-441-000/AF-000. *Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), 1-1

the most salient, important, and decisive contributions have been realized during the "small wars" and insurgencies of the 20th Century and early 21st Century.[4]

This study will examine the evolving doctrinal role of RW tactical aviation air power in the conduct of small wars and insurgencies and will link to the modern counterinsurgency campaigns in which both the North Atlantic Treaty Organization (NATO) and Western militaries have currently found themselves entangled. Focusing on RW capabilities, the doctrinal evolution of the use of tactical aviation air power in small wars will be examined to demonstrate how the introduction and employment of helicopters has fundamentally changed the manner and nature in which counterinsurgency campaigns have been fought throughout the 20th Century and into the 21st Century. Rotary wing aviation has enabled COIN through its inherent mobility, firepower, and Intelligence Surveillance and Reconnaissance (ISR) capabilities, thereby allowing commanders to achieve effects in a more timely and decisive manner in an increasingly complex and fast-paced operating environment. The helicopter has evolved in direct response to tactical problems presented to militaries on the battlefield and specifically addressed challenges relating to mobility, precision fires, operations in complex terrain, asymmetric threat, logistics, and the ISR gaps that so often beleaguer a counterinsurgency campaign.

The focus of this work is constrained to the far more difficult and delicate employment of tactical aviation air power in small wars and insurgencies rather than broadly examining the much more well-known conventional campaigns that involved RW. In particular, this study will focus on those most decisive and illustrative examples from small wars that best describe the considerable evolution of RW aviation capabilities. Much has been written about the combat role

[4] James S. Corum, and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 2.

of RW aviation in major conventional campaigns, but little has been written of the far more difficult and complex challenges of employing helicopters in dangerous asymmetric and politically complex environments marked by the active insurgencies of the past ninety years. The invaluable enabling capability that RW aviation air power brings to the current counterinsurgency fight has been informed and shaped by key lessons and doctrinal evolutions throughout the bloody insurgencies of the 20th Century.

Noted air power writers James Corum and Wray Johnson espouse the term "small war" to describe a low level conflict, such as an insurgency, as compared to a state-on-state conflict. They further contend that "… a war waged against a non-state entity and non-regular forces is a form of war very different from a war waged against a state with regular armed forces."[5] In these types of conflicts, Corum and Johnson argue that the application of air power is far more difficult as insurgents, guerillas, and terrorists in small wars rarely are able to be targeted and defeated through conventional applications of air power in the classic sense.[6] In other words, attacking and destroying an enemy that is not tied to, or willing to fight for and hold specific ground and who operate in small, agile, and dispersed groups is both complex and difficult. This characteristic makes it nearly impossible for a western military to defeat insurgents through classic campaigns of direct force-on-force engagements.

In small wars, the combatants often wear no uniforms and are indistinguishable from the local population, operating in small groups exploiting their inherent advantage of surprise, mobility, and initiative.[7] Wanton application of the traditional kinetic elements of air power in these conflicts often results in counterproductive and abhorrently high civilian casualties that

[5] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…, 7.
[6] *Ibid*., 8.
[7] *Ibid*., 7.

result in information operations (IO) victories for the insurgent forces and a loss of confidence and support by the general population for friendly forces. Rather, an indirect application of air power such as the use of tactical aviation resources for limited precision fires, reconnaissance, logistic resupply, psychological operations, and tactical transport often bear the greatest chance of tactical and operational success in the conduct of a small war.

Historians and theorists have thus far expended great effort in examining the contributions of fixed wing (FW) air power throughout the major campaigns and disparate small wars of the past ninety years. However, the helicopter, and by extension RW air power, has disproportionally contributed to military success in many of the counterinsurgency operations that have emerged since the end of the Second World War. Rotary wing platforms are by nature expensive to operate, temperamental and challenging to maintain, and highly vulnerable to small arms and anti-aircraft fire. High operating costs and these key vulnerabilities have caused the helicopter to evolve in a non-linear manner often only out of the necessity of the conflicts in which they were employed, rather than by willful and visionary design. Noted historian and author Walter J. Boyne contends that modern warfare has "thrust the helicopter into the forefront of virtual hand-to-hand combat over distances no greater than those encountered by the Roman legions" often characterizing helicopter warfare as a "bloody face-to-face combat with an equally well armed enemy."[8]

Many "conventional" air power assets such as tactical fighter and bomber aircraft have seen their roles and profiles evolve upwards to safer altitudes and further away from their targets and primary threats by employing standoff weaponry, stealth, and precision weapon delivery techniques, thus progressively reducing risk to both aircraft and aviators. Conversely, the

[8] Boyne, *How the Helicopter Changed Modern Warfare*…, 16.

helicopter has been forced to operate in an increasingly dangerous and more hostile battlespace, ever closer to the ground and threat to ensure survivability and continued close support of ground forces. The helicopter has also seen a progression towards independent operations in counterinsurgencies, providing decisive precision fires and timely surveillance to deployed commanders. Rotary wing aviation assets are at increased risk from the asymmetric nature of counterinsurgency warfare where the helicopter is highly vulnerable and the threat axis nearly impossible to predict.[9]

Paradoxically, the most potent threats to RW aviation in asymmetric theatres are from the most prevalent and widely available weapons systems such as heavy machine guns (HMGs) and rocket propelled grenades (RPGs), often only mitigated with sound tactics and considerable predictive intelligence effort. The most sophisticated air defence weapons such as man portable air defence systems (MANPADs), while incredibly potent and effective, are extremely expensive and are not easily accessed by most insurgents. The immutable fact is that no amount of technological evolution or standoff risk mitigation for the helicopter will ever create an environment for RW platforms that is free from risk, nor will it obviate the need for helicopters to continue to operate within the threat band of small arms effects in direct support of ground forces in constant contact with the enemy. It is for this reason that Boyne argues that modern "helicopter combat is more akin to the era of fixed bayonets than to other modes of current warfare that may be conducted via satellite from thousands of miles away."[10]

It should be noted that the application of air power in a COIN battlespace has become an inherently joint endeavor in contemporary conflicts. Significant doctrinal support for the notion

[9] Boyne, *How the Helicopter Changed Modern Warfare*…,16.
[10] *Ibid.*

of the joint nature of air power in COIN exists as the latest US publication on COIN, Field Manual (FM) 3-24, asserts that "Counterinsurgency operations are, by their nature, joint operations - and airpower and landpower are interdependent elements of such operations."[11] As an example, the Commanding General of III Corps in Iraq in 2005, Lieutenant-General Thomas Metz heralded the joint success of synchronizing and prioritizing air effects on the battlefield during his command. The airspace over Iraq throughout his command became truly "purple" in that it encompassed Army, Navy, Marine, and Air Force fixed and rotary wing, manned and unmanned platforms from surface to 60,000 feet, all focused and synchronized to provide joint tactical effects to the land forces conducting COIN operations. Fundamentally, he asserted that the complexity and dynamism of COIN operations demanded extremely high levels of "jointness" to ensure that the limited air power assets from all services were prioritized and apportioned to best effect for his ground commanders and fully integrated into the ground tactical plan.[12]

The evolution of rotary aviation air power and its abortive and often unplanned development spurred through the conduct of small wars is the overarching theme of this academic work. With this theme at the forefront, Chapter 1 will provide a theoretical overview of air power and counterinsurgency theories to provide a doctrinal foundation for subsequent discussion. Chapter 2 comprises an examination of the FW "air control" doctrine employed by the major imperial powers in their former colonial holdings following the conclusion of the First World War. Air control theories formed the basis for much of the doctrine that tactical aviation employs to this day. Great Britain's forays in Iraq and Somaliland, as well as France and Spain's

[11] Department of Defense. FM 3-24, Counterinsurgency (Washington, DC: U.S. Government Printing Office, April, 2009), E-1.
[12] Howard, D. Belote. "Counterinsurgency Airpower: Air Ground Integration for the Long War", *Air & Space Power Journal* (Fall 2006), 55-56.

actions in Morocco, produced significant challenges in policing and pacifying newly acquired, or re-acquired, and mostly lawless colonial holdings.[13] The controversial, and often brutally punitive, FW air control campaigns of these nations represent the birth of tactical aviation doctrine in small wars and offer insight into how the application of air power in insurgencies has evolved throughout the 20th Century. In Chapter 3 this paper will explore the introduction of the helicopter into military service in the closing months of the Second World War in the Burma campaign and the evolution and contribution of tactical aviation air power during the violent and decisive insurgencies in French Indo-China in the 1950s. This chapter will conclude with an examination of the British experience in employing tactical aviation air power in the Malayan Emergency from 1948-1960.

Chapter 4 will shift focus to the evolutionary and doctrinal acceleration experienced by RW air power during the insurgencies spawned during the Cold War through employment of helicopters in the successful French counterinsurgency campaign in Algeria from 1954 to 1962 and the early US military operations in Vietnam during the early 1960s. Lastly, Chapter 5 will examine a more recent application of RW air power by demonstrating how Canada adapted and evolved its tactical aviation doctrines to support Canadian and NATO ground forces in the execution of a complex modern counterinsurgency campaign. It will include a specific examination of the challenges and lessons of employing RW air power in a modern population-centric counterinsurgency campaign, discussed using the Canadian context and experience from the employment of the Joint Task Force Air Wing in Afghanistan from 2008-2011.

[13] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,7.

> We are quite good at killing , we Americans. We have melded technology and the taking of life to such an extent that the process can be, for us, a quite antiseptic experience. This is especially true in the realm of airpower. However, the next…phase in the war on terror will more closely resemble humanitarian-style interventions in fragile, failing, and failed (F3) states than Iraq-style invasions. Consequently, operations are likely to call less for the elimination of life than for the preservation and facilitation of life.
>
> -John W. Bellflower, *Small Wars Journal*, 2009[14]

CHAPTER 1: AIR POWER AND COIN, THEORETICAL FOUNDATIONS

INTRODUCTION

In discussing and investigating how air power in counterinsurgencies has evolved over time within the last century of conflict, it is vital to link both air power theories and the theoretical foundations of counterinsurgency warfare. The hybrid and combined doctrinal foundations of both air power and COIN outlined in this chapter will provide the basis for subsequent discussion on the evolution of air power in small wars. An overarching and complete literature review of both current doctrine regarding the employment of air power in the context of small wars or counterinsurgencies is revealing, if only for the paucity of sources available. It is clear that aside from a few key works, there has not been a great deal of rigour or effort applied to theory or doctrine for the employment of tactical aviation in support of COIN campaigns.

The available and widely accepted current doctrine on the conduct of COIN focuses entirely on the ground aspects of the prosecution of the campaign with only brief references to the supporting and enabling roles played by air power in executing operations in the COIN context. This is perhaps not surprising as the decisive COIN effects such as stability, security, increased governance, and gaining the trust and loyalty of a population are really only achieved

[14] John W. Bellflower,"The Soft Side of Airpower," *Small Wars Journal*, January 7, 2009, 1.

through tactical action on the ground under the direction of ground force commanders, living amongst and interacting with populations on a daily basis. However, the effects provided by aviation in a counterinsurgency often far outweigh the costs in terms of personnel and equipment.

This chapter will examine some of the relevant thinking and theories on both COIN campaigns in general and the employment of tactical aviation in support of these campaigns in particular. The helicopter and indeed RW aviation has evolved more often out of necessity rather than deliberate design, and it was only in the past fifty years that the platforms and technology have achieved sufficient relevance and capability so as to become decisive and useful in the military context. Rotary wing air power has now become a potent and highly valued capability in supporting COIN operations, worthy of its own air-centric COIN specific doctrine and considerable academic investigation.

COIN THEORY AND DOCTRINE

In late 2006, the US Army and the US Marine Corps developed and jointly released updated COIN doctrine in the form of *Field Manual 3-24, Counterinsurgency*, popularly known as *FM 3-24*. This consolidation of new doctrine and COIN best practices was heavily informed by the writings of noted COIN theorist David Galula and Australian Professor David Kilcullen. It included a compendium of the hard-learned lessons from the ongoing insurgencies in Afghanistan and Iraq.[15] Central to this largely land-focused document is the emphasis on the population gripped within an insurgency as the centre of gravity (CoG) of any COIN campaign and the focus on their protection and dislocation from the insurgency and the insurgents

[15] Department of Defense. FM 3-24, *Counterinsurgency* (Washington, DC: U.S. Government Printing Office, April, 2009) ,1-1.

themselves. This concept is not new but rather a re-statement of some key COIN imperatives and lessons learned in the successful 20th Century in COIN campaigns such as the French mission in Algeria from 1954-1962 and the British efforts in Malaya from 1948-1960.[16]

FM 3-24 aptly and succinctly defines an insurgency as "an organized, protracted politico-military struggle designed to weaken the control and legitimacy of an established government, occupying power, or other political authority while increasing insurgent control." It expands that at the centre of all insurgencies, and for that matter, all counterinsurgencies, is a struggle for *political power* with each side attempting to sway the population to see its position, authority, and mandate as legitimate.[17] Conversely, *FM 3-24* defines a Counterinsurgency as "military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency," expanding that COIN operations require both kinetic and non-kinetic actions along a spectrum of conflict that include "offensive, defensive, and stability operations to achieve the stable and secure environment needed for effective governance, essential services, and economic development."[18] The employment of air power offers great advantage, albeit coupled with great risk of unintended effects, to commanders in the execution of COIN campaigns across the full spectrum of conflict. *FM 3-24* also aptly concludes that in a COIN campaign "victory is achieved when the populace consents to the government's legitimacy and stops actively and passively supporting the insurgency." Thus *FM 3-24* now asserts, perhaps myopically, that the US has fully embraced the doctrine of population-focused

[16] Department of Defense. FM 3-24, *Counterinsurgency…,* 1-1.
[17] *Ibid*.,1-2.
[18] *Ibid*.,1-3.

counterinsurgency methods based on their recent operational experiences in both Afghanistan and Iraq.[19]

FM 3-24 draws heavily on the "tache d'huile" (oil spot) counterinsurgency theory that was first advanced and tested by French Generals (later Marshals) Joseph Gallieni in colonial Indochina and Louis-Hubert-Gonsalve Lyautey in colonial Algeria. This key theory establishes small nodes of stability and security within an insurgency (such as one small village at a time) and then methodically expanding outwards, eventually linking together to create a safe and secure environment of aggregated "ink spots." This expansion of the "ink spots" was followed by social and economic development being applied within a cleared region to ensure stability.[20] In *FM 3-24*, this concept is described and rebranded as the "Clear, Hold, Build" method where a counterinsurgent force creates a "secure physical and psychological environment, establishes firm government control of the populace and area, gains the populace's support" and then reinforces success by linking these areas of stability to one another. Lastly and most importantly, *FM 3-24* describes a COIN fight as a competition for the ability of the involved forces to learn and adapt more rapidly. In this vein, the doctrine describes the ability to "learn and adapt" as a key modern COIN imperative for US forces.[21]

Kilcullen further defines counterinsurgency as a "competition with the insurgent for the right to win the hearts, minds, and acquiescence of the population."[22] Famous for his simple and effective COIN thesis, *28 Articles: Fundamentals of Company Level Counterinsurgency,*

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[19] Department of Defense. FM 3-24, *Counterinsurgency…,* 1-3.
[20] Beckett, Ian and John Pilott. *Armed Forces and Modern Counter-Insurgency*. Sydney: Croom Helm Ltd, 1985), 4-5; David Fivecoat and Stuart C. Chapman. "Clear, Hold, Build: New Tactics to Defeat COIN", *Infantry* (Jan-Feb 2009). 2.
[21] Department of Defense. FM 3-24, *Counterinsurgency…,* 5-18.
[22] David Kilcullen."Twenty-Eight Articles": Fundamentals of Company-Level Counterinsurgency." *Military Review* 86, no. 3 (2006): 103.

Kilcullen cautions counterinsurgent forces on the indiscriminate use of firepower during a COIN operation by arguing that it can create "blood feuds, homeless people, and societal disruption that can fuel and perpetuate the insurgency." This argument is especially relevant for the use of air power in COIN as small errors in precision can often lead to adverse collateral effects such as damaged infrastructure or worse, non-combatants killed or injured. This tactical failure by a single actor within a campaign can thus become a strategically relevant IO failure that can adversely affect the outcome of a COIN operation; an unfortunate scenario that has played out too often in both Iraq and Afghanistan in a contemporary context.[23]

Noted COIN theorists Eliot Cohen and John Nagl posit that counterinsurgencies are a "strange and complicated beast" in that conflicts are all very unique and distinct due to their differing root causes, cultures, and operational environments.[24] This assertion offers significant challenges to COIN forces engaged in not only a military fight but also a fight for competing ideologies, often on the "home field" and terrain familiar to the insurgent forces. Cohen and Nagl assert that while insurgencies are often dynamic and challenging, they largely adhere to a common and definable revolutionary campaign plan and can be dealt with by applying commonly held principles and imperatives. These principles include establishing legitimacy of the COIN force and a legitimate government as the main objective of a COIN campaign. They argue that intelligence-led operations are of paramount importance, where the political realm takes priority over the military/security in isolating the insurgent forces from the population.[25] The difficulty with this concept is applying these excellent land-based guiding principles to the air component of any COIN campaign. This is a concept that will be explored in more detail in

[23] Kilcullen, *Twenty-Eight Articles: Fundamentals of Company-Level Counterinsu*rgency…,103.
[24] Eliot Cohen, Conrad Crane, Jan Horvath, and John Nagl. "Principles, Imperatives, and Paradoxes of Counterinsurgency." *Military Review* 86, no. 2 (2006): 49.
[25] *Ibid*., 49-51.

the final chapter on the challenges of applying COIN principles to the employment of Canadian RW air power in Afghanistan from 2008 to 2011.

