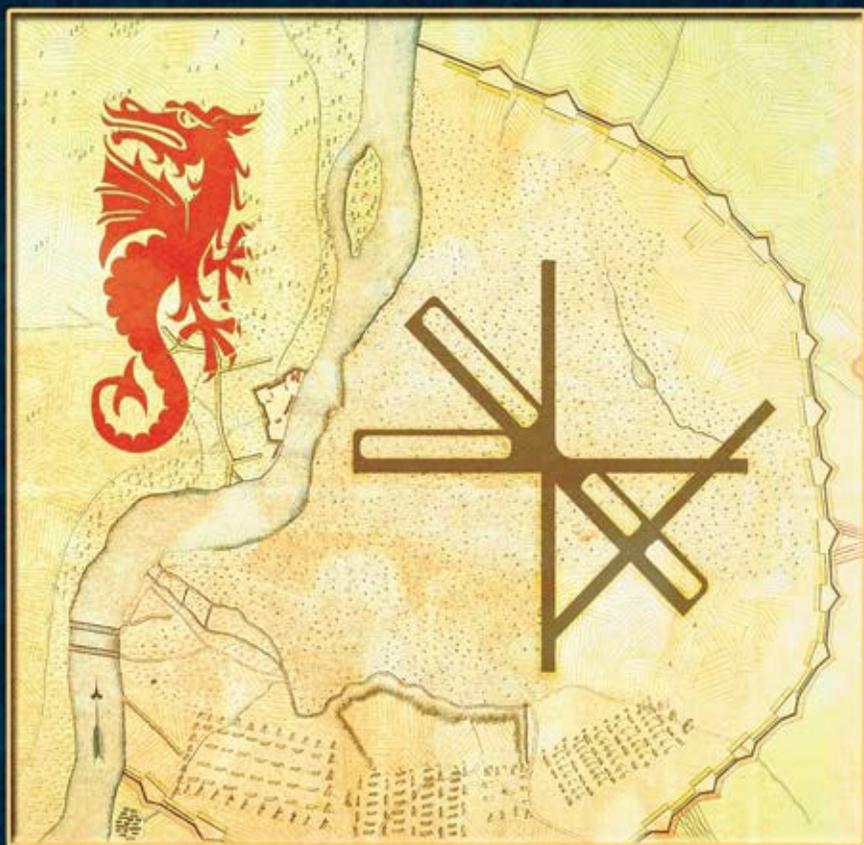


DEFENDING AIR BASES IN AN AGE OF INSURGENCY



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Defending Air Bases in an Age of Insurgency

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*This book is dedicated to all Airmen
and their joint comrades who have served
in harm's way to defend air bases.*

Colonel Caudill's anthology on base defense and counterinsurgency has broad implications for use by the joint and Total Force community that would have a lasting impact for our warriors. From my foxhole, the Air Force is making an enormous contribution to a much-needed dialogue on these critical subject areas.

—Maj Gen Peter Aylward, Army National Guard, retired,
former deputy commanding general, Iraq Security Forces at Multi-National Corps
and special assistant to the chief of the National Guard Bureau

The wars in Iraq and Afghanistan have proven the adaptability of Airmen in conflict, particularly in the area of air base defense. This book captures the lessons of those conflicts for the defense of air assets in a counterinsurgency environment. The authors have done the Air Force and joint community a service in examining and challenging the tenets of base defense and their future.

—Maj Gen Mary Kay Hertog, USAF, retired, former director of Security Forces,
Headquarters US Air Force, director of the Sexual Assault Prevention
and Response Office

Americans, especially Airmen, do not like fighting irregular warfare and are tempted to write such campaigns off as anomalies so they can return to conventional campaigns, with which they are much more comfortable. This book is an important part of the intellectual preparation needed for future irregular warfare campaigns, illustrating how to create the stable operating environment needed for air operations through sound air base defense practices.

—Dr. William T. Dean III, associate professor of comparative military studies and
counterinsurgency scholar, Air University's Air Command and Staff College

I am thrilled that Air University Press has invested in this anthology that adds to the history of base defense and provides guideposts to future leaders charged with defending air operations in complex environments.