AIR POWER IN COIN

While there has not been a great depth of scholarly effort expended upon the employment of air power in COIN and other small wars to date, there has been somewhat of a resurgence out of necessity within the last 10 years. In particular, some notable theorists have advanced concepts and ideas relating to air power in COIN as it pertains to the current conflicts in Afghanistan and Iraq, especially as they relate to *FM 3-24* and its apparent lack of an air-minded focus or understanding. Dr. James Fergusson, a Canadian aerospace power academic, points out the difficulty of defining the niche for air power in the counterinsurgency fight.[26] He asserts that traditional air power theories have always advocated the utilization of scarce air resources against strategic targets in a conventional conflict to force decisive victory. This concept of strategic targeting is near impossible in a counterinsurgency as there is a distinct lack of strategic targets than can be prosecuted and air power often needs to operate at the low tactical level to be effective in supporting ground manoeuvre. Fergusson brings forth an important concept, one that will carry as a thread throughout this paper; that aerospace capabilities in a counterinsurgency role more often serve a secondary, supporting role to enable safe and effective ground manoeuvre.[27]

Colonel (retired) Dennis Drew, a noted air power theorist and author, concluded that conventional conflicts and insurgencies differ in five major aspects: time, the civilian-military duality of insurgent strategy, tactics, logistics, and the operational centre of gravity. This is

[26] James Fergusson, "Introduction," in James Fergusson and William March, eds.. *No Clear Flight Plan: Counterinsurgency and Aerospace Power* (Winnipeg: University of Manitoba, 2008), 2.
[27] *Ibid*., 2-3.

important as current air power doctrine is largely based on the conventional application of air power to conventional military problems. Understanding these differences is vital to understanding the doctrinal shifts required by conventional aviators to bridge the COIN air power-doctrine gap.[28]

The first difference Drew outlined is the element of time. He argues that for the insurgent, time is a weapon where the longer the insurgency protracts, the more discredited the counterinsurgent force and government become. In conventional conflicts, it is clear that the patience and expectations of an increasingly interconnected world expect short and decisive victories in any conflict; this is hardly a realistic expectation in a COIN campaign. The second difference he calls the civilian-military "duality" of the insurgent strategy. By this, Drew infers that there are parallel campaigns ongoing in an insurgency to penetrate and bring the civilian population on side while also demonstrating the government's lack of control and their inability to deal with the insurgency through escalating violence and insecurity. The paradox is that the government of COIN forces must decisively win both battles while the insurgents need only to dominate in one. The third key difference is that the guerilla tactics often employed by insurgents easily blunt the conventional military might of government and COIN forces. Insurgent forces can pursue engagement with the government at the time and location of their choosing, while any civilian casualties incurred are often blamed on the inability of government forces to establish a secure environment. The fourth key difference is that in a conventional fight, logistic support chains flow in the same direction as the mean line of advance of the combatants. Insurgent guerillas, however, draw their logistic support from within the population base itself. Drew points out that in conventional conflict these supply lines offer excellent targets for air power to

[28] Dennis M. Drew. "U.S. Airpower Theory and the Insurgent Challenge: A Short Journey to Confusion." *The Journal of Military History* 62, no. 4 (1998): 809-811.

interdict while in a COIN campaign the supply line flows in the opposite direction and the targets are intermixed within the population and are near impossible to destroy effectively through air power without significant collateral damage and loss of innocent life.[29]

Lastly, Drew points out that unlike in a conventional fight, the centre of gravity in any insurgency is usually the same for both sides: the people. The widely held belief that air power is employed to best effect against the enemy's centre of gravity in a conventional campaign is no longer viable, nor is it desirable. This factor alone makes the battlespace in an insurgency infinitely more complex and fraught with significant risks in the employment of tactical aviation. Through a comparative study of the major US COIN campaigns of the 20th Century, Drew concludes that by failing to understand these five key differences, the US Air Force (USAF) has failed to produce coherent doctrine on the use of air power in a counterinsurgency but rather has focused on producing some "concise and well-reasoned modifications of traditional air power theory based on the consensus of 40 years of experience, research, and publication."[30] He argues that this iterative and non-deliberate approach to COIN doctrine has left the USAF confused and unfocused by constantly searching for its role within modern counterinsurgency campaigns while its doctrine languishes, still focused largely on conventional campaigns and nuclear strike.[31] This confusion is further amplified in the USAF due to the unequal distribution of RW platforms within the US military. Comparatively, the USAF operates a scant few RW platforms as compared to the US Army and US Marines which might explain the lack of coherent USAF doctrinal focus on air power supporting effects in COIN.

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[29] Drew, *U.S. Airpower Theory and the Insurgent Challenge: A Short Journey to Confusion*…, 809-811.
[30] *Ibid*.
[31] *Ibid*., 809-811, 831-832.

Major-General Charles Dunlap Jr., the Deputy Judge Advocate General in the USAF from 2006-2010 holds a very similar opinion to that of Colonel Drew and wrote a critical review of what he assesses as the myopic "surface-minded" focus of *FM 3-24* in 2008. He points out that air power considerations are relegated to a scant five pages within the 282 page document; a true reflection of the small amount of professional consideration and effort that he believes was apportioned to considering the effects that air power is capable of achieving in an asymmetric COIN environment.[32] In his review, he further expands on what he believes are the key enabling capacities that air power offers while prosecuting a COIN campaign. His analysis is as illustrative and instructive on air power's capacities in the modern COIN fight as it is critical of what this hallmark doctrine has missed in its analysis. Dunlap argues for an air-minded perspective for COIN doctrine that would have leveraged air expertise by including considerations such as "speed, range, and capabilities of aerospace forces, as well as threats and survival imperatives unique to Airmen."[33] The thrust of his arguments endorse and support the opinion of COIN experts Steven Metz and Raymond Millen who both contend that to win in a COIN fight, air power should be leveraged at all costs to support an "effects-based approach designed to fracture, delegitimize, delink, demoralize, and de-resource insurgents."[34]

While Dunlap clearly and cogently articulates the failings and air-minded omissions of *FM 3-24*, he also highlights and explains where he sees that air power is best used in modern COIN campaigns. Dunlap offers that the precision aerospace capabilities possessed by western militaries are the most potent tool in a COIN campaign to influence the morale of the insurgent forces by targeting the "will to fight" of the insurgents and inflicting a feeling of impotence and

[32] Charles J. Dunlap. "Air-Minded Considerations for Joint Counterinsurgency Doctrine." *Air & Space Power Journal* 21, no. 4 (2007): 63-65.
[33] *Ibid*.
[34] Steven Metz and Raymond Millen. "Insurgency and Counterinsurgency in the 21st Century: Reconceptualizing Threat and Response." *Special Warfare* 17, no. 3 (2005): 6-21.

helplessness that few other capabilities are able to achieve. The ability of air elements to impose upon the insurgent forces a psychology of "engagement dominance" is what truly attacks the insurgent centre of gravity, as he argues that "death per se does not extinguish the will to fight in such opponents; rather, it is the hopelessness that arises from the inevitability of death from a source they cannot fight."[35] Lastly, and most importantly, Dunlap draws an interesting parallel between modern air power and the insurgents' most potent weapon in the contemporary COIN battle, the improvised explosive device (IED). His concept is that the omnipotence of air power elicits the very same adverse psychological effects and terror response within the insurgents that they themselves attempt to instill within western militaries through the prolific use of IEDs.[36] To marginalize or obviate the use of air power in such a conflict would be tantamount to leaving one's most potent psychological and kinetic weapon system unused and unexploited.

Paul Smith, an air power theorist and regular contributor to the *Royal United Service Institute (RUSI) Journal*, argues that the synergistic effects that air and land assets clearly produce when used in concert with one another in a COIN campaign should be mirrored in the basic theories and doctrine that underpin the application of air and land power.[37] The employment of air power in a counterinsurgency campaign is thus an inherently joint endeavour where the specific advantages of air power such as persistence, speed, range, flexibility, and lethality combine to make it not only an enabler, but rather integral to the conduct of modern counterinsurgency operations.[38] This inherent and inescapable "jointness" between air and land power in COIN, sometimes referred to as Air-Land Integration (ALI), while well recognized and understood by battle hardened practitioners of COIN, has not yet been fully understood or

[35] Dunlap, *Air-Minded Considerations for Joint Counterinsurgency Doctrine*…, 65.
[36] *Ibid*., 66.
[37] Paul Smyth. "Airpower and Counterinsurgency", *Air & Space Power Journal*, (Summer 2011): 119.
[38] Baltrusaitis, Daniel. "Airpower:The Flip Side of COIN", *Georgetown Journal of International Affairs*, (Summer/Fall 2008): 94-95.

embraced by some COIN theorists and is certainly not adequately reflected in the current COIN doctrines.

It is, however, important to note that in response to *FM 3-24*, the USAF released an updated Air Force Doctrine Document (AFDD) on Irregular Warfare, known as AFDD 2-3, and fielded in August of 2008. This doctrine has also been heavily criticized as being far too narrowly focused on partnership building activities and capacity building within indigenous forces during a COIN operation. The utility of air power in winning the "hearts and minds" of populations is prioritized at the expense of highlighting the precision kinetic "Act" and non-kinetic "Sense" effects that air power can bring to bear in suppressing or destroying the more "intractable insurgents" themselves along with insurgent leadership nodes.[39] While any doctrine requires a balanced approach, capacity building is but one of many tasks that air forces can be expected to apply in any insurgency across the full spectrum of conflict. It is therefore clear that there is still a shortage of specific US or Canadian doctrine that specifically addresses the use of air power in COIN apart from several works that have been published in an ad hoc manner that only serve to bridge the gap between COIN and conventional operations.

CONCLUSION

Since 2006, the western militaries that have become involved in either the Afghanistan or Iraq insurgencies have embraced a population-centric COIN doctrine that has realized varying

[39] Charles J. Dunlap "Making Revolutionary Change: Airpower in COIN Today." *Parameters* 38, no. 2 (2008): 60; Department of National Defence, BGA-400-000/FP-000. *Canadian Forces Aerospace Doctrine* (Ottawa: DND Canada, 2010), 35-39; Canadian Forces Aersospace doctrine defines the Combat Function of "Act" as being the combat function that integrates manoeuvre, firepower, and information operations to achieve desired effects. Within the Air Force, the Act function "shapes" the battlespace with kinetic and non-kinetic actions, and rapidly "moves" personnel and materiel within and between areas of responsibility (AORs); Similarly, CF doctrine specifies that the Combat Function of "Sense" provides the commander with knowledge. It incorporates all capabilities that collect and process data. The aim of Sense is to enable the decision-makers to achieve decision superiority. Decision superiority is the competitive advantage enabled by ongoing situational awareness that ensures the implementation of more effective and efficient actions than an adversary.

degrees of success in these two operational theatres. The publication of *FM 3-24* has fundamentally changed the conventional focus of the US Army as well as many of its partner nations united in the fight against terror.[40] The US now trains and equips its ground forces in a very COIN focused way with the aim of preparing them for the highly complex and dangerous modern counterinsurgency they face. While *FM 3-24* does not introduce any concepts that academics or practitioners would consider being new, it does provide a common framework from which to prosecute COIN operations from a western perspective. The doctrine, however, falls well short of integrating the all important aspect of air power in the persecution of counterinsurgency campaigns. This omission, whether deliberate or accidental, illustrates a common and widespread misunderstanding of the effects that aviation can achieve on behalf of a ground force commander in a counterinsurgency operation. While these effects are usually far more focused in the non-kinetic supporting realm such as tactical transport, re-supply, ISR, medical evacuation (MEDEVAC) than on kinetic strikes, their enabling effects are no less important or decisive.

Lastly, COIN offers some extremely difficult challenges for ground commanders to surmount in the execution of their campaign; one of which being the effective integration of air power into the overall operational plan. Most notably, the psychological aspect that "engagement dominance" and precision offer to a COIN ground force commander cannot be understated. The insurgent is able to overmatch conventional land based military might in a counterinsurgency fight by using speed, surprise, and choosing the terms of his engagements with COIN forces. This same leveling of the playing field is far more difficult to achieve when that same insurgent

[40] Canada followed suit and published its own Counterinsurgency Doctrine called "BGL-323-004 *Counter-insurgency Operations*" in 2008. It is very similar in nature to FM 3-24 as it focuses on population-centric COIN; Department of National Defence, BGA-323-004/FP-003. *Counterinsurgency Operations* (Ottawa: DND Canada, 2008)

attempts to defeat or obviate the air power effects in his battlespace. The current depth of writing and thought on the doctrinal employment of air power in COIN was arrived at through some key conflicts in the 20th Century beginning with Great Britain's interventions in Somaliland and Iraq following the First World War.

CHAPTER 2: THE DOCTRINAL BASIS OF AIR POWER IN SMALL WARS

> It would be the greatest mistake to believe that a victory which spares the lives and feelings of the losers need be any less permanent or salutary than one which inflicts heavy losses on the fighting men and results in a peace dictated on a stricken field.
>
> -Air Commodore Charles F.A. Portal, Royal Air Force (RAF), 1937[41]

INTRODUCTION

Rotary wing air power was not introduced into military aviation until the 1940s due to the technology's much longer gestation period than FW aircraft; however, the doctrinal foundation of the roles that RW aviation would rapidly assume in counterinsurgency warfare was laid in the aftermath of the First World War. This foundation began with the introduction of air power to the complex and often bloody insurrections that characterized the interwar period, marked by burgeoning nationalist movements and vicious tribal warfare within the Middle Eastern and African colonies and former colonies of France, Great Britain, and to some extent Spain.

This chapter will examine how the employment of air power in the low level insurgencies that developed in the aftermath of the First World War affected the evolving doctrinal roles for aviation employment in support of counterinsurgency campaigns and how it ultimately informed the roles that RW air power would later assume in counterinsurgency warfare. This chapter will commence with an examination of the British experience in employing air power through punitive air control campaigns in Somaliland and Iraq and will continue with an examination of the French and Spanish campaigns in Morocco. These campaigns were characterized by the use of air power for psychological operations, sustainment, MEDEVAC, and air-to-ground fires.

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[41] Charles Portal, "Air Force Co-Operation in Policing the Empire." *RUSI Journal* 82 (May 1937): 354; Air Chief Marshal Sir Charles Portal would later be promoted to Air Chief Marshal and appointed to the position of Chief of Air Staff (CAS) during the Second World War.

BRITISH "AIR CONTROL" IN SOMALILAND

The application of tactical air power in small wars has its true foundation in the British and French approaches to dealing with the low intensity conflicts of the 1920s and 1930s, while the Spanish experience is more instructive through an examination of its failures. These conflicts, born out of abortive and often poorly executed imperial attempts at political administration in former colonial holdings were characterized by small but virulent insurgencies in the Middle East, Africa, and along India's northwest frontier.[42] With tried and proven imperial counterinsurgency methods of the period, these conflicts would have required an enormous investment in deployed ground forces and associated infrastructure to counter insurgent forces across vast land masses often involving the establishment, maintenance, and sustainment of garrisons and outposts throughout the imperial power's holdings within the colony.

The doctrine or concept of "air control" is rooted in the belief that the advent of air power would obviate the requirement to maintain large standing armies to control low intensity insurgencies from the air. Authors James Corum and Wray Johnson describe this doctrine very simply as the then widely held and often overly optimistic belief of the time that "airpower ought to be the primary force in colonial military operations."[43] "Air control" doctrine was rooted in the search for economies of expenditure, in both treasure and lives, in the execution of counterinsurgency campaigns and in the quest for a cheaper surrogate to maintaining large standing expeditionary ground forces. These colonial obligations rose out of the financial consequences of the First World War and the collapse of the Ottoman Empire. Prior to the introduction of air forces, British ground troops had controlled the turbulent far reaches of the empire for centuries. These missions took the form of either punitive expeditions to punish

[42] David J. Dean, *The Air Force Role in Low Intensity Conflict* (Maxwell: Air University Press,1986),19.
[43] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,51.

misdeeds or transgressions against imperial rule or simply expeditions followed by occupation and pacification of troublesome areas.[44] This doctrine was exceptionally expensive and required large standing armies of occupation and implied costly extended strategic lines of communication (SLOCs).

In the aftermath of the First World War, the Royal Air Force (RAF) found itself fighting for its very survival as an independent service. Still very much in its infancy (it was barely 7 months old at the signature of the armistice in November 1918) and faced with massive military demobilizations, the Air Force's leadership under Major-General (later Air Chief Marshal) Sir Hugh Trenchard actively sought out a raison d'être for the continuation of the RAF as a standalone service.[45] In the policy of colonial air control Trenchard found a crucial role for his beloved air force.

In May of 1919, Colonial Secretary Alfred Lord Milner approached Trenchard to examine a way of reducing the costs of addressing the colonial insurgency in British Somaliland led by Mohammed Bin Abdulla Hassan, known as the "Mad Mullah" and his "Dervish" followers. Hassan had caused unrest in the British protectorate since the 1890s, often raiding and pillaging other tribes loyal to the British Empire leaving the occupying British army impotent in blunting his often brutal campaigns. Secretary of State for Air Winston Churchill and Trenchard agreed that the RAF would be given to task of dealing with Hassan by augmenting the existing

[44] Dean, *The Air Force Role in Low Intensity Conflict*…, 22.
[45] Omissi, David E. *Air Power and Colonial Control: The Royal Air Force 1919-1939* (Manchester: Manchester University Press, 1990). 23.

ground forces assigned to Somaliland with a Squadron of DH-9 reconnaissance/light bomber aircraft.[46]

By January of 1920, the RAF had arrived in the British colony, assembled their aircraft, and initiated a surprise bombing campaign against Hassan's fortifications. Success was immediate, as the air forces were able to inflict heavy casualties and destroy most of the fortifications after five short days of bombing.[47] With British ground forces arrayed to capitalize on this brutal but effective employment of air power, Hassan and his men were routed and pursued across the Eritrean border. Following the pursuit phase the deployed RAF element, known as "Z" Squadron, reverted to a supporting role that included reconnaissance, close air support role to the colonial ground forces, MEDEVAC, and Command and Control (C2) functions that enabled and facilitated the colonial forces ground operations against Hassan and their pursuit of his Dervish forces. In this instance, the RAF proved that the most basic elements of air power were able to become the decisive instrument in ending a bloody insurgency that had festered within the colony for decades. This success was made all the more potent by the fact that this quick resolution was achieved for the very low cost of approximately £80,000 after only three short weeks of concerted air and ground operations.[48] The lessons that the British Government gleaned from this expeditionary effort in Somaliland would inform future British policy decisions about the use and deployment of the instruments of air power. The tactical successes and gained experience of the RAF's potential roles in controlling the colonies would

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[46] Winfield Scott, "A Wicked waste of Money at Present: The Origins of the RAFs Policy of Air Control in Iraq", *Sic Itur Ad Astra: Canadian Aerospace Studies: Combat if Necessary, but Not Necessarily Combat, Vol 3* (2011): 51.; Omissi, David E. *Air Power and Colonial Control: The Royal Air Force 1919-1939* (Manchester: Manchester University Press, 1990). 15-16.
[47] Scott, *A Wicked waste of Money at Present: The Origins of the RAFs Policy of Air Control in Iraq*…, 63.
[48] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists…,* 53.

also lay credence to Winston Churchill's bold, and largely unpopular, 1919 declaration that the "first duty of the RAF is to garrison the British Empire."[49]

BRITISH "AIR CONTROL" IN IRAQ

The relative success in Somlailand led to a greater appetite for the use of air power in dealing with controlling colonial uprisings. In 1920, Churchill asked Trenchard to develop a plan to garrison and control Iraq through the primary use of air power with a promise of budgetary increases for the RAF.[50] The cost of garrisoning Iraq with British and Indian troops had risen to an excess of twenty million pounds per year, and so air power promised significant savings.[51] The British-installed Arab government in Iraq was having difficulty controlling and policing the disparate tribes who were newly subject to colonial rule of law and newly imposed schemes of British taxation. The dissatisfaction was borne out of unfulfilled promises to the three main ethnic factions within Iraq (Kurds, Sunni Muslims, and Shiite Muslims) that the British government would grant self-rule following the First World War. The British government rather installed a monarchy in the form of a Sunni king, King Faisal. With Sunnis in the minority in Iraq, widespread dissatisfaction grew into a rebellion and insurrection which saw nearly 120,000 British and Indian troops garrisoned in Iraq completely overwhelmed and barely able to maintain order.[52]

Not unlike the 21st Century insurgencies in the Middle East, the British found themselves widely dispersed within Iraq in an attempt to protect and control population centres with poor C2 capabilities and dangerously fragile lines of communication.[53] British Air Control doctrine would

[49] Dean, *The Air Force Role in Low Intensity Conflict*…, 21.
[50] Scott, *A Wicked waste of Money at Present: The Origins of the RAFs Policy of Air Control in Iraq*…, 51
[51] *Ibid*.
[52] Dean, *The Air Force Role in Low Intensity Conflict*…, 21.
[53] *Ibid*.

reach maturity in the Iraq theatre as the introduction of air power proved to be the "tipping point" in the prosecution of the initial campaign with significant doctrinal evolution occurring over the course of the conflict. A key difference from the campaign in Somalia was the level of sophistication of the insurgent forces. Many leaders of the insurgency in Iraq had been Ottoman or Arab commanders during the First World War who now had ready access to large quantities of weaponry and were not as "likely to be overawed by British aircraft and technology as the Somalis had been."[54]

While some air assets were introduced into Iraq in 1920 in the form of four RAF squadrons augmenting and supporting British and Indian forces, it was not until after the suppression of the initial rebellion at the cost of 1,040 British dead and missing soldiers that Britain turned to the RAF for an enduring solution to garrisoning Iraq using air power. In the continuing fight for funding and independence as a service, the drain on personnel and national treasure in Iraq was the impetus for the RAF to capitalize on its past successes and the obvious economies of employing air control doctrines as a surrogate for large deployed armies. Iraq was placed under the command of the RAF, and Air Marshal Sir John Hammond was charged to develop and implement a policy of using air power for colonial control. The British Army withdrew all but four battalions of British and Indian troops, leaving only eight squadrons of aircraft to fulfill a difficult mandate in a politically complex and violent operational theatre.[55]

Due to the increased sophistication of the political environment and of the insurgent enemy himself in Iraq, air control doctrine had to necessarily evolve to continue to attain what Historian David J. Dean refers to as "a satisfactory political solution by the minimum use of

[54] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists…,*55.
[55] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,55-56; Dean, *The Air Force Role in Low Intensity Conflict* …, 21.

force."[56] The political complexities of Iraq would lead to the birth of what is often referred to in current military context as "intelligence-driven operations." This type of operation, well defined in *FM 3-24,* is planned and conceived with careful attention being paid to applying finite and surgical force only against known targets. Intelligence-driven operations ensure that collateral damage is minimized and the population writ large is protected in order to maintain their support and confidence.[57] In this early form of stability operation, it was essential that the RAF had a complete understanding and knowledge of "the culture, leaders, method of living, and state of mind of the target people" to ensure that force was applied in a measured way, against properly discriminated insurgent targets.[58] This represented not only an informed and nuanced approach to counterinsurgency warfare for that era but also a significant departure from the rather indiscriminate punitive campaigns that involved the bombing of entire Somali villages that had marked the RAF's last expeditionary use of air control as a counterinsurgency technique.

The Iraq insurgency of the 1920s and British doctrines of air control would also inform command and control theories that have endured in the employment of air power to present time. The concept of centralized command and decentralized execution would be developed as a consequence of the poor quality and limited range of the wireless sets of the period, making control of deployed air assets difficult. This challenge was coupled with the British understanding that the tribes and insurgent forces interpreted hesitation and procrastination to immediately act upon the commission violence as a weakness. Thus the authority to act and

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[56] Dean, *The Air Force Role in Low Intensity Conflict*…, 24.
[57] FM 3-24 asserts that "Counterinsurgency (COIN) is an intelligence-driven endeavor. The function of intelligence in COIN is to facilitate understanding of the operational environment, with emphasis on the populace, host nation, and insurgents. Commanders require accurate intelligence about these three areas to best address the issues driving the insurgency. Both insurgents and counterinsurgents require an effective intelligence capability to be successful. Both attempt to create and maintain intelligence networks while trying to neutralize their opponent's intelligence capabilities."
[58] Dean, *The Air Force Role in Low Intensity Conflict*…, 21.

apply deadly force provided an on-scene commander had sufficient intelligence and understanding of the ground scenario was delegated directly to aircraft commanders in Iraq. This concept of centralized control but decentralized execution is a fundamental tenet of aerospace power that resonates within most western air forces still to this day, and largely for the exact same reasons. As Dean summarizes regarding the British air control doctrine used in Iraq, "good intelligence, effective communications, and the authority to act enabled RAF commanders to deal with trouble at its earliest stages and greatly increased the likelihood of success in air control operations."[59]

The last and often most overlooked aspect of air control doctrine in Iraq was the employment of aircraft in what is now called an Information Operations capacity. British forces ensured a connection to tribal leaders, the population at large, and insurgents through the use of loudspeakers mounted on aircraft.[60] Propaganda that emphasized the "peaceful intent of the British demands and stressed the futility of resistance against the…ubiquitous air force" was broadcast to not only create a "sense of helplessness among the target people" but amounted to an early form of psychological warfare that directly contributed to mission success when coupled with air operations synchronized with limited ground engagements.[61] Though controversial at the time, Omissi points out that the RAF used leaflet drops to warn local populations to great effect in advance of the bombing Mahmud's positions within the Iraqi town of Sulaymaniyah in May

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[59] Dean, *The Air Force Role in Low Intensity Conflict*…, 24, 25. Quote from page 24; RCAF doctrine defines the concept of Centralized control and decentralized execution "as the fundamental tenet of aerospace power as it relates to C2. Aerospace forces are organized based on sound command and control principles with the purpose of achieving operational effectiveness across the spectrum of conflict. Centralized control is required to ensure the most efficient use of limited aerospace assets."; Department of National Defence, BGA-401-000/FP-001. *Canadian Forces Aerospace Command Doctrine* (Ottawa: DND Canada, 2012), 18.

[60] Dean, *The Air Force Role in Low Intensity Conflict*…, 25; BGL-300-001 *Land Operations* defines Information Operations as: "coordinated actions to create desired effects on the will, understanding and capability of adversaries, potential adversaries and other approved parties in support of overall objectives by affecting their information, information based processes and systems while exploiting and protecting one's own."; Department of National Defence, BGL-300-001/FP-001. *Land Operations* (Ottawa: DND Canada, 2008), 5-44.

[61] Dean, *The Air Force Role in Low Intensity Conflict*…, 25.

of 1924. Although the ensuing air attacks on the town were devastating, the leaflet drops ensured that the population within the town evacuated and there were no civilian casualties associated with the raid. These "warning operations" served to preserve the support of the local populations and speed up reintegration of the populace after the conclusion of offensive operations.[62]

The British became adept in employing aircraft across the spectrum of conflict by following up kinetic action against an insurgent group with MEDEVAC and resupply missions being applied to the affected village, creating a positive connection with air power in the general population.[63] This balance as described by historian Winfield Scott succeeded through "the combination of heavy attacks against marauders combined with the softer air control strategy aimed at recalcitrant villagers provided an amazingly stable countryside over which King Faisal slowly gained control."[64]

By 1925, it was clear that air control had "proven itself as a strategy capable of garrisoning a specific territory in empire." However, in some circles air control was not without its detractors. Its success occasionally regarded as a "false positive" due to the lack of enemy offensive counter air capability and little to no air defence capabilities in the early theatres that would challenge air control success. While it is valid that effective air control campaigns necessitate at very least a permissive air environment if not total air superiority, the environment lent itself to the evolution of many modern tactics still employed by air forces involved in counterinsurgency campaigns.[65] The assets, methods, and efforts dedicated to the establishment and maintenance of air superiority in a modern theatre have now vastly increased due to the sophistication and proliferation and availability of modern weaponry such as the shoulder-fired

[62] Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939*…, 155.
[63] Dean, *The Air Force Role in Low Intensity Conflict*…, 25.
[64] Scott, *A Wicked waste of Money at Present: The Origins of the RAFs Policy of Air Control in Iraq*…,59.
[65] *Ibid*., 59-60. Quote from page 59.

Surface to Air Missile (SAM). Notwithstanding, the ultimate goal of Trenchard and Churchill was met in Iraq through massive savings of both money and men. The corollary to this assertion is that Iraq provided an important vessel for the incubation of techniques and tactics for the employment of air power in a complex counterinsurgency campaign that would significantly inform the future employment of RW platforms in similar campaigns.

FRENCH AND SPANISH "AIR CONTROL" EFFORTS IN MORROCO

Similar to the British experience in Iraq and Somalia, the French also embraced air control doctrine in the interwar period and met with considerable success within their colonial holdings.[66] By employing air power during the Rif Rebellion in Morocco from 1921-1926 and in Syria from 1919-1927, France laid the doctrinal foundation for the tactical resupply of forward deployed ground forces as well as the establishment of a robust MEDEVAC system.[67] The French inherited Syria and Lebanon in the Sykes-Picot agreement of 1916 and had maintained a standing large force in French-Morocco since the turn of the century, running the country as a protectorate under the auspices of supporting the Sultan of Fez. In reality, France regarded French-Morocco as a *de facto* French colony and upon the conclusion of the First World War, set about resuming their continued and expanded occupation of the territory.[68]

The Spanish also had colonial interests in the northern portion of the Moroccan territory and made a concerted effort to expand and dominate this territory in 1920, notably becoming one of the first nations to use air power in colonial warfare.[69] Moroccan tribes in the Rif Mountains opposed to the colonial expansion united under the leadership of Berber warlord Abd el Krim

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[66] James Fergusson and William March. *No Clear Flight Plan: Counterinsurgency and Aerospace Power*. (Winnipeg:University of Manitoba, 2008), 31.
[67] James S. Corum, "The Myth of Air Control: Reassessing the History," *Aerospace Power Journal* ,14, no.4 (Winter 2000):70.
[68] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,74.
[69] Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,25.

and organized a focused and potent resistance to the Spanish expansion.[70] The Spanish suffered a significant defeat in the Battle of Annual against Abd el Krim in 1921 that saw over 10,000 Spanish soldiers killed and the loss of significant amounts of military equipment to the rebel tribes. The loss of this modern weaponry would vastly complicate the campaign with the insurgents becoming both well-armed and emboldened by their success. The Spanish military regrouped and reinforced their forces with the addition of over 160,000 men and a further influx of air power in the form of an additional three squadrons of light bombers in 1922 that would focus on reconnaissance and punitive bombing missions against the both combatants and civilian populations alike.[71]

Spanish air power was largely focused on protecting the urban centre and the Spanish main operating base at Melilla and in conducting some limited air control activities. Unfortunately, the application of Spanish air power in this conflict is seen as ineffective and poorly executed and offered little to the doctrinal evolution of tactical aviation. This failure is largely due to the highly adaptive nature of the enemy tribesman who learned to make excellent use of the concealment and protection offered by the complex terrain of the Rif Mountains within which to hide and null the inherent advantages of aviation during this conflict. The Rif warriors easily rendered ineffective Spanish efforts to target them with aircraft by moving only at night and becoming adept at camouflage and concealment by day.[72]

In trying to adopt an air control doctrine to assist in the fight against the Rif rebels, the Spanish largely underestimated the resilience and ingenuity of the insurgents who came to

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[70] Victor Valero Garcia, "The Campaigns for the Pacification of the Spanish Protectorate in Morocco: A Forgotten Example of Successful Counterinsurgency" (School of Advanced Military Studies Paper, United States Army Command and General Staff College, 2011), 12.
[71] Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,25.
[72] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,68,71.

understand both the strengths and weaknesses of Spanish air power and adapted their tactics and movements accordingly. In one of the darker uses of air power, the Spanish desperately employed poison gas attacks against the Rif, albeit to little strategic effect due to the resilience and tenacity of the Rif fighters and their support in the population.[73] Even after the addition of four additional squadrons comprising some 48 new aircraft, the Spanish were nearly defeated in a major Abd el Krim offensive in 1924. This setback triggered both a badly executed amphibious landing by the Spanish in 1925 that was supported once again with large scale mustard gas attacks against the Moroccan populations, and a combined French-Spanish offensive that concluded in 1926 with the surrender of Abd el Krim to the French.[74]

The French experience of the tactical employment of aviation in the Rif insurgency offers a stark contrast to the failure of Spanish air power in Morocco. The French paired their considerable air assets with a formidable ground force to counter Abd el Krim's growing nationalist forces, a recognition that in such a fight, air power would not be able to independently offer any real effect on its own. This early realization that joint air and land operations, now described by the term "Air-Land Integration," had a synergistic multiplying effect on the battlefield, producing effects that far outweighed the sum of the joint forces employed. By 1925, the French had had suffered some significant setbacks losing 44 out of a total of 66 French outposts which were often accompanied by the destruction of the entire French garrison.[75] As a result, the French increased their ground force to 36 army battalions in Morocco along with 15

[73] Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,25-26.
[74] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,73.
[75] James S. Corum, "The Myth of Air Control: Reassessing the History", *Aerospace Power Journal* 14, no.4 (Winter 2000): 70.

squadrons of cavalry and ten squadrons of aircraft consisting mostly of light bombers for attack and reconnaissance roles.[76]

The nature of the Moroccan conflict developed far differently than that of Iraq with the growing Riffian force decisively engaging French forces in "highly mobile bands and avoided concentrating their forces to hold defensive positions where French firepower could be brought to bear with most effect."[77] The French dramatically increased the tempo and frequency of air operations in 1925-26 in an attempt to counter a Riffian offensive that had steadily pushed the French forces out of the highlands. Air power, specifically close air support to ground forces, proved to be the key enabling effect that allowed the French to delay the Rif tribes' offensive and eventually pacify the country. Corum points out that in a single month of July 1925, the ten deployed squadrons flew a "total of 1,759 sorties against the Riffians" in support of the dispersed French ground forces.[78]

The French use of air power in the Rif campaign represented an adaptive and creative approach that birthed two of the key doctrinal roles for tactical aviation in counterinsurgent warfare: tactical resupply and medical evacuation operations.[79] The complex terrain and dispersed nature of the French outposts throughout French-Morocco strained lines of communication and naturally evolved the necessity of re-supplying the French outposts with aircraft. Through the use of a regular airdrop or aerial re-supply structure to the isolated outposts,

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[76] Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,28.