—Brig Gen Allen J. Jamerson, USAF, director of Security Forces, Deputy Chief of
Staff for Logistics, Installations, and Mission Support, Headquarters US Air Force

Counterinsurgency and irregular warfare must become part of our security forces training if we expect to succeed in future conflicts. Lessons learned from the Iraqi and Afghan wars are critical to preparing the security forces career field for such future challenges. Research conducted by leaders with practical experience in base defense operations will only improve our preparations.

—Brig Gen Jimmy McMillian, USAF, retired, former director of Security Forces,
Deputy Chief of Staff for Logistics, Installations, and Mission Support,
Headquarters US Air Force

Contents

| | |
|------------------------------|-------------|
| List of Illustrations | <i>vii</i> |
| Foreword | <i>ix</i> |
| About the Authors | <i>xiii</i> |
| Acknowledgments | <i>xxi</i> |
| Introduction | <i>xxv</i> |
| <i>Shannon W. Caudill</i> | |

PART 1

HISTORICAL AND INTERNATIONAL PERSPECTIVES

| | |
|---|------------|
| 1 A Short History of Air Base Defense: From World War I to Iraq | 3 |
| <i>Erik K. Rundquist</i> | |
| 2 A Canadian Perspective on Air Base Ground Defense: Ad Hoc Is Not Good Enough | 43 |
| <i>Paul M. Thobo-Carlsen</i> | |
| 3 Air Support for Base Defense: Lessons for the Noncontiguous Battlefield | 111 |
| <i>Robert D. Sagraves</i> | |

PART 2

CASE STUDY—BALAD AIR BASE, IRAQ

| | |
|---|------------|
| 4 Defending the Joint Force: Lessons Learned from Joint Base Balad | 199 |
| <i>Shannon W. Caudill, Anthony M. Packard, and Raymund M. Tembreull</i> | |
| 5 The Defense of Joint Base Balad: An Analysis | 217 |
| <i>Joseph A. Milner</i> | |

CONTENTS

PART 3

THERE IS NO “REAR AREA”: CHANGES TO AIR BASE DEFENSE IN A COUNTERINSURGENCY ENVIRONMENT

- 6 The Air Force’s New Ground War:
Ensuring Projection of Air and Space Power
through Expeditionary Security Operations** 245
*Robert H. “Bob” Holmes, Bradley D. Spacy,
John M. Busch, and Gregory J. Reese*
- 7 Sharpening the Eagle’s Talons:
Assessing Advances in Air Base Defense Doctrine** 263
David P. Briar
- 8 Setting the Right Glide Slope: Preparing the Air Force
for the Next Counterinsurgency Campaign** 281
Paul J. Kasuda

PART 4

ORGANIZING FOR THE FUTURE

- 9 Nowhere to Hide: The Growing Threat to Air Bases** 303
Shannon W. Caudill and Benjamin Jacobson
- 10 Law Enforcement and Base Defense:
Improving Interoperability to Benefit the War Fighter** 319
Shannon W. Caudill and Bryan A. Keeling
- 11 Conclusion: Ten Propositions on the Defense
of Air Bases** 339
Shannon W. Caudill and Christopher L. Corley
- Afterword** 367
Dr. William T. Dean III
- Abbreviations** 373
- Bibliography** 381

Illustrations

Figures

| | | |
|-----|---|-----|
| 1.1 | Distributed area defense doctrine | 17 |
| 2.1 | Airfield attack objectives, 1940–1992 | 52 |
| 2.2 | Air base attack tactics, 1940–1992 | 52 |
| 2.3 | Standoff weapon footprints | 56 |
| 2.4 | RAF Regiment field squadron organization | 75 |
| 2.5 | <i>Objektschutzregiment der Luftwaffe</i> organization | 79 |
| 2.6 | RAAF airfield defense squadron organization | 82 |
| 4.1 | Comparison of attacks on Joint Base Balad to those on all US air bases in the Vietnam theater | 203 |
| 5.1 | JBB with named areas of interest depicted around the installation | 222 |
| 5.2 | 332nd ESFG organizational chart | 223 |
| 5.3 | Number of rounds fired per attack in Vietnam | 232 |
| 5.4 | Number of rounds fired per attack at JBB | 232 |
| 5.5 | Median monthly attacks and attack intervals on Joint Base Balad | 235 |
| 5.6 | Increasing insurgent miss distance as captured by the warning system | 235 |
| 5.7 | Power law (number= $450 * [\text{days}]^{-1.087}$) of deterred attack intervals | 237 |
| 5.8 | Medians give stable attack interval trends, and averages give increasing errors of attack intervals | 238 |