[77] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,74; Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…, 31; Corum, *The Myth of Air Control: Reassessing the History*…,70, 69. Quote from latter, page 69.

[79] Canadian doctrine defines Medical Evacuation (MEDEVAC) as "the timely, efficient movement and en route care by medical personnel of wounded and injured personnel from the battlefield and other locations to medical treatment facilities." While current doctrine makes a distinction between Casualty Evacuation (CASEVAC) and MEDEVAC operations, where MEDEVAC includes the provision of ongoing care, no such distinction will be made in this paper for simplicity's sake. As such, MEDEVAC in the context of this paper will be taken to doctrinally mean both CASEVAC and MEDEVAC operations. Department of National Defence, BGA-441-000/AF-000. *Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), 11-1.

the French were able to maintain and project their presence in the complex Moroccan terrain.[80] This capability and mission set would later evolve into a RW mission to become the key enabler for freedom of movement in the insurgencies in Iraq and Afghanistan in the 21st Century.

The French also leveraged air power to set up a comprehensive and dedicated MEDEVAC system for the movement of injured soldiers from point of injury into the field hospitals in the rear. Most importantly, the French realized the need to dedicate specially modified aircraft solely to this important role, thus ensuring both the best care and the continued morale of their fighting force.[81] Corum points out the breadth and depth of this system in his article on the "Myth of Air Control" in 2000:

> The French also established a regular system of collection points at forward airfields so that aerial ambulance could get the wounded and sick soldiers from the battle lines to forward and central military hospitals within an hour.[82]

The French aerial MEDEVAC system in Morocco represented the first large scale aerial casualty evacuation system introduced into a conflict with dedicated crews and aircraft as well as a regular schedule of flights to evacuate wounded soldiers to the rear. This key capability would evolve into a vital mission set with the introduction of RW aircraft onto the battlefield after the Second World War.

ANALYSIS

The British were mostly successful in their often brutal punitive air control campaigns in Iraq and Somaliland but the premise that airplanes would be able to fully supplant the need for ground forces and operate independently in the execution of effective counterinsurgency

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[80] Fergusson and March, *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,31-32.
[81] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 74.
[82] James S. Corum, "The Myth of Air Control: Reassessing the History", Aerospace Power Journal 14, no.4 (Winter 2000): 70.

campaigns was never fully realized.[83] This lesson still resonates today, especially in US doctrine dominated with a population-centric counterinsurgency approach, requiring a dispersion of forces amongst the populace and a joint approach to achieving durable effects in modern COIN campaigns. Much is made of the history of British air control doctrine being a fully RAF-led endeavour, executed in the absence of large ground forces for a very low cost. This notion, however, is revisionist and self-serving as there were still significant colonial ground forces required in both Somalia and Iraq to fully meet the aims that air control policies were meant to achieve. Historian David Omissi characterizes the limited success of air control in Iraq as the result of highly complex actions and on the political and military planes, effectively supported by a capable Arab monarch coupled with the imperial air and combat power of Great Britain amounting to a form of "indirect imperialism."[84] In fact, Corum and Johnson argue that "a purely air option in colonial policing worked only in the minor cases of suppressing low level instances of tribal banditry."[85] Nonetheless, the introduction and application of air power in these conflicts did result in a reduction of the number of troops required to police the colony.

In Spanish-Morocco the Spanish military employed air power against a tough and savvy insurgent force that quickly adapted to the battlespace and developed tactics that reduced the effectiveness of Spanish air power. Spanish use of mustard gas and other chemical weapons with little effect only served to embolden the Riffian forces and worked against the aims of pacification and colonial expansion. The Spanish were not able to capitalize on the significant advantages of employing tactical aviation in a counterinsurgency fight nor did they adapt their tactics to suit the changing enemy. In this failing, they ceded the advantage to Abd el Krim's

[83] Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939*…, 38.
[84] *Ibid*.
[85] Corum and Johnson. *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,81.

rebels, incurring enormous casualties and mounting defeats until the French became decisively involved in the conflict.

The French were far more successful in Morocco but the nature of the conflict and their force postures of arraying their outposts amongst the population necessitated an "air bridge" with the forward resupply of their outposts only possible by airdrop and austere landing strip due to the fragile lines of communication. This would become a hallmark of RW aviation doctrines in later campaigns. In fact, prior to the Rif war, air power was not seen as a necessity to achieve effects in a ground campaign but after this conflict it was seen as vital in the conduct of colonial warfare.[86] Lastly, and also driven by extended lines of communication and dispersion, was the adoption of a robust MEDEVAC capability with dedicated crews and aircraft providing timely evacuation from point of injury to medical care for injured soldiers. The introduction of the MEDEVAC capability by the French represents the single largest contribution to modern RW doctrines currently employed in the counterinsurgency fight.

CONCLUSION

The air control doctrines that France, England, and Spain developed following the First World War were initially motivated by reducing costs (in both lives and treasure) of policing colonial holdings and controlling tribal and ethnic uprisings in the Middle East and Arabia. In effect, air power indeed proved to be a tremendous force multiplier during many of these small conflicts; however, air control doctrines achieved only limited success.

It is essential to understand that these small conflicts and insurgencies provided a vital incubation function in forcing the development of some of the key doctrinal roles that have been

[86] Fergusson and March. *No Clear Flight Plan: Counterinsurgency and Aerospace Power*…,37.

transitioned into RW air power tasks in modern conflicts. The doctrinal air power foundations laid by the colonial powers in the post-First World War era clearly transformed and shaped how the helicopter would be used in subsequent counterinsurgency campaigns. As air power capabilities and its associated technology grew and evolved in the interwar period, the doctrinal foundations were laid for the eventual introduction of RW air power later in the Second World War. The roles of intra theatre air mobility, logistic resupply and MEDEVAC all eventually found a place within the realm of RW air power.

CHAPTER 3: ROTARY WING AIR POWER IN EARLY COUNTERINSURGENCY CAMPAIGNS

> We know that in modern warfare we are not clashing with just a few armed bands, but rather with an organization installed within the population – an organization that constitutes the combat machine of the enemy, of which bands are just one element. To win, we have to destroy this entire organization.
>
> -Roger Trinquier, French Military Theorist, 1964[87]

INTRODUCTION

The development of the helicopter and its subsequent introduction into military service occurred over a relatively long period as compared to the comparatively quick advances that were made in FW aviation technology in the build up to and during the conduct of the Second World War. Helicopters were introduced operationally into the full spectrum of modern conflict during the Allied Burma Campaign in 1944 against the occupying Japanese. The 1st Air Commando Group under British Major-General Order Wingate's "Chindits" employed air power to great effect to surmount challenges relating to both complex terrain and an asymmetric threat environment.

In Indo-China (Vietnam) from 1946-1954, the French military and political leadership faced a complex population-centric insurgency for which they were ill-prepared to effectively address, both militarily and politically. Although the outcome of this conflict would come to be regarded as a strategic failure, the use of air power throughout the campaign by a small, war weary, and underfunded *L'armée de l'air* (French air force) was transformational in its ability to enable and prolong the French ground forces ability to fight and survive against nearly impossible odds.

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[87] Roger Trinquier, Modern Warfare: A French View of Counterinsurgency (New York: Frederick A Praeger, 1964), 67.

During the Malaya Emergency, the British military was forced to deal with a large-scale popular insurgency in extremely complex terrain with extended lines of communication and a divided population. The British were able to offset the insurgent advantages of surprise and flexibility, forcing them on the defensive through the judicious application of air power and tight air-land integration effectively seizing the advantage from the insurgent fighters.

EVOLUTION OF ROTARY WING TECHNOLOGY

While the detailed history of the technological evolution of RW technology from gyroplane to operational helicopter in the early 1940s is beyond the full scope of this study, it is important to note that each side fielded viable operational helicopters during the Second World War. Famed aircraft designer Heinrich Focke developed, manufactured, and fielded an operational helicopter, the Fa 223 for the *Luftwaffe* (German air force) in the early 1940s. German efforts in RW innovation, while significant, were considerably hampered by a lack of resources and funding, and were directly impacted by the Allied strategic bombing campaign of the Nazi industrial and population centres.[88]

The US Army Air Corps, under no such similar constraints at the time, funded and developed military helicopter technology through United Aircraft with Igor Sikorsky as the principal designer in the early 1940s. The result was a somewhat refined but still temperamental and maintenance intensive aircraft, called the YR-4B, ready for production and employment by mid-1942. United Aircraft and Sikorsky produced more than 400 R-4B helicopters for the United States and Great Britain by war's end. Notably these aircraft were manufactured in specific variants to perform MEDEVAC, observation, and ISR roles as well as for broad utility tasks.[89]

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[88] Boyne, *How the Helicopter Changed Modern Warfare*…,45.
[89] Boyne, *How the Helicopter Changed Modern Warfare*…,45.

BURMA 1943-44, 1st AIR COMMANDO GROUP

While not a "small war" or insurgency by definition, the Allied campaign against the Japanese in Burma is an important milestone. It was hardly a typical force on force conflict due to the unforgiving jungle terrain and a heavy reliance on air power for both battlefield mobility and sustainment. Burma is noteworthy to the development of RW air power as it represents the first introduction of the helicopter onto the modern battlefield, albeit on a very small scale. The Burma theatre of operations is also noteworthy in the extensive use of glider operations to mass combat power in the Japanese rear lines. This tactic that would logically evolve to reside within the realm of RW air power as the helicopter grew in both capability and reliability in the decades that followed.[90]

In the Spring of 1943, British Major-General Orde Wingate, the eccentric commander of the famed Allied "Chindits" fighting force in Burma, successfully led Operation LONGCLOTH, a large scale deep jungle penetration into the Japanese rear lines. This operation, while costly and bloody, struck a major blow against the Japanese and demonstrated the Allied ability to "take the war to the Japanese in the Jungle."[91] Wingate understood that while initially successful, he would need more dedicated air assets to expand and win the campaign in the China-Burma-India (CBI) theatre. The success of this campaign caught the attention of both British Prime Minister Sir Winston Churchill and US President Franklin D. Roosevelt during the Quadrant Conference later in 1943.[92] At this meeting, Wingate successfully made a case for an expansion of the US air assets available to him in Burma and for a unique command relationship that would see him able to employ these assets at the tactical level, formed under the 1st Air Commando Group and in

[90] Robert F. Dorr, *Chopper* (New York: Berkley Books, 2005), 2; Andrew Wax. "The Challenges of Air Supply and Support of Allied Forces Behind Enemy Lines in the China-Burma-India Theater of Operations, 1943-1944." St. John's University (New York), 2009: 7.
[91] Y'Blood, *Any Place, Any Time, Anywhere: The 1st Air Commando Group in World War II*…, 6.
[92] Y'Blood, *Any Place, Any Time, Anywhere: The 1st Air Commando Group in World War II*…,6.

direct support of his ground campaign. He specifically asked for additional C47 transport planes and the availability of the recently introduced helicopter to support his operations. Roosevelt gave direction to Lieutenant-General Henry. H "Hap" Arnold, the US Army Air Forces (USAAF) Commander, to create this composite unit, with full charter to acquire whatever equipment they deemed necessary.[93]

The 1st Air Commando Group was thus formed in India under US Colonel Philip G. Cochran with an initial allocation of more than 380 aircraft that included bombers, fighters, gliders, and transports as well as six YR-4B prototype helicopters, only four of which would survive the trip to India in C46 transports.[94] The helicopters were deemed essential for the potential rescue of downed aircrews or isolated personnel flying the "Hump" (Himalayan range between Burma and China).[95] This massive influx of dedicated air power for both air mobility and organic fire support tasks allowed Wingate to launch Operation THURSDAY, the glider based airborne invasion and assault into Burma in early February of 1944. This operation saw two British long range penetration units massed deep into the Japanese rear, consolidated into a single large and defensible forward operating base (FOB), known as "BROADWAY" within only 7 days.[96]

The most notable contribution of the helicopter to the Burma campaign came in the form of a daring and complex rescue of the crew and passengers of a downed L-1 observation plane deep in Japanese territory in late April 1944. This mission required the pilot to overcome a 5,000 foot peak with the YR-4B; an undertaking that took three full days due to a constantly

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[93] Boyne, *How the Helicopter Changed Modern Warfare*…, 49; The U.S. Army Air Corps became the U.S. Army Air Forces in June 1941.
[94] *Ibid*., 49.
[95] C.H. Briscoe, "Helicopters in Combat: World War II." *Special Warfare* 14, no. 3 (2001): 33.
[96] Briscoe, *Helicopters in Combat: World War II*…,33; Y'Blood, *Any Place, Any Time, Anywhere: The 1st Air Commando Group in World War II*…,14.

overheating engine.[97] When he finally located the downed pilot and his three badly wounded British "Chindit" survivors, he had to shuttle them individually out from the jungle and cross-load them to a waiting L-5 Sentinel FW aircraft on a nearby sandbar.[98] The YR-4B helicopter was severely underpowered and temperamental throughout the rescue attempt but ultimately proved successful.[99]

Irrespective of the complexity, difficulty and the many technical challenges that were surmounted to carry out this historic mission, it cemented in the minds of Allied commanders and aviators a potent and necessary personnel recovery capability that has now grown into a doctrinal niche known as Combat Search and Rescue (CSAR) operations.[100] All told, the 1st Air Commando Group helicopters would recover 18 isolated and wounded Chindits during the CBI campaign flying a total of 23 operational sorties.[101] The more powerful R-6A helicopter was introduced to the CBI theatre later in 1945 and rescues were accomplished up to an unprecedented altitude of 8,000 feet.[102] The capability of the helicopter to overcome challenges in both air mobility and personnel recovery was conceived and proven in the CBI theatre of operations. These important lessons not only informed the technological evolution of RW technology but also the doctrine and tactics that would enable a potent new era of battlefield mobility.

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[97] Briscoe, *Helicopters in Combat: World War II*…,33.
[98] Y'Blood, *Any Place, Any Time, Anywhere: The 1st Air Commando Group in World War II*…,15.
[99] Dorr, *Chopper*…,14.
[100] Combat Search and Rescue (CSAR) is a coordinated operation using pre-established procedures for the detection, location, identification and rescue of downed aircrew in hostile territory, in crisis or wartime; Department of National Defence, BGA-441-000/AF-000. Tactical Level Aviation Doctrine (Ottawa: DND Canada, 2000), 12-1.
[101] Briscoe, *Helicopters in Combat: World War II*…,34.
[102] Briscoe, *Helicopters in Combat: World War II*…,34.

FRENCH AIR POWER IN INDO-CHINA

The French colonial war in Indo-China from 1946 to its conclusion following the siege and fall of Dien Bien Phu in 1954 offers many lessons in the evolution of air power applications following the end of the Second World War. France's costly and divisive struggle against the leading edge of communist ideologies in Indo-China is often overshadowed by the more memorable and more costly American war in Vietnam. While helicopters would not prove decisive in the Indo-China conflict until the United States became decisively involved in the mid-1960s, the extensive use of air mobility to surmount complex terrain and logistic challenges is a hallmark of this French campaign against the communist Viet Minh nationalist elements.[103] The Indo-China war also saw the heavy use of airborne/paratroop operations by the French to get into the rear of the insurgent forces. This tactic would inform the evolution of American RW airmobile doctrine development in the early 1960s that would fundamentally transform the air mobility of light infantry forces, enabled and facilitated by a far more capable and reliable turbine powered helicopter.[104]

Following the Second World War, France emerged resource-poor and war-weary but with considerable colonial responsibilities in Asia and North Africa. French Indo-China, later known as Vietnam, was occupied and held by the Japanese from 1941 until the end of the Second World War. The power vacuum left following the Japanese surrender allowed the communist Viet Minh to seize power in Hanoi proclaiming a "Democratic Republic of Vietnam."[105]

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[103] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,143.
[104] John R. Galvin, *Air Assault: The development of Airmobile Warfare* (New York: Hawthorn Books,1969), 265; Boyne, *How the Helicopter Changed Modern Warfare*…,100.
[105] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,143.

The key issue that led to the extended insurgent conflict was French President Charles De Gaulle's refusal to grant independence to Vietnam as it was seen as a move that would signal the decline of France as a world power.[106] The net result was increased hostilities against the French and the eventual dislocation of the Viet Minh leader, Ho Chi Minh, retreating from the capital in 1947 and establishing bases of operations in the countryside from which to wage a bloody and extended guerilla war against the French. Ho Chi Minh and his military leader, General Vo Nguyen Giap, understood that the French did not have sufficient forces to forcibly occupy the entirety of Indo-China. With his more than 50,000 Chinese-trained fighters he elected to prosecute a classic insurgency, heavily informed by the well-developed revolutionary warfare theories of noted Chinese revolutionary Mao Tse Tung.[107]

Despite the poor quality and numbers of the outdated air combat power possessed by the French at the outset of campaign, French air C2 structures were quickly reorganized and resourced in 1947 with a more functional C2 construct. The French established air headquarters (HQ) that were regionally based, mirroring the ground force commands, embracing the concept of decentralized execution and the primacy of support to ground forces. This model would prove to be a strong fit for the employment of air power in prosecuting a counterinsurgency campaign. French Air Officer Commanding Far East, General G.J. M Chassin wrote a short monograph for the magazine *Interavia* in 1952 regarding the air C2 models that the French had been employing in the Indo-China conflict. Chassin's comments offer insights into the thinking of French air power practitioners and the lessons they eventually would carry into the Algerian conflict. Chassin argued that there are two inviolable "eternal laws" that govern how modern conflicts are

[106] *Ibid.*
[107] S. Monick. "The Five Act Tragedy: The French in Indo-China, 1945-54", *South African Journal of Military Studies* 11, no.2 (1981): 1-2.

fought. The first is that the introduction of new, more powerful or more efficient weapons systems to a conflict will make the opposing side disperse their forces and revert to guerilla or insurgent tactics. The last 60 years of COIN campaigns certainly lends credence to this theory. His second law states that the introduction of modern weapons onto a battlefield can often do more harm than good, potentially working against the strategic aims of a nation engaged in a small war.[108] This lesson is potent and prescient as well, especially within the context of the political costs and liabilities of unexpected collateral damage and civilian casualties in conflicts such as the current Afghanistan campaign.

Chassin's air C2 theories are equally enlightening as he was one of the first French commanders to advocate for a central Joint Headquarters (HQ) where air, land, and sea effects could be synchronized, prioritized, and applied to the best effect within the operational theatre. Chassin also argued that since air power was often the arm "who swing the balance in our favour" and that ground tactical plans within a counterinsurgency should be planned around the available air support assets and plans and not vice versa.[109] Given the scarcity and cost of air assets in the current COIN campaigns in Iraq and Afghanistan, this theory would become once again important as operations in these conflicts were often intended to be "intelligence led" but in fact more often became "asset availability led" operations.[110]

The challenges the French faced in Indo-China were primarily focused on their extended lines of communication, their overdependence on scarce air resources, and the extensive support

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[108] G.J.M. Chassin, "Lessons of the War in Indochina." *Interavia* 7, no. 12 (1952): 670.
[109] *Ibid*., 671.
[110] This observation is based on the author's personal experience of planning, executing, and leading SOF and conventional RW air assault operations in Afghanistan in support of both Operation Enduring Freedom (OEF) and the International Security Assistance Force (ISAF) during 16 months of combat operations between 2005 and 2011.

and relative safe haven offered to the insurgent forces by neighboring Communist China.[111] Throughout the war, France repeatedly turned to air mobility to deal with the challenges that the terrain and their unsecured lines of communication condemned them to overcome. Paratroop or "airborne" operations became much more common as the French sought to engage the Viet Minh in decisive battles as well as to conduct reinforcement or hasty resupply operations to their forward operating bases. Airborne operations in Indo-China, the true precursor to the large scale helicopter airmobile operations that would occur during the Algerian conflict, were tactically decisive in several instances. The French used airborne tactics at the very outset of the war in an attempt to capture Ho Chi Minh during Operation LEA in 1947 near Bac-Kan. Several battalions of airborne soldiers were dropped into blocking positions coupled with an armoured and motorized infantry envelopment in the vicinity of the leader's suspected headquarters.[112] Ho Chi Minh was able to narrowly evade capture during this operation, which could have been decisive in ending the campaign.

Later, relative success with airborne tactics during the French campaign to reinforce Na-San, a beleaguered and isolated forward operating base in the central highlands, would falsely lead the French to believe that an "air-land" base could be established and maintained at great distances, deep within enemy controlled territory with complete reliance on air power for logistic resupply and reinforcement.[113] This lesson would lead the French to their ultimate demise in Indo-China at a forward "air-land" base established in Dien Bien Phu with the aim to seek decisive battle with the enemy and establish a base from which commando raids against the elusive Viet Minh could be launched. Dien Bien Phu represents a failure characterized more by a

[111] Jeremy Black. *War Since 1945* (London: Reaktion Books Ltd, 2004), 37-38.
[112] Corum and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists…,* 156; Bernard B. Fall. *Street Without Joy* (New York: Shocken Books, 1962), 27-29.
[113] Bernard B. Fall, *Hell in a Very Small Place* (Cambridge: De Capo Press, 1966), 24-25.

poor terrain and enemy capability analysis than from any particular limitation of employing air power in a counterinsurgency.[114] Ultimately, the limited capacity of the available French airlift assets as compared to the daily requirement for resupply of critical items such as food, water, defensive stores, and ammunition would result in a resupply deficit in Dien Bien Phu which saw the defenders capacity to withstand the Viet-Minh "human wave" assaults dwindle with time.[115]

The loss of Dien Bien Phu and the surrender of the more than 6,500 French troops remaining within the beleaguered fortress can be attributed to the fact that the air mobility organization and required comprehensive logistic support structure required to sustain and defend the fortress, let alone allow for offensive operations, was simply not of a sufficient size.[116] This miscalculation led to a strategic defeat and the withdrawal of France from Indo-China. This defeat serves as an important lesson on the importance of air mobility and the operational design of the campaign logistic support structure and air mobility structures for future COIN campaigns.

Rotary wing air power was extensively informed by the Indo-China conflict as the French applied their considerable lessons learned in air mobility to their next major counterinsurgency campaign in Algeria. However, the Indo-China conflict cannot be considered a "helicopter war" as RW platforms, still underpowered and underdeveloped, were largely relegated to MEDEVAC and liaison duties throughout the conflict. From 1950 to 1954, the French employed several small units of helicopters, flying Hillier 360s, H-23s, and later the more powerful S-5 dedicated uniquely to the MEDEVAC role. Of the 42 French helicopters deployed to Indo China during the war, eleven were downed by the enemy. Despite the obvious vulnerability of the aircraft to

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[114] Monick, *The Five Act Tragedy: The French in Indo-China*, 1945-54…, 7.
[115] Fall, *Hell in a Very Small Place*…, 452.
[116] Galvin, *Air Assault: The development of Airmobile Warfare*…,265.

ground fire and the high loss rates, several thousand wounded French soldiers were evacuated by helicopter throughout the conflict, a fact considered so important that France formed a separate "light aviation" branch in 1954 with the mandate to employ and operate helicopters for the *L'armée de l'air*.[117] The British also learned similar lessons in Malaya on the employment of tactical aviation in support of a ground-centric COIN campaign.

BRITISH AIR POWER IN THE MALAYAN EMERGENCY

The British COIN campaign in Malaya (now Malaysia) lasted twelve full years from 1948 to 1960 before being resolved through a decisive combination of military action, internal security action, and the establishment of strong governance structures. Key to the successful outcome was also the brilliant and inventive application of "ink-spot" COIN theory combined with air power to isolate and marginalize the popular insurgency that was heterogeneously mixed within the Chinese and indigenous Malay populations. In fact, the ability of the British to successfully adapt their COIN approach throughout this insurgency in particular is often contrasted to the inability of the Americans to recognize and do the same during the Vietnam conflict. Noted COIN theorist John A. Nagl attributes the success of the British in Malaya and the failure of the Americans in Vietnam to the organizational learning cultures present, or lacking, within their respective militaries at the time of their testing.[118] The application of air power in Malaya was unique in that it was the indirect supporting capacity of air power in a COIN campaign that prevailed as the predominant and most potent capability rather than the more traditional direct supporting capacities such as precision strike and bombing operations.[119]

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[117] John Everett-Heath. *Helicopters in Combat: The First Fifty Years*. (London: Cassell, 1992), 22; Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,156.
[118] John A. Nagl. "Learning to Eat Soup with a Knife", *World Affairs* 161, no.4 (1999). 193.
[119] Sebastian Ricthie. *The RAF, Small Wars and Insurgencies: Later Colonial Operations, 1945-1975*. (Shrivenham: Air Media Center. 2012), 21.

The origins of the Malayan conflict are complex, dating back to grievances stemming from British and Dutch colonial rule in Malaya during the 19th Century. A key contributor to the conflict stems from the composition of the Malayan population itself. As early as the 1850s, there had been several large scale immigration surges of Chinese into Malaya to work in the increasingly profitable and strong mining sector. When the emergency in Malaya was declared by the British in 1948, there was a total population of about 4.9 million people in the country, 2.5 million of which were native Malayans and 2 million of which were of Chinese origin.[120] Native Malayans regarded the Chinese as a lower class and segregation and marginalization of the Chinese workers caused a great deal of internal tension within the colony.

Following the surrender of the Japanese in August of 1945, the Chinese-dominated and supported Malayan Communist Party (MCP), attempted to seize power and became committed to the overthrow of the British administration and establishing a communist republic.[121] The MCP failed to realize these goals through non-violent political action in the two years that followed the end of the Second World War. This inability to realize success forced a change in tactics to a campaign of intimidation, terrorism, violence, and murder perpetuated by what could be called an insurgent army in the military wing of the MCP, known as the Malayan Races Liberation Army (MRLA).[122] As violence erupted in June of 1948, the government moved to declare a state of emergency. British and Malay military and police forces were deployed to restore order and to separate the MRLA from the communist Chinese base of support in what would become a protracted and violent COIN campaign.[123]

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[120] Victor Purcell. *Malaysia*. (New York: Walker and Company, 1965). 80-105.
[121] Ricthie, *The RAF, Small Wars and Insurgencies: Later Colonial Operations, 1945-1975*…, 15.

[123] K.R Brazier-Creagh, "Malaya", *RUSI Journal* 99, no.594 (May 1954): 177.

Group Captain K.R.C Slater in his essay on air operations in Malaya, contends that the operations in the Malaya campaign fell into two distinct phases. Slater argues that the first phase ran from June 1948 to early 1953 where the insurgent forces were mainly concentrated on the jungle fringes. The second phase started in March 1953 with a renewed and more capable Malay and British offensive that forced the MRLA much further into the jungle and ever more isolated from their base of support and supply apparatus. The initial phase was characterized with framework and internal security operations where air power was not able to be used to its fullest extent as the insurgent forces were still very much intermixed with a divided population. Logistic resupply operations along with helicopter MEDEVAC and some limited close air support of ground cordon and search operations were the most prevalent uses for the air power in theatre in this phase. In mid-1953 the MRLA revised its strategy and elected to withdraw deep into the jungles of Malaya marking the start of the final phase of the insurgency. This change in tactics brought the greater need for the air mobility and RW aspects of air power to the forefront of British COIN operations.[124]

The RAF helicopter contribution to Malaya in terms of manpower and equipment was small as compared to the enormous operational effects gleaned from their employment. The campaign began with a small force of three Dragonfly helicopters diverted to Malaya by the Royal Navy to assist in the growing COIN campaign. When overtasking and the expanded use RW aviation was apparent, the helicopter force grew to include three full squadrons comprising of Dragonflies, Sycamores, Westland Whirlwinds, and more modern Sikorsky S-55 helicopters.[125] In all, the total helicopter force grew to include 26 medium helicopters for troop

[124] K.R.C Slater, "Air Operations in Malaya", *RUSI Journal* 102, no.607, 378.
[125] John Dowling. *RAF Helicopters: The First Twenty Years* (London: Her Majesty's Stationary Office, 1992): 44.

lift and cargo operations and 14 light helicopters employed primarily for reconnaissance, liaison, and MEDEVAC operations.[126]

Noted historian Jeremy Black argues that in the Malaya campaign "British effectiveness owed much to the use of helicopters and transport aircraft; to improvements in their intelligence system; and to the use of counterinsurgency forces skilled in jungle craft and understanding of the local situation."[127] This contention is supported by Slater as well, who outlines the importance of both helicopter and FW transport mission sets as vital to the success of the British campaign in Malaya. While the introduction of high performance jet aircraft into a close air support role was an important element of the air power developments that occurred in the Malaya conflict, it was the introduction of the helicopter and RW air power that was a truly transformative capability for the British COIN campaign in Malaya. Group Captain Slater quantitatively describes the effects provided by RW platforms by asserting that a "supply dropping Valetta [FW aircraft] force, coupled with troop lifting and casualty evacuation by helicopters, has combined to multiply the number of troops and police deployed on jungle patrols by a factor of not less than four."[128] Slater further describes the time and space issues that RW platforms solved in terms of saved time and manpower by equating the mobility afforded by the helicopter in a single company sized lift to ten days of unproductive marching time.[129] The advent of the helicopter in the Malaya campaign thus massively increased the productivity and sustainability of the deployed forces, a key economy in a complex, distributed, and resource intensive COIN campaign.

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[126] Slater, *Air Operations in Malaya*…,383.
[127] Black, *War Since 1945…,*36.
[128] Slater, *Air Operations in Malaya*…,382.
[129] Slater, *Air Operations in Malaya*…,382.

Royal Air Force Historian Dr. Sebastian Ritchie also describes the transformative role of the helicopters in Malaya as well as the need for centralized control of this highly valued asset by contending that "experience soon demonstrated that the exceptional utility of the helicopter as a counter-insurgency weapon, and it proved possible through careful prioritization to exploit the invaluable troop-lifting capabilities in a succession of critically important operations."[130] He adds that RW air power provided "a hitherto unknown degree of mobility to the security forces, giving them time to concentrate troops rapidly and accurately against the MRLA before they had time to disperse."[131] A key aspect of this new air mobility in Malaya was that it defeated a major strength of the enemy, the considerable early warning and intelligence capability possessed by the MRLA by bypassing the extensive cordon and informant networks that ringed their jungle operating base. This aspect of RW aviation air power was a key development of the Malaya campaign as it would be exploited extensively and decisively in the Vietnam War by the Americans and well into the 21st Century by NATO and coalition forces during the insurgencies in both Afghanistan and Iraq.

CONCLUSION

In the period between the Second World War to the end of the Malayan Emergency, RW air power grew both in terms of technological capability and relevance, especially during the conduct of small wars. This period truly saw the birth and coming of age of an important technology that would evolve to become transformative in the way that militaries are able to project and sustain forces in COIN campaigns. From the early, unstable, maintenance heavy helicopter prototypes that were employed to some effect in the Burma campaign to the birth of highly reliable and efficient turbine engine equipped helicopters at the outset of the Vietnam

[130] Ricthie, *The RAF, Small Wars and Insurgencies: Later Colonial Operations, 1945-1975*…,30.
[131] *Ibid.*

War, there was a chaotic and violent period of experimentation in protracted colonial COIN campaigns. These campaigns fought by both Great Britain and France yielded some of the most potent technological advancements and the development of operational doctrine for RW air power.

In France's Indo-China campaign against the Viet Minh, RW air power was still very much in its infancy, plagued with both maintenance and reliability issues and not yet ready to be injected into mainstream air mobility operations. Rotary wing air power in Indo-China was limited to reconnaissance and MEDEVAC operations. Unfortunately, both the complex terrain and tenacity of the Viet Minh pushed the French to attempt to leverage FW air mobility to overcome these challenges through risky airborne/paratroop operations and attempts to sustain far flung "air-land" bases through air power alone. As the RW technology in France was not yet ready for large scale employment and the air mobility assets were far too scant, the French found themselves unable to overcome both the logistic and kinetic challenges of defeating the insurgency. While the reasons for the French defeat in Indo-China are many, air power was decisive in only prolonging this conflict by sustaining the dispersed and often outmanned French forces in Indo-China. A poor terrain analysis and an underestimation of the enemy resolve, coupled with the lack of sufficient air resources and required logistic networks, would eventually contribute to the defeat of the French in Dien Bien Phu and the exit of France from Indo-China.

The British were able to better leverage the indirect effects of air power to deal with a different kind of insurgency during the Malaya emergency. The insurgency in Malaya was different in many respects from Indo-China, but most notably in the aspect that the insurgents did not enjoy a great deal of support from a third nation proxy such as China, nor did they have a sanctuary from which they could operate with impunity. The insurgency commenced as a low

level internal security problem on the fringes of the jungle but increased in both tempo and violence as the MRLA changed tactics and withdrew into the complex jungle terrain. The use of air power was most effective in the latter portion of the campaign as an indirect supporting capacity for COIN operations led by ground forces.

For the first time the indirect capacity of air power took precedence in this conflict over the more direct capacity of applying fires. Most notably, the helicopter became the most powerful and decisive enabler for the COIN campaign through the provision of air mobility and the capacity to take operations into the Malayan jungle and force decisive contact with the MRLA. The provision of unique RW capabilities such as spraying defoliant, conducting psychological operations, and conducting MEDEVAC operations all added great value to the air efforts in Malaya and greatly contributed to the overall success of the campaign. The considerable lessons learned in both Indo-China and Malaya would significantly and immediately shape how air power was employed by the French to great effect in Algeria. These lessons also influenced how the US adapted their conventional doctrines to become far more dependent on RW air power for battlefield mobility at the outset of the Vietnam War.

CHAPTER 4: VIETNAM AND ALGERIA, THE INCUBATORS OF MODERN ROTARY WING AIR POWER

> Over the twenty months of airmobile training, a bond had been welded between the infantry and their rides, the Huey Helicopter pilots and crewmen. Now the strength of that bond would be tested in the hottest of fires. If the air bridge failed, the embattled men of the 1st Battalion, 7th Cavalry would certainly die in the same way George Armstrong Custer's cavalrymen died at the Little Bighorn-cut off, surrounded by numerically superior forces, overrun, and butchered to the last man.
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> -Lieutenant-General Harold G. Moore, *We Were Soldiers Once…and Young*[132]

INTRODUCTION

While some historians would argue that the helicopter "came of age" in either Korea through dedicated MEDEVAC activities or perhaps in Malaya with the British forces, the efficiency and utility of the platform was not fully realized until the turbine engine was introduced and mass produced. This level of dependability and efficiency in helicopter production ensured a cost-viable and reliable aircraft that was finally dependable military capability. This increased capacity, dependability, and utility of the helicopter brought about a fundamental shift in how militaries viewed the possibilities of RW air power and its relevance to contemporary operations. The true coming of age of RW air power was realized in the late 1950s and into the early 1960s through two main conflicts that acted as the "incubation chambers" of modern tactical aviation: the beginnings of the US involvement in Vietnam and the French counterinsurgency campaign in Algeria.