CONTENTS

| | | |
|-----|---|-----|
| 6.1 | Emerging joint nonlinear battlefield | 250 |
| 6.2 | Notional base boundary | 251 |
| 6.3 | Notional area of interest and base boundary | 252 |
| 6.4 | Typical BDOC organization | 253 |
| 6.5 | Proposed Air Force battle stations | 256 |
| 8.1 | JBB COIN synchronization structure | 294 |
| 8.2 | 332nd AEW organization structure | 295 |

Tables

| | | |
|-----|---|----|
| 2.1 | Deployable air force platforms and support elements | 49 |
| 2.2 | Typical standoff weapons | 54 |
| 2.3 | Nonstate groups with MANPADS, 1996–2001 | 55 |
| 2.4 | AIRCOM risk severity map for FY 06/07 | 57 |
| 2.5 | Relative size of allied air force ground-defense forces | 99 |

Foreword

This century will be characterized by a volatile international political environment, persistent conflict, and internal strife. Regional tensions will continue to create uncertainty, resulting in political dynamics ripe for civil war, political upheaval, sectarian violence, and insurgency. This is the environment in which we will conduct air operations for decades to come; as such, leaders will have to understand the complexity of the situation and how best to influence the battlespace adjacent to air bases.

To prepare for future contingencies and enable air operations, the Air Force must grow new air base defense leaders and build capabilities that rapidly adapt to crises, especially in an ever-evolving, asymmetric operational environment. There are three components to improving base defense operations in such uncertain circumstances. First, we must develop leaders who understand and are competent in the craft of base defense in varying environments. Second, we must invest in innovative and rapidly deployable base defense assets and technologies that are also adaptable to the changing operational environment. And third, we must advocate integrated defense concepts to all Airmen and joint/coalition personnel.

Producing leaders who can create and lead “learning” organizations capable of adapting to the dynamics of a constantly changing irregular warfare environment is critical to enable airpower in future contingencies. This requires mentorship of subordinates, self-development through studying counterinsurgency (COIN) and other publications on irregular warfare, and creating an environment of trust and smart risk-taking up and down the chain of command. As I write this, we are still fully involved in finishing important work in Afghanistan. We must invest our time in creating leaders at all levels that are not only tactically proficient but also judicious and intelligent in restraining the application of combat power in order to gain and maintain trust with the local populations surrounding American and allied air bases.

In addition to cultivating smart, adaptable leaders, we also need to develop competent tactical leaders capable of defending air bases in these uncertain environments. Small-unit leadership has been and will continue to be the cornerstone of tactical effectiveness. Future Airmen must be challenged early in their careers during diverse training scenarios to mature and to learn the basics of traditional

FOREWORD

combat base defense operations, while supporting complex situations such as those presented in stability and support missions.

As case studies in Vietnam, Iraq, and Afghanistan have shown, tactical leadership frequently determines the outcomes of air base ground attacks, as well as directly impacting and deterring indirect attacks on air assets. Confident and competent tactical leadership is the prerequisite for disciplined COIN tactics and traditional air base defense-in-depth concepts. Improving the intuitive capabilities of Airmen by stressing them under realistic combat scenarios will continue to be critical to the creation of agile and rapid decentralized decision makers in combat. Gen Wilbur Creech, former Tactical Air Command commander once commented, “The number one job of a leader is to grow more leaders.” This could not be truer in creating combat-ready tactical leaders for the air base defense fight of the future.

The Air Force recognizes that each operating environment presents unique security challenges. Realizing that no single solution set or doctrine will fit all circumstances requires that we leverage technology and other security advancements to aid in the overall base defense scheme. The integrated defense (ID) approach allows commanders to choose from a wide array of defense options and tools to maintain proper installation security and asset force protection in this stressed environment. Key to this effort are thinking outside the box, challenging outdated assumptions, using technological security advances where applicable, and tailoring ID to the defense needs of the operational environment.