The French military response to the violent insurgency in Algeria from 1954 to 1962 was a protracted and bloody counterinsurgency campaign to counter a highly complex and multifaceted conflict that was part civil war, part internal security emergency, and part

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[132] Harold G. Moore and Joseph L. Galloway. *We Were Soldiers Once…and Young* (New York: Random House, 1992), 106.

insurgency. This conflict divided France, Algeria, and the French military along both racial and colonial lines and included some of the first large scale missions involving RW air mobility.[133]

While Vietnam was an insurgency, it can hardly be characterized as a "small war." As such, this chapter also will deal with the birth of the US Army's Airmobile concept from the establishment of the Howze Board in 1961 to the first combat test of dedicated airmobile forces in the Ia Drang Valley in the Central Highlands of Vietnam in late 1965. The powerful lessons that the US military would glean from the large scale employment of helicopters to assure air mobility and aerial firepower in the complex and unforgiving terrain of Vietnam will be examined, as will the resultant RW air mobility doctrine.

THE FRENCH IN ALGERIA - THE FIRST HELICOPTER WAR

France first occupied Algeria in 1830 and since then the French have had a long and emotional colonial association with their former North African possession. It is important, however, to point out that the French did not consider Algeria to be a colony in 1954 but rather as inclusive of sovereign French territory. The presence of just over one million French settlers (known as *colons* or *pieds noirs),* mostly consisting of the large middle class of landowners and the civil service, dominated the politics and economy of Algeria in the 1950s while the more than nine million Muslim Berbers found themselves marginalized and excluded from the political process, leadership, and burgeoning economy of their country. In May of 1945 this discontent boiled over in a massive protest that resulted in the massacre of over 100 French *colons* and the extensive destruction of infrastructure by Arab Algerians in the town of Sétif, causing significant and bloody reprisals against suspect Muslim villages.[134]

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[133] Boyne, *How the Helicopter Changed Modern Warfare*…,69.
[134] Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,161.

A dissatisfied Arab majority and heavy handed French policies over the next ten years spawned the creation of the Front de Libération Nationale (FLN), a nationalist Algerian resistance movement with the aim of opposing French rule and seeking full independence for Algeria. Largely comprised of angry young Muslim men, the FLN's militant wing, known as the Armée Libération Nationale (ALN), commenced a campaign of domestic guerilla warfare comprising of raids, ambushes, and sabotage commencing in November 1954, which was further emboldened by the French defeat at Dien Bien Phu during the same period. As the insurgency grew both in scope and violence, France became more determined to maintain its hold on Algeria due to the presence of over one million French settlers, a misguided belief that Algeria was an integral part of France, and the significant recent discovery of oil in Algeria's far south.[135]

Author Charles Shrader points out that the French in the Algerian war faced many of the same challenges that they had encountered in Indo-China: a motivated and determined insurgent enemy with significant support of the local populace as well as extra-territorial support, a lack of clearly articulated political-military strategy, a divided and indecisive government in Paris, and a lack of men and material with which to prosecute the campaign. The key difference in Algeria was that the French had a clear overmatch over the FLN in terms of their mobility and counter-mobility capabilities in addition to having to deal with much shorter lines of communication from France as compared to their previous campaign in Indo-China. The French possessed far superior capabilities in terms of operational battlefield mobility through a greater availability of helicopters in the Algerian theatre, especially later in the war. This RW based air mobility, coupled with their dominance of the land, sea, and ground approaches to Algeria, gave the French every advantage that they had lacked in Indo-China. Shrader astutely posits that this

[135] James R. Arnold, *Jungle of Snakes: A Century of Counterinsurgency Warfare from the Philippines to Iraq* (New York: Bloomsbury Press, 2009), 75-83.

overmatch and exploitation of the inherent advantages offered through RW air power makes the Algerian conflict indeed the "first helicopter war."[136]

In 1955, FLN/ALN operations increased in both tempo and violence, leading to significant reprisals and a renewed commitment by the French to deal with the growing insurgency.[137] The often punitive French reaction to ALN violence gradually matured and evolved into the more deliberate and effective approach to COIN warfare known as *quadrillage* whereby the battlespace was sectored into finite squares and French troops were stationed in large population centres and high risk sectors to ensure security. The COIN paradox was established in that military losses by guerillas often translated into a strategic success as the brutality of the defeat often recruited more of the disenfranchised population to their cause and further isolated the public at large from the COIN forces.[138]

The helicopter was introduced to the Algerian theatre in the spring of 1955 with borrowed helicopters from the United States, Italy, and Germany in the form of 36 used Sikorsky H-19s and Bell Model 47Gs.[139] When first introduced, the RW assets were largely relegated to MEDEVAC and liaison duties, much as they had been in Indo-China. However, a greater number of more capable helicopters became available later in the campaign and the French were able to adapt their tactics from the more static *quadrillage* policy to a more aggressive approach of bringing the fight directly to the insurgent bases within mountain sanctuaries. Rather than centrally holding and controlling their tactical aviation platforms, the French elected to disperse and devolve their RW assets throughout the enormous country in order to null the geographic disadvantage they faced in both time and space to be able to react to insurgent attacks. By late

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[136] Charles R. Shrader, *The First Helicopter War: Logistics and Mobility in Algeria 1954-1962* (Westport: Praeger, 1999), 1-3, 5.
[137] Black, *War Since 1945…,*41.
[138] Boyne, *How the Helicopter Changed Modern Warfare*…,71.
[139] *Ibid.*

1958, The French finally utilized the helicopter to its potential in Algeria when they were able to concentrate their forces against enemy encampments in previously inaccessible areas and were able to rapidly overwhelm the guerilla outposts in decisive tactical victories.[140]

By 1959, the French had nearly 300 helicopters in theatre and had developed a decentralized C2 model that saw the authority for the employment of RW assets placed at the lowest possible level. This was significant as it allowed ground force commanders to fully integrate tactical aviation into their planning cycles and rapidly exploit opportunities to defeat the enemy. Furthermore, the French commander in Algeria, General Maurice Challe, established and constituted a large 20,000 man tactical reserve of elite troops paired with dedicated helicopter units to quickly exploit intelligence and decimate ALN insurgents.[141] Effective decentralized control and the synergistic "air assault" pairing of highly trained soldiers with tactical aviation units allowed the French to tactically defeat, disaggregate, and marginalize the insurgent forces by 1960.[142]

The extreme threat faced by French aviation in Algeria resulted in escort tactics that endure to this day, developed in order to ensure a level of force protection for the assault helicopters. This evolution was a necessity given that in 1959, during the more than 150,000 hours that were flown by French helicopters, 106 aircraft were hit and damaged by ground fire. Thus the French elected to arm a portion of their helicopter fleet in order to provide escort and overwatch capabilities during air assault operations. This tactic dictated an armed and dedicated escort helicopter for every five transport or assault helicopters in a formation. These escort aircraft also conducted ISR and overwatch of Landing Zones (LZs) in advance of air assault

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[140] Shrader, *The First Helicopter War: Logistics and Mobility in Algeria 1954-1962*…, 227-232; Corum, and Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*…,165-170.
[141] Arnold, *Jungle of Snakes: A Century of Counterinsurgency Warfare from the Philippines to Iraq*…,116-117.
[142] Boyne, *How the Helicopter Changed Modern Warfare*…,72-73.

landings to ensure the safety and protection of the assault force.[143] The French also correctly concluded that the complexity and risk associated with airmobile or air assault operations required a clear, dedicated, and specific C2 structure to effectively control the activities within a 3-dimensional manoeuvre box over an objective area; another lesson that has endured to this day. Current Canadian aviation doctrine dictates a clear division of responsibilities in airmobile operations between an Aviation Mission Commander (AMC) and Lifted Unit Commander (LUC) or Ground Force Commander (GFC).[144] They French pioneered the initiative to separate and designate these responsibilities between a helicopter operations commander, who controlled the aircraft and air manoeuvre and a ground commander who controlled all of the ground elements associated with an operation.[145]

A key aspect in which Indo-China and Algeria conflicts differed was the specific exploitation of the helicopter to ensure battlefield mobility. While some such as Shrader have stressed that French land, sea, and air mobility assured the tactical victory over the insurgency in Algeria, it can be argued that the most decisive and revolutionary aspect of this dominance was the employment of RW assets to surmount both the restrictive terrain and the prohibitive distances that Algeria posed for the French. In Indo-China, the French faced similar challenges but did so with less than 100 helicopters of a far less capable nature than those employed in Algeria. By the conclusion of the Algerian campaign, the French had over 600 combat capable aircraft at their disposal, including a mature and dedicated RW attack capability.[146]

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[143] Hilaire Bethouart. "Combat Helicopters in Algeria," *Marine Corps Gazette* 45, no. 1 (1961): 41.
[144] Department of National Defence, BGA-442-000/AF-000. *Tactical Aviation Tactics, Techniques, and Procedures* (Ottawa: DND Canada, 2010), 14-3; Aviation Mission Commander: The designation of an AMC is a command responsibility when two or more helicopters work together as a section or a flight. The responsibility includes ensuring that the aircrew adheres to mission briefing parameters and handling tactical, administrative, and logistical interface with supported units…The AMC commands and controls the flight during a tactical mission.
[145] Boyne, *How the Helicopter Changed Modern Warfare*…,72-73.
[146] Shrader, *The First Helicopter War: Logistics and Mobility in Algeria 1954-1962*…, 2, 227-233.

In spite of their many tactical victories and their clear military advantages, France did not win the war in Algeria. While marginalized and significantly blunted militarily, the FLN was able to achieve politically and diplomatically what it could not successfully achieve on the battlefield. With a war weary France divided politically and nationally, Algeria was granted total independence from French rule in 1962.[147] However, the lessons, techniques, and RW technologies that were developed throughout the course of the Algerian conflict significantly informed the American shift in focus to RW air mobility in the early 1960s and influenced how the Vietnam War would be prosecuted with tactical aviation as the dominant and decisive manoeuvre element within the US Army.

THE VIETNAM WAR - A KEY INCUBATOR OF ROTARY WING AIR POWER

The political causes and the reasons for the American intervention in Vietnam are well documented and are beyond the scope of this paper. However, Vietnam, while by no means a small war, was a violent and expansive insurgency that was the key impetus and incubator for modern airmobile and air assault doctrines that still endure in the contemporary COIN context. The lead up to the expanding US involvement in Vietnam necessitated a careful re-evaluation of the US Army's ability to secure and ensure reliable air mobility on conventional battlefields. The US came to rely on their extensive RW air power assets to project and sustain their forces in Vietnam in an effort to rout the North Vietnamese Army (NVA) and suppress communist expansionism. The numbers speak for themselves: in the Vietnam War a total of 11,827 US helicopters were deployed into action. Of this total, 5,086 aircraft, a staggering 43%, were lost to both enemy fire and the environment, resulting in extremely high casualty rates for aviators. A

[147] Shrader, *The First Helicopter War: Logistics and Mobility in Algeria 1954-1962*…,231-233.

total of 4,906 US military personnel assigned helicopter flight duties were killed during the Vietnam War, 2,202 of which were helicopter pilots.[148]

The path to the establishment of a robust, capable, and well-funded RW airmobile concept required enormous resources, institutional changes to the US military force structures, and decisive leadership from both political and military leaders. Enabled by the recommendations of the Army Aircraft Requirements board chaired by Lieutenant-General Gordon B. Rogers in 1960, the US Army began acquiring the turbine powered UH-1 Huey Helicopter in significant numbers.[149] In 1961, US Secretary of Defense Robert MacNamara ordered the investigation and evaluation of the US Army's conventional mobility capabilities in part due to the increasing parity of Soviet conventional war fighting capabilities, and in part from a realization that the US had underinvested in both the Army and in conventional battlefield mobility while relying too much on their nuclear and strategic forces for deterrence.[150]

Both President John F. Kennedy and McNamara were convinced that massive organizational changes to the conventional US Army paired with bold increases in tactical mobility (specifically helicopters) were essential to ensure a continued overmatch to the Soviet conventional threat. This investigation led to the establishment of the Army Tactical Mobility Requirements Board, known as the "Howze" Board, by McNamara under the leadership of Lieutenant-General Hamilton Howze (then Commander of XVIII Airborne Corps) who was given the rather broad mandate to "develop and test the airmobile concept."[151] This period of investigation was fraught with inter-service infighting and rivalries as the USAF saw the US Army as infringing upon their mandate and trying to "build another air force within the army"

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[148] Boyne, *How the Helicopter Changed Modern Warfare*…,106.
[149] *Ibid*., 115.
[150] Galvin, *Air Assault: The development of Airmobile Warfare*…,274-279.
[151] *Ibid*.

while the emerging US Army air mobility doctrines were largely seen as a challenge to existing Air Force missions and interests. While the USAF favoured a more holistic and comprehensive view of how air power should be centrally controlled and applied, the US Army focused on developing and perfecting the specific subset of RW air mobility within their force structures.[152]

The Howze board conducted a series of experimental exercises involving an 82nd Airborne Battle Group throughout 1962 along with a significant operational research project to determine the advantages, disadvantages, and challenges of airmobile warfare. One conclusion was clear at the outset: airmobile troops possessed an enormous advantage over airborne (parachute) troops due to the latter's immobility on the battlefield following their initial assault. The board concluded that light airmobile forces on their own would lack the ability to effectively face enemy armour or artillery. As such, it was determined that airmobile forces needed to be enabled or coupled with armour, artillery, and fast air platforms to achieve their greatest potency.[153]

The Howze board resulted in the formulation of a detailed proposal that was submitted to McNamara on the concept of RW air mobility and the required reorganization within the army necessary to realize the concept. Key to the airmobile concept advanced by Howze was the requirement for rocket firing helicopters (which he called "aerial artillery") for the protection of assault platforms, as well as the development of logistic support structure based almost entirely on RW aircraft. The economies advanced by the Howze report were revolutionary. He proposed that approximately 330 helicopters could subsume the logistic and transport responsibilities that

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[152] Mrozek, Donald J. *Air Power and the Ground War in Vietnam*. (Maxwell: Air University Press, 1988), 30-32.
[153] Galvin, *Air Assault: The development of Airmobile Warfare*…,278. Another key question the Howze board attempted to answer was the vulnerability of helicopters within modern battlespace. It was determined that frontal assaults using heli-borne forces pitted enemy strength against the weakness or limitations of the helicopter. To this end, the Howze board recommended the addition of self-sealing fuel tanks as well as the addition of armour plating to the cockpit and vulnerable components of assault helicopters in addition to the fitment of Electronic Counter Measures (ECM) equipment to protect against radar guided anti-aircraft fire.

were carried by approximately 1,500 of the 3,000 vehicles resident within a US infantry division.[154]

At its heart, the Howze report concluded that air mobility and RW aviation should be fully integrated into the force structure and given an equal footing with the other branches of the US Army such as armour or artillery. He specifically called for the creation of new types of units within the US Army: an Airmobile Division and an Air Transport Brigade. Howze further concluded that RW aviation could effect a tactical revolution within the US Army "as profound as the mechanization of warfare by the introduction of the gasoline engine." The Howze report found favour with the Joint Chiefs of Staff (JCS) as well as with McNamara, causing them to direct the USAF and the Army to eliminate overlapping efforts and to work together to determine the best model for air-land integration between the services.[155] Thus tactical aviation and the Airmobile Division concept under the US Army were born; they were soon tested under the most difficult conditions against the Viet Cong in the Central Highlands of Vietnam.

As a direct result of the Howze board, Major-General Harry W.O. Kinnard was given the task of proving the concept of the Airmobile Brigade in January of 1963. Activating the 11th Air Assault Division (Test) from a single battalion sized composite unit, Kinnard set out to define both the operating concepts, required equipment and aircraft, and training support structures that would be needed to bring the concept to fruition.[156] He integrated into the division heavy-lift aircraft, in the form of newly introduced Chinook helicopters for the battlefield movement of artillery pieces, medium lift air assault aircraft in the UH-1 Huey, and dedicated attack helicopters into a coherent unit matched with specially trained light infantry troopers and

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[154] Galvin, *Air Assault: The development of Airmobile Warfare*…,274-279.
[155] *Ibid.*
[156] Faced with the logistical challenges of supporting sustained RW operations Kinnard's planners developed the concept of forward "refuel-rearm" points to sustain helicopter operations, a concept still employed and doctrinally relevant to this day in the form of a Forward Arming and Refueling Point (FARP).

appropriate logistic support structures. Kinnard also developed very similar C2 structures to what the French had used in Algeria with the introduction of a single C2 aircraft acting as a flying command post that held the airmobile brigade commander, artillery liaison officer, forward air controller, and the operations officer.[157]

Through a series of brigade and division sized trials the tactics of the Airmobile Division were developed and honed confirming and validating the concept for division-sized airmobile operations. These trials did expose some of the key weaknesses of airmobile forces. It was found that once inserted, their ground mobility was limited, they were vulnerable to attack by armour, and they were at the mercy of the weather for both sustainment and fire support. Notwithstanding, the concept demonstrated that airmobile forces had exceptional mobility and could sustain and C2 a remarkably high tempo of operations over a vast area without having to protect or maintain their own supply routes. With such incredible mobility and freedom of action, it was proven that the age-old requirement to constitute a reserve within the Division was no longer required as the least committed forces could be shifted around the battlefield easily by helicopter to deal with any contingencies. The ultimate conclusion drawn from these trials was that an airmobile unit could cover and control an enormous amount of terrain during low intensity conflict and was the epitome of an "economy of force" measure, particularly suited to COIN warfare with dispersed enemy in complex terrain and limited ground lines of communication.[158]

The limited number of RW aircraft in the Vietnam theatre coupled with political limitations and inexperience, dictated that the majority of airmobile operations being conducted between 1961 and 1965 were primarily in support of the South Vietnam Army (Army of the

[157] Galvin, *Air Assault: The development of Airmobile Warfare*…,283.
[158] *Ibid*.

Republic of Vietnam or (ARVN) forces). The early tactics that emerged from Vietnam developed in parallel to the Airmobile Division experiments and resulted in a standardized "Eagle Flight" airmobile formation that comprised 11 troop-carrying Hueys escorted by five armed fire-support Hueys and a single UH-1B dedicated MEDEVAC aircraft. The integration of both fire-support and MEDEVAC into the assault package represents the logical evolution of airmobile tactics that the French employed in Algeria.[159]

In August of 1965, the 1st Air Cavalry Division (Airmobile) was formed from the experimental foundations of the 11th Air Assault Division and 2nd Infantry Division. This new hybrid division was immediately deployed to Vietnam and comprised a total of 15,787 personnel and 470 aircraft, 435 of which were helicopters. The 1st Cavalry Division deployed to Vietnam with four variants of helicopters: the UH-1D troop carrying Huey, the UH-1B gunship, the OH-13S Sioux, and the Boeing Vertol CH-47 Chinook.[160] The division's immediate task was to establish itself in an operating base in An Khe in the Central Highlands of Vietnam. Under Operation HIGHLAND, the 1st Cavalry Division conducted no less than eight air assaults to secure the base itself and the lines of communication leading to it. The decisive and defining engagement for the 1st Cavalry Division did not come until late October 1965. Major-General Kinnard, now Commanding General of the 1st Cavalry Division, was ordered to "seek out and destroy" elements of the NVA in the western area of Pleiku province. This 35 day engagement, known as the Battle for the Ia Drang Valley, was famously described in Lieutenant-General Harold Moore's book *We Were Soldiers Once…and Young.* This battle was the first real test of

[159] Boyne, *How the Helicopter Changed Modern Warfare*…,126.
[160] *Ibid*., 128.

American air mobility against a battle hardened, resourceful, and capable enemy with an encyclopedic knowledge of their surrounding terrain.[161]

A number of key lessons on air mobility in COIN were learned through the conduct of this bloody and costly battle that saw 151 Americans from the 1st Cavalry Division killed, another four missing in action and in excess of 2,000 NVA killed. The NVA elected to counter the US overmatch of aerial fires by adopting a "belt-buckle to belt-buckle" style of combat, engaging the US forces from extremely close distances making the application of aerial fires nearly impossible due to the high risk of fratricide; a tactic that would endure throughout the conflict. Low and slow, the helicopter proved itself to be an excellent and accurate fire support vehicle as well as MEDEVAC platform throughout the campaign but was extremely vulnerable to high volumes of small arms fire.[162]

Over the next 10 years, the US learned many lessons regarding the employment of air mobile forces, the most salient of which was the lack of persistence that airmobile tactics offered the campaign as soldiers rarely occupied and held areas they had cleared of enemy. After clearing an area and departing, the insurgents would often flow back in, necessitating repeated clearances of the same area and a lack of decisive control over an operational area. This key weakness would surface again during the Afghanistan campaign where sufficient forces were rarely available to clear and then hold a specific area for extended periods of time.[163] While persistence over an objective area is an inherent weakness of air power, it was the lack of persistence of troops on the ground that was the true weakness of air assault tactics employed in COIN campaigns as the effects achieved often are only temporary in nature with no enduring

[161] Moore and Galloway. *We Were Soldiers Once…and Young*…, 56-193; J.D. Coleman, *Pleiku: The Dawn of Helicopter Warfare in Vietnam* (New York: St. Martin's Press, 1988), 99-106.
[162] Boyne, *How the Helicopter Changed Modern Warfare*…,128.
[163] Personal observations as OC Chinook Flight, July 2010-April 2011.

effect on the battlespace and certainly no lasting contribution to decisive victory over an insurgency.

CONCLUSION

The helicopter is truly iconic of two conflicts of the 20th Century: the French campaign in Algeria and the American Vietnam War. These two conflicts were heavily enabled, resourced, and influenced by the application of RW air power in an attempt to defeat the insurgencies. The French use of helicopters coupled with dedicated and trained air mobile forces allowed them to impose their will and project their forces deep into insurgent controlled areas. The US recognized the transformative nature of RW air power to the modern battlefield and spent the early 1960s conceiving, validating, and testing the Airmobile Division concept that resulted in a transformation and revolution of battlefield mobility.

The French successfully developed and validated RW air mobility concepts in Algeria from 1954 until 1962, in sharp contrast to their ill-fated experience in Indo-China during the previous decade. The French were able to dominate the battlespace in Algeria by leveraging the logistic and mobility advantages of the helicopter in ensuring their own mobility and denying both mobility and sanctuary to the FLN. In spite of the strategic/political failure of France in Algeria, the French tactically and militarily blunted the FLN's ability to pursue a violent insurgency after 1959.

The US military took a deliberate and rigorous approach to re-rolling conventional mechanized infantry to air mobility which allowed the United States to engage and sustain a prolonged military intervention in Vietnam. The Howze board's findings and recommendations ensured that the capability was established and codified within the US Army force structure and still pays dividends to this day by informing a generation of air mobility doctrine and evolution.

Notwithstanding the outcome of the Vietnam War, the conflict served as a key incubator for RW air power innovation, advancement, and air mobility development, significantly informing contemporary RW air power thinking on the dedicated support of ground forces during a counterinsurgency operation.

CHAPTER 5: ROTARY WING AVIATION IN MODERN COUNTERINSURGENCIES- THE CANADIAN EXPERIENCE IN AFGHANISTAN

> While there is no airpower solution to counterinsurgency, there is certainly a large role for airpower. Airpower can bring firepower, transport, reconnaissance and constant presence to the fight – and these are all things that the counterinsurgency force needs. Currently the greatest obstacles to doing this mission are not material ones – but what lies in our own minds and our own military cultures.
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> -James S. Courm, *Air Power and Small Wars: Current Operations*, 2010[164]

INTRODUCTION

Over the past 11 years of combat operations, the Canadian Forces (CF) in general and the Royal Canadian Air Force (RCAF) in particular have undergone a transformation to adapt their capabilities, training, and doctrine to respond to the realities and demands of modern counterinsurgency warfare. It is important to note that the air power capabilities that Canada generated and placed at the disposal of its ground forces and of their NATO partners from 2008-2011 were highly valued by coalition partners, combat proven and effective, and saved coalition lives through the conduct of full spectrum air operations against the insurgency. As previously discussed in Chapter 1, effective air power for COIN warfare necessitates supporting air capabilities in far greater proportion than it calls for in strike capabilities from fighter aircraft. In this regard, Canada struck the ideal balance of air power capabilities for the COIN fight in Southern Afghanistan by deploying RW assets for troop lift, re-supply, ISR, and limited strike as well as tactical FW airlift for intra-theatre lift and resupply in addition to dedicated Unmanned Aerial Vehicles (UAV) for ISR.

The RCAF experience in employing RW air power in Afghanistan was not without its growing pains and significant challenges. Some of these lessons and observations form the basis

[164] James S. Corum, "Airpower and Small Wars: Current Operations", *Baltic Security and Defence Review* 12, no.1 (2010): 153.

of this chapter as Canada's experience in adapting its air power capabilities to COIN, specifically RW air power, is reflective of what many other Western air forces have had to undergo. Shifting from a decade of peace support operations in the 1990s to a decade of violent counterinsurgency in the 2000s has been a significant and difficult transition. The scarcity of certain types of air power capabilities in Afghanistan often led to operations being planned around platform availability rather than being "intelligence-led." Rotary wing flight profiles within the Area of Operations (AO) were a topic of constant debate insofar as they can often unknowingly work counter to the COIN objectives of the battlespace commander. Lastly, the RCAF air intelligence apparatus was not postured to support RW tactical aviation operations in the low-level environment in any meaningful way at the outset of the mission which resulted in degraded situational awareness for Canadian aircrew.

CANADA'S AIR POWER CAPABILITIES IN AFGHANISTAN 2008-2011

For a variety of reasons, Canadian tactical aviation was not deployed to Kandahar, Afghanistan in support of the NATO counterinsurgency and stability operation until December of 2008.[165] While the Canadian Air Force had, at great cost, been maintaining an air bridge between Canada and its deployed forces in Afghanistan since 2002, using CC130 Hercules as well as CC150 Polaris and CC117 Globemaster aircraft, the key tactical air enabling capabilities of RW air power and ISR were not deployed in concert with the introduction of Canadian ground forces to Kandahar province in 2005/2006.

In 2008, an independent panel produced a report to government that concluded that the Canadian Forces in Afghanistan needed both dedicated RW tactical aviation capabilities and

[165] The deployment of the CH146 Griffon to Afghanistan was hotly debated within the RCAF and DND due to its performance limitations in hot/ high conditions in terms of useful payload; however, once deployed in the escort role for the CH147 and dedicated to ISR/ fires, the Griffon proved to be an excellent escort/ overwatch platform. It is also important to note that there was a political reluctance in 2007/2008 to grow the Canadian mission in Afghanistan in terms of both troops and capabilities prior to the Manley report being tabled.

UAVs to effectively operate and support NATO operations in Afghanistan's restive southern province of Kandahar. In fact, the recommendations of the panel offer insight into the specific effectiveness of RW platforms in COIN as it concluded that:

> added helicopter airlift capacity and advanced unmanned aerial surveillance vehicles are needed now. No equipment can perfectly protect Canadian soldiers against improvised explosive devices. But helicopters can save lives by reducing reliance on transporting troops by road, and aerial surveillance can more effectively track insurgent movements.[166]

This report was the impetus for the deployment of the Joint Task Force-Afghanistan Air Wing in late 2008 that comprised a Wing HQ, a Theatre Support Element (TSE), a CC130 based Tactical Airlift Unit (TAU), a Heron Unmanned Aerial Vehicle Detachment (CHUD), a Contracted Air Transport (CCAT) element, and the Canadian Helicopter Force-Afghanistan (CHF-A) Task Force consisting of six CH147D Chinook and eight CH146B Griffon helicopters.[167] This force package and structure remained extant from December 2008 until mission close out in August of 2011 with the air assets providing support to not only Canadian ground forces but also as a "declared" capability to NATO, providing support to all NATO nations in Regional Command (South). As author Daniel Baltrusaitis points out, the key advantage of air power in COIN is that it gives a country "strategic staying power" in a theatre by reducing the potential for casualties and ensuring that support for the operation does not quickly erode domestically.[168] This assertion rings very true for the Canadian experience as this was the key outcome of the wider introduction of Canadian air power capabilities to Afghanistan.

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[166] Department of Public Works and Government Services, *Independent Panel on Canada's Future Role in Afghanistan* (Ottawa: Canada Communications Group, 2008), 27.
[167] Department of National Defence. *Project Laminar Strike: Canada's Air Force Post Op Athena*. (Ottawa: Canada Communications Group, 2011), VI.
[168] Baltrusaitis, Airpower: The Flip Side of COIN…,92.

"INTELLIGENCE-LED" VS "ASSET-LED" OPERATIONS

The scope, breadth, and complexity of the insurgency in Afghanistan has been under-resourced by both the US and NATO from the outset of the campaign. The vast geography and isolation imposed by the mountainous terrain gives insurgents significant freedom of movement and action within the country. Impassable and dangerous lines of communication in insurgent controlled areas were often heavily laced with Improvised Explosive Devices (IEDs), making ISAF movement via road both dangerous and difficult, but also exceptionally time consuming for NATO forces. With these factors in mind, there were often far too few RW resources available to meet the significant demands of both conventional and Special Operations Forces (SOF) in Kandahar province. As such, coalition requests for routine logistic transport and the more deliberately planned air assault operations were prioritized, synchronized, and sequenced at the Regional Command (South) headquarters. The net result of the prioritization and sequencing of the scarce RW assets often resulted in the unintentional consequence of operations becoming driven by asset availability rather than by actionable intelligence.[169]

Experience and doctrine has taught that all operations, especially in COIN, should be driven by intelligence in order to exploit insurgent weaknesses and capitalize on opportunities or gaps within the enemy's network.[170] In Dr. Conrad Crane's work on the imperatives and principles for combating insurgency, he asserts that effective intelligence-driven operations in COIN must be shaped by timely, specific, and reliable intelligence that is gathered and applied at the lowest level and disseminated widely across the force. He further argues that properly executed COIN operations spawn a cycle where operations produce intelligence that generate

[169] Personal observation as OC Chinook Flight, July 2010-April 2011.
[170] Laura Geldhof, Maureen Green, Remi Hajjar, and Chris Litwhiler. "Intelligent Design: COIN Operations and Intelligence Collection and Analysis." Military Review 86, no. 5 (2006): 34.

and shape subsequent operations.[171] Unfortunately, the paucity of available RW assets in Afghanistan often resulted in the abandonment of this key imperative for intelligence-led or intelligence-driven operations. In Afghanistan, units often queued up their operations and then executed based on the windows of availability for their enabling air assets, rather than based on the time of the GFC's choosing, based on actionable and accurate intelligence. The consequence of this reality was that many operations where intelligence was of a time sensitive nature were either cancelled or executed to no effect. This was less true for SOF due to their often increased resource/asset priority; however, it made the prosecution of the kinetic side of the COIN fight exceptionally difficult for conventional ground units who relied heavily on RW air power to project their influence within their AO. [172]

Conversely, the frustration of not being able to access RW assets often drove ground force commanders to execute operations either dismounted or mounted, at much greater risk to their own forces, to avoid missing key opportunities to strike at the insurgency and stabilize their AOs. This shift from "intelligence-led" operations to "asset-led" operations is indicative of the importance of RW air power in an insurgency and a reminder to prioritize and apportion resources and execute operations based on intelligence and desired effect rather than asset availability.[173] Reverting to a "bus schedule" model of apportioning RW air assets in a COIN

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[171] Conrad C. Crane "Minting COIN: Principles and Imperatives for Combating Insurgency." *Air & Space Power Journal* 21, no. 4 (2007): 59.

[172] Personal observation as OC Chinook Flight, July 2010-April 2011.

[173] There exists in tactical aviation, a natural friction between the air and ground force commanders over the control and apportionment of air power effort in a conflict and a friction between from ground forces requesting specific platforms and airmen wanting to understand their desired effect in order to determine the most appropriate platform to meet their needs. Author Clayton Chun highlights this in his book on aerospace power in the 21st century by highlighting the choice that air commanders face between conducting independent operations to attrit an enemy independent of the ground force or apportioning sorties directly to a ground commander as close air support (CAS). It certainly makes the argument for air power assets to be centrally controlled and apportioned to ground commanders to contribute to an overall campaign plan by weighing the costs and benefits of each sortie at the operational level. Clayton K.S. Chun, *Aerospace Power in the Twentieth Century: A Basic Primer* (Montgomery: Air University Press, 2001), 131-133.

operation significantly risks the lives of operators and is a waste of resources given that the desired operational effect as dictated by intelligence often goes unmet.[174]

FLIGHT PROFILES AND MEETING THE GFC INTENT IN COIN

The flight profiles adopted for any particular RW mission are usually either selected by the Air Mission Commander (AMC) based on a METTT-C analysis (Mission, Enemy, Terrain, Troops [own], Time, and Civilian considerations). The profiles can also be dictated by airspace constraints, by Aerospace Control Orders (ACO), and by theatre directives to ensure both protection of the aviation force package and effective deconfliction of theatre air assets.[175] In conventional warfare these profiles which are defined by altitude of flight, flight path or route, and speed, are selected and planned from a purely tactical point of view to ensure surprise, deception, and protection for the package to achieve its assigned mission. In COIN warfare, route and altitude selection for RW operations is far more difficult and involve more extensive analysis of the cultural composition and civilian component of the battlespace in addition to analyzing the always changing threat and security levels with the AO, including an understanding of the threat and security within the sub-districts and even down to individual villages. John Bellflower, in his essay on the "Soft Side of Airpower" argues that NATO countries have become far too enemy-centric in their understanding of air power, championing the lethal effects to the exclusion of the non-lethal aspects. He argues that in a population-centric insurgency the focus needs to be influencing the populace rather than destroying or degrading the military capacity of the enemy. With this in mind, the reality is that presence, persistence, and posture of RW aviation in a COIN theatre can have a damaging effect on the potentially adverse

[174] Personal observation as OC Chinook Flight, July 2010-April 2011.
[175] Department of National Defence, *Tactical Aviation Tactics, Techniques, and Procedures*…, 1-1 -1-2.

perception of COIN forces by the population and create an unintended psychological perception of domination or aggression by COIN forces on the populace.[176]

Unknowingly, an AMC could select routes and altitudes of flight for a major air assault operation that could pass over an area at an aggressive and low altitude where another GFC had spent enormous time and effort in building coalition trust and building security capacity and partnerships. A single event or repeated overflight such as this could cause significant setbacks for such a sub-unit GFC in connecting and building trust with the population in his battlespace.[177] Major Lee Robinson, in his essay on Attack Aviation and the COIN Battlefield, argues the same point by asserting that both lower flight profiles needed to improve sensor fidelity coupled with the need for test firing of weapon systems prior to entering higher threat areas in Iraq resulted in the "constant annoyance of the local population thereby separating the civilian population from the counterinsurgent forces."[178] This mismatch between air and ground commander intents and approaches can easily result in the subversion of the overall COIN campaign plan within an AO.