Finally, the Air Force has made great strides to create a more capability- and effects-based approach to security through the ID concept. The Joint Base Balad case study contained in this book shows that ID tenets create a truly adaptable and dynamic base defense force that can benefit air operations and the joint community. Much remains to be done to ensure all Airmen and base personnel play a role in ID. To achieve synergistic base defense, there must be a personal investment, supported by good ID plans, that integrates all personnel and assets into a base defense scheme. It is also essential that we partner with and energize host-nation security forces and/or local law enforcement as part of ID plans with particular emphasis on detection and response outside the base. This requires a full commitment to supporting the rule-of-law approach as part of existing status of forces agreements and established rules of engagement. As demonstrated in Iraq, it is equally critical to be fully joined with the ground

FOREWORD

forces commander who operates in the indirect fire belt around the air base to fully synchronize base defense efforts and COIN plans.

In summary, I am thrilled that Air University Press has invested in this anthology that adds to the history of base defense and provides guideposts to future leaders charged with defending air operations in complex environments. As Airmen, we must reflect upon and debate the important issues addressed in this volume. Our duty as leaders is to build upon the lessons learned from recent conflicts in order to lay a solid foundation for the future, so that the Air Force and our joint partners can deploy airpower anywhere on the globe from a secure air base.

Allen J. Jamerson
Brigadier General, USAF

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I have to thank a number of senior leaders for their mentorship and support through the years. After our time on the Joint Staff, my former boss, Maj Gen Peter Aylward, US Army, retired, and I found ourselves in Iraq in 2010, and he was kind enough to fly up to Joint Base Balad to have breakfast with me on two occasions for some good chats about the war, baseball, and life. During this time, with General Aylward’s support and advocacy, I began writing for publication. Prior to the Joint Staff, I was first inspired to examine warfare through a more analytical light by my former boss at Air Combat Command, Maj Gen Mary Kay Hertog, USAF, retired. It was at ACC that I first rekindled my writing and analytical habits, learning much from the questions General Hertog asked and her keen sense of deliberation on difficult issues. Many thanks to Brig Gen Jimmy McMillian, USAF, retired, who advocated to Air University (AU) Press about the need to publish on this topic. I am appreciative to Brig Gen Allen J. Jamerson, director of security forces, for the commitment of time in writing the foreword of this book. The push notes and encouragement of

ACKNOWLEDGMENTS

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My experience as the commander, 532nd Expeditionary Security Forces Squadron, Joint Base Balad, Iraq, was central to the launching of this research. I was awed by the leadership of the squad leaders on patrol outside the wire and the dedication of the teams at our entry control points. I continue to be inspired by the Airmen that I had the privilege to lead and serve alongside. For example, SSgt David Veros served six tours in Iraq of approximately six months each—an example of “service before self” that will inspire generations. David and many other warriors like Lucas Hall, Rodney Lindsey, and Phillip Giovanniello suffered the results of improvised explosive device (IED) attacks. During my year in Iraq, the members of our unit experienced seven IED attacks and one firefight. These combat experiences, coupled with repeat deployments, sometimes with only four months at home station before the next predeployment training, have

ACKNOWLEDGMENTS

taken a toll in the forms of post-traumatic stress disorder, traumatic brain injury, other physical and mental scars, and damage to personal relationships. I also thank the members of Detachment 3 of the 732nd Expeditionary Security Forces Squadron, whom I had the privilege of leading as the International Zone (IZ) police force in Baghdad, Iraq, in 2006. These Airmen served brilliantly, and through their security operations and compound raids, undoubtedly made the IZ a more secure place for coalition forces and the Iraqi government to operate. The country owes a debt of gratitude to these veterans that can never be repaid. This book does a small service in shedding light on their service in defending air bases and their contribution to the Iraq COIN campaign.

Throughout my career, I have been blessed to work with patriots who put their country before self. I have had many great wing and group commanders and supervisors who gave me the latitude to lead and the feedback that made me a better leader and Airman. In particular among them, I would like to thank Maj Gen Craig Franklin, Maj Gen Michael Stough, Col David Ptak, Col Tim Farrell, Col Mary Peterson, Col Colleen Ryan, Col Jeffrey Wenzel, Capt Bob Stanger, and so many others. In addition, I would not have been as effective without the advice, mentorship, and leadership of chiefs and noncommissioned officers along the way, like MSgt Bob Feeley—who showed a young lieutenant the right way to lead and manage. In combat, I was lucky to have spirited, straight-shooting warriors like Chief Master Sergeants Ricardo Martinez, Bruce Spurling, Michael Lintz, and others. At home station, I was privileged to serve and learn from leaders like Chief Master Sergeants Brian Wilson, Brian McCaw, Wesley Hudson, and so many others throughout my career. I am grateful to the two Army battlespace owners whom I was privileged to work alongside to protect Joint Base Balad, Iraq: Lieutenant Colonels David Hodne and Eric Timmerman, two great American leaders from whom I learned a great deal through their example and intellect. I am also thankful for the service of our Iraqi interpreters and contractors who worked alongside our Airmen in harm's way, some of whom paid a price for their service with their lives.