In a COIN campaign, the population remains the centre of gravity and any enduring improvement to the security situation and isolation of the insurgency depends in large part on the population's perceptions and understanding of COIN forces. For CHF-A in Afghanistan, the population's perception of Canadian aviation operations was a near constant debate as the Commanding Officer (CO), Flight Commanders, and Air Mission Commanders attempted to balance and weigh the force protection of the mission package with the potentially adverse effects an operation would have on the local populace in a given area. The end result was an

[176] Bellflower, *The Soft Side of Airpower*…,1-3.
[177] Personal observation as OC Chinook Flight, July 2010-April 2011.
[178] Lee Robinson. "Bull in a China Shop? Attack Aviation and the COIN Battlefield", *Small Wars Journal* (Aug 2012), 3.

iterative risk assessment of flight profiles versus adverse COIN impact in close cooperation with the Task Force Kandahar (TFK) Commander and his staff. This had to be revisited regularly as the threat level within the AO fluctuated dramatically not only with the season and climate, but also in response to the tempo and effectiveness of coalition security operations. For example, the overwhelming success of the "Model Village" initiative in the Dand district of Kandahar province caused the CO of CHF-A to restrict low overflight of the Dand district in the summer of 2010 in an effort to preserve the positive impressions and relations that ISAF forces had built within the local populace in Dand.[179]

There were two main flight profiles that were employed by CHF-A in Afghanistan. The low altitude (high threat) profile involved aircraft operating between 15-80 feet above highest obstacle (AHO) between 100-140 Knots while manoeuvering laterally and unpredictably to make targeting by small arms fire difficult and exposure overhead potential enemy positions kept to a minimum. This profile was used for the approach and landing phases to FOBs and for transit through higher threat areas. The high altitude (lower threat) profile involved the aircraft quickly transitioning up through the "threat band" and transiting through the AO above the threat envelope of small arms and Rocket Propelled Grenades (RPGs) at approximately 1200-1500 feet AHO and between 100-140 Knots. This profile was used for longer transits or transit through more secure areas in the AO and where the threat from enemy heavy machine guns was assessed as low.[180]

By no means should it be argued that force protection of Canadian aircraft and crews take a secondary position to COIN considerations as the high value nature of RW assets and their crews necessitate that they be protected to ensure a persistent RW mobility capability in theatre.

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[179] Personal observation as OC Chinook Flight, July 2010-April 2011.
[180] Department of National Defence, *Tactical Aviation Tactics, Techniques, and Procedures*…, 9-1 – 9-8.

The inescapable reality, however, is that take-off and landing operations, including transitions to approach, have to be undertaken at low level, as do the conduct of deliberate air assault operations and this will have an effect on the local population. With this in mind, it is simply important for COIN aviators to understand and plan for the effects, intended or unintended, that the profiles they fly and missions that they conduct have on the population within their battlespace.[181]

THE TACTICAL AVIATION INTELLIGENCE GAP

FM 3-24 instructs that COIN is an intelligence-driven endeavour, and it further specifies that the function of intelligence in COIN "is to facilitate understanding of the operational environment, with emphasis on the populace, host nation, and insurgents."[182] With the deployment of the JTF-Afg Air Wing in 2008, the RCAF deployed a Tactical Air Intelligence Section (TAIS) to provide for the daily intelligence needs of fixed, rotary, and unmanned aviation assets within the Air Wing. The TAIS was given the task of coordinating with joint intelligence sections to gather and collate relevant information, analyze possible and like enemy actions, and present assessments to theatre commanders and operators.[183]

While *Project Laminar Strike: Canada's Air Force: Post Op Athena* heaps praise upon the capabilities and accomplishments of the TAIS, the reality was that the air intelligence capability that was fielded was initially unprepared as an air centric unit to be able to provide and synthesize the ground manoeuvre and host nation/populace/insurgency focused intelligence required by RW aviators. Effective tactical aviation intelligence support necessitates an understanding of the enemy on the ground, his intent and capability, in addition to the enemy's

[181] Robinson, Bull in a China Shop? Attack Aviation and the COIN Battlefield…,6.
[182] Department of Defense. FM 3-24, *Counterinsurgency*…,3-1.
[183] Department of National Defence. *Project Laminar Strike: Canada's Air Force Post Op Athena*…, 15.

ability to influence and affect aviation operations from the surface to several thousand feet.[184] This is not to say that the air intelligence capability did not develop capacity and evolve throughout the conflict. Tactical aviation has intelligence needs similar to those of a mechanized infantry company but with an area of intelligence interest (AII) that includes the location and disposition of enemy weapons systems capable of affecting their operations from surface to approximately 5000 feet above ground. In this regard, RW aviation requires a blend of both ground and air centric intelligence and threat reporting to function effectively, especially in the complex COIN battlespace.[185]

One of the unique aspects to Canadian RW operations in Afghanistan was that CHF-A aircraft routinely operated in support of partner nations, well outside of the TFK AO, and often outside of Kandahar Province. The enormity of the size of the CHF-A AO made it extremely difficult for TAIS intelligence operators to source, analyze, and effectively communicate useful intelligence to aircrews due to the many sources and units with which they needed to liaise to build up a coherent intelligence picture of the expanded AO. This gap stemmed mostly from the fact that the vast majority of Canadian intelligence effort was largely focused within the TFK AO, which in 2010 had shrunk down to be the entirety of Panjwaii district west of Kandahar City. The TAIS relied on the Canadian reporting and analysis to build their intelligence picture and to brief CHF-A aircrew. Obtaining recent and useful intelligence from US and other coalition partners was often difficult and led to CHF-A aircrews routinely operating outside the Canadian AO with degraded situational awareness of both insurgent activity and ongoing coalition operations. This issue was made worse as the influx of the US troop surge was realized

[184] Geldhof, Green, Hajjar, and Litwhiler, *Intelligent Design: COIN Operations and Intelligence Collection and Analysis*…,32-33.
[185] Personal observation as OC Chinook Flight, July 2010-April 2011.

in the Fall of 2010, increasing troop density within the region and complicating coordination and liaison with the disparate ground force commanders.[186]

Intelligence for the conduct of RW tactical aviation operations in COIN needs to be focused on friendly and enemy ground manoeuvre, to include information regarding the local populace, with a robust predictive analytical capacity to assist aircrews in making sound risk assessments involving route selection, flight profile selection, and tactical arrival/departure (TACAD) decisions. The costs of such a gap were seen in the downing of a CHF-A Chinook, BLOWTORCH 61, by enemy fire on August 5th 2010. While it is often impossible to predict the exact location and intention of the enemy in an insurgency, the ability to fuse multisource intelligence into a coherent understanding of the enemy coupled with an understanding of the effects that other coalition operations have on the operating environment is a key enabling capability for RW air power to operate effectively in a COIN environment.[187]

In COIN operations, RW AMCs need to not only understand the threat and risks associated with their operations but they need to strive to understand all aspects of their battlespace to include cultural, host nation, and population based factors.[188] While much of the situational awareness within an AO is built through experience in operations, a robust tactical aviation intelligence capability that fuses all aspects of the operating environment, including both air and ground manoeuvre into a useful and digestible intelligence product, is invaluable. While this capability truly did not exist within the TAIS at the outset of Canadian air operations in 2008, there is now far greater experience within the Canadian air intelligence community

[186] Personal observation as OC Chinook Flight, July 2010-April 2011.
[187] Personal observation as OC Chinook Flight, July 2010-April 2011.
[188] Geldhof, Green, Hajjar, and Litwhiler, *Intelligent Design: COIN Operations and Intelligence Collection and Analysis*…,33-34.

regarding the intelligence imperatives for RW tactical aviation operations in an asymmetric COIN environment.[189]

CONCLUSION

The RCAF's experience over 11 years of supporting operations and three years of combat operations in Afghanistan has been transformative for both the individual capabilities involved and the institution as a whole. Royal Canadian Air Force equipment, training, and doctrine all evolved iteratively and progressively while supporting COIN operations in a dangerous, complex, and unforgiving battlespace. The air power capabilities that Canada placed at the disposal of its ground forces and its ISAF partners were relevant, well trained, and highly effective in carrying out their mandate; however, significant adaptation was required by tactical aviation to transition from years of training to conduct conventional force-on-force operations to conducting coalition COIN operations in a complex and challenging environment. Most importantly, the preponderance of these capabilities were of a secondary or supporting nature involved in the logistic transport, resupply, and provision of ISR support to Canadian troops rather than focused on precision strike. The Canadian decision to focus on the supporting capabilities is truly reflective of the evolution of COIN air power away from the destruction of the military capability of the insurgent group by air power alone to the provision of support to COIN forces to enable a more holistic COIN campaign.

Significant lessons were learned by the operators involved in executing the air missions in Afghanistan on behalf of Canada. Some of the specific RW challenges in the COIN environment include the effects caused by the scarcity of highly valued RW platforms in a theatre such as Afghanistan resulting in operations becoming asset-led rather than intelligence-

[189] Personal observation as OC Chinook Flight, July 2010-April 2011.

led. It was also recognized that METTT-C alone was not a sufficient analytical tool for mission analysis in COIN as it related to flight profiles and a deeper understanding of the psychological and terror effect that tactical aviation flight profiles and presence can have on a population gripped by an insurgency. Lastly, there existed a tactical aviation intelligence "gap" where RCAF intelligence operators were not able to effectively interpret the operational environment at the outset of the mission in order to ensure that aircrews had the intelligence products and resources to guarantee their situational awareness. In spite of these challenges the RCAF adapted exceptionally well to the COIN operating environment delivering unparalleled operational support to CF and ISAF ground personnel.

CONCLUSION

The employment of air power in COIN has evolved significantly over the past century. From its beginnings as a cheap surrogate to large deployed land forces, tactical aviation has evolved from the punitive application of indiscriminate force to impose empirical will as it did in Iraq in the 1920s, to the precision strike capabilities required in the modern battlefield. More importantly though, air power in COIN has evolved to become far less focused on the kinetic effects that FW air power provides and far more focused on the enabling secondary effects, such as tactical transport, MEDEVAC, and ISR, that RW air power has transformatively brought to COIN campaigns since the end of the Second World War. Fundamentally, the effects provided by RW air power in a counterinsurgency often far outweigh the costs in terms of both personnel and equipment and are inherently joint between air and land power. This requisite "jointness" in COIN has not yet been fully embraced by some COIN theorists and is certainly not adequately reflected in the current COIN doctrines.

The considerable political upheaval and instability that occurred in what are often to referred to as the "wars of decolonization" in the 1950s and 1960s, and in which the helicopter rose to become the most decisive enabler of COIN campaigns, are paralleled in both violence doctrinal evolution by similar small wars that occurred within years of the introduction of air power in the 1920 and 1930s. The doctrinal evolution of air power's use in a military context was established by the British in both Somaliland and Iraq where air power was initially viewed by military and political leaders as a surrogate to large standing armies to control the Empire's restless colonial holdings and a panacea to the poor financial state of European governments after the First World War. While the savings in both deployed troops and costs were realized by the deployment of aircraft to control and police the colonies from the air, it became apparent that

controlling populations and quelling insurgencies from the air alone was simply not viable, possible or realistic.

The French and Spanish also saw the economies of using aviation to address the Riffian rebellion in Morocco in the 1920s. The French pioneered the concept of "Air-Land Integration" during this conflict and were far more successful than the Spanish in quelling the insurgency. The adaptability and ingenuity of the Riffian rebels, however, successfully blunted many of the advantages offered by air power in this conflict and was illustrative of the COIN paradox that would emerge where expensive air power technology operated by the most powerful militaries of the world could be defeated or blunted by illiterate tribesman adept at dispersion, tactical movement, deception, and camouflage. This technological overmatch paradox exists still today where the full might and technological dominance of NATO air power is often defeated or nulled through low technology primitive communications systems of the insurgent forces in Afghanistan and by the cellular nature of modern insurgent networks.

At the close of the Second World War, the helicopter was introduced into the Burma theatre, providing an essential search and rescue capacity for aviators in the austere and often impenetrable jungles of Burma. While still technologically limited, the helicopter found a place within the imaginations of western military leaders by accomplishing the first helicopter rescue of downed "Chindit" aircrew deep into Japanese held territory with no prepared landing surface. While certainly not remarkable in either the size or the scope of a contribution to the Burma campaign, this event and the gained experience served as a launch point for the future integration of RW airpower into military campaigns, most notably counterinsurgency missions in complex terrain.

In Indo-China during the 1950s, France faced significant challenges in protecting and maintaining their disparate lines of communications with widely distributed forces. Their main challenge and weakness was ensuring their own mobility and conducting counter-mobility operations against the Viet Minh. Rotary wing air power was still not sufficiently technologically advanced during this conflict to make a meaningful contribution beyond basic reconnaissance and MEDEVAC tasks with many of both the kinetic and no-kinetic air power functions still being fulfilled by FW assets. Conversely, the British in Malaya faced a different sort of insurgency where the insurgents were more easily isolated from the population. This coupled with advances in RW technology allowed the British to better leverage the mobility and flexibility of RW air power to ensure their own dominance of the terrain and deny mobility to the insurgency.

France learned from the lessons of both Indo-China and Malaya, and heavily invested in RW capabilities to address the insurgency within Algeria immediately following their withdrawal from Indo-China. While the terrain offered similar challenges as it had in Indo-China, their SLOCs were much shorter and their dominance of the battlespace far more effective and complete. Notwithstanding the political failures that eventually resulted in France's withdrawal, the French military did tactically succeed against the insurgency on many fronts, in large part due to their heavy reliance on RW air power and unique COIN specific C2 structures to project their forces and their will into insurgent strongholds and sanctuaries. Building on this success the US military realized at the outset of the Vietnam War that they had over-invested on strategic capabilities during the Cold War at the expense of conventional mobility assets for their land forces. The result was an overhaul of the US Army's structure and doctrine to incorporate and leverage the technology of the turbine powered helicopter. The US recognized the

transformative nature of RW air power to the modern battlefield and re-organized their force structures to accommodate an Airmobile Division. The airmobile concept was tested and refined throughout the Vietnam War; however, many of the tactics and principles of airmobile warfare that the US military developed during this conflict remain in use to this day. Regardless, in Vietnam the US discovered that the key limitation of airmobile forces was a lack of persistence on the battlefield following their engagements. This limitation is still exploited by the modern insurgent in the contemporary conflicts in Iraq and Afghanistan, where the vast and complex terrain coupled with a smart and agile enemy can often conspire to avoid direct confrontation and re-establish themselves in areas vacated by temporally constrained airmobile forces.

In Southern Afghanistan and faced with a violent insurgency, Canada fought to adapt its air power capabilities to the COIN environment. Key challenges in both doctrine and training were encountered in adapting skill sets, tactics, and approaches to the COIN fight. Canada leveraged and favoured the indirect or the secondary enabling effects offered by RW air power over FW kinetic strike capabilities to ensure the most relevant support to deployed forces within Regional Command (South). Challenges with the provision of intelligence in the COIN context and in the selection of appropriate COIN profiles were met and overcome, with the RCAF regaining and establishing their tactical relevance by the end of Canada's mission in Afghanistan.

While RW air power has been transformational since its introduction into the military order of battle in the 1940s, the need and requirement for combat ready tactical aviation has never been more emergent than in the current conflict in Afghanistan. Increasingly, insurgents are willing to sacrifice their own lives to further their cause, making extensive use of the existing road networks a high risk endeavour. The speed of transit, precision of fires, clarity of ISR, and

the inherent tactical flexibility offered by RW air power causes it to be one of the most in-demand, highly-prized, and scarce assets in the Afghanistan theatre. However, much as in Vietnam, persistence over an objective area was the key weakness of RW air power in Afghanistan. The effects achieved often were only temporary in nature with little enduring effect on the battlespace unless troops were left behind to hold an area after an assault.

Unmanned technologies are now finally being integrated into RW platforms for logistic resupply of deployed forces offering a level of persistence and safety that has not yet been seen in the employment of helicopters. However, this trend brings forward some fundamental questions regarding the use of unmanned platforms for tactical mobility missions.

It is recommended that in addition to examining the future and emerging roles for tactical aviation employment in COIN campaigns and advances in the area of air-land integration, future scholarly work on RW air power should focus on the expected transformational changes associated with the more prevalent use of unmanned RW platforms in both conventional and irregular campaigns. While FW UAVs have crossed the threshold of niche capability and have been fully integrated into the conventional war fighting realm, RW UAVs have not. Fixed wing UAVs have found an economical and doctrinal role in precision strike and ISR tasks, and an investigation needs to be conducted into what level of technological maturity and redundancy needs to exist with RW UAVs to allow commanders to ever accept the tactical delivery of their soldiers to objective areas, and subsequent post assault support, conducted by unmanned rotary platforms. Only then will the true potential of RW air power support to COIN be fully realized and exploited.

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