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ACKNOWLEDGMENTS

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Naturally, I thank my family. First, many thanks to my parents and my brother, whose love and encouragement have shaped who I am and how I think. I am proud of my father's career in the US Navy and his Vietnam service. He will always be my hero. I will always be grateful to my mother for the grace she displayed throughout my father's military career, especially as she cared for two small boys while their father deployed to sea for six- to nine-month periods. My extended family has always been an anchor for our family as we have moved around with the military. I am also thankful for my father-in-law, a former Air Force F-15 pilot and veteran, who cheered my pursuit of this book project every step of the way—as did my extended family.

Finally, I offer my eternal love and appreciation to my toughest editor: my lovely wife. A writer and researcher in her own right, she provided her editorial skill and critique free of charge for some of the works herein. She is my inspiration, and I am a better man due to her encouragement, counsel, and love. Together we are raising two warrior-poet sons, who I hope will be proud of their old man for his small contribution to the study and application of airpower.

Introduction

Shannon W. Caudill

On old maps of the world, cartographers inscribed uncharted regions with the moniker “Here Be Monsters.” They sometimes added drawings of sea serpents, dragons, and other frightening creatures. Humans are threatened by the unknown and uncharted. So it goes with base defense. In a COIN environment, if commanders wall their forces up in a fortress with little or no interaction with the local populace, the lack of interaction can potentially lead to miscommunication and violence, with a profoundly negative impact on the flying mission. The monsters will materialize in the absence of action in the battlespace. Striving to eliminate the unknown is what military leaders must do in order to better defend air bases and erase the scribbled map drawings of beasts outside the wire.

Italian general Giulio Douhet long ago noted that “it is easier and more effective to destroy the enemy’s aerial power by destroying his nests and eggs on the ground than to hunt his flying birds in the air.”¹ This concept is reflected in Air Force Doctrine Document 1, *Air Force Basic Doctrine*: “Air and space power is most vulnerable on the ground. Thus, force protection is an integral part of air and space power employment.” However, base defense—defending one’s air assets on the ground—is one of the least understood operational aspects of airpower. Sound air base defense and COIN techniques provide the requisite secure foundation from which the Air Force launches combat operations and protects its personnel and resources. Without a strong, synchronized base defense and COIN effort, Air Force personnel and resources, as well as those of the joint force, are vulnerable to attacks that decrease their combat effectiveness.

This anthology discusses the converging operational issues of air base defense and COIN. It explores the diverse challenges associated with defending air assets and joint personnel in a COIN environment. The authors are primarily Air Force officers from security forces, intelligence, and the office of special investigations, but works are included from a US Air Force pilot and a Canadian air force officer. Four of the essays have been previously published in *Air and Space Power Journal*, some of which were updated to reflect changes in doctrine, and one is an excerpt from an Air Force Fellows research project.

INTRODUCTION

The authors examine lessons from Vietnam, Iraq, Afghanistan, and other conflicts as they relate to securing air bases and sustaining air operations in a high-threat COIN environment. The essays review the capabilities, doctrine, tactics, and training needed in base defense operations and recommend ways in which to build a strong, synchronized ground defense partnership with joint and combined forces. Some of the chapters offer recommendations on the development of combat leaders with the depth of knowledge, tactical and operational skill sets, and COIN mind set necessary to be effective in the modern asymmetric battlefield.

The genesis of this book comes from what I view as a fundamental need for Airmen to better understand base defense and irregular warfare operations. The idea for this book was born from my own frustration as I began my preparations for deploying to Joint Base Balad, Iraq, in 2009. I found it difficult to access relevant material on defending air bases in a counterinsurgency environment. Few write on the subject, and those who do commit time to writing on base defense often find their research papers buried in a military library or lessons-learned report—overclassified, if written in the field. There are only three other dated studies of note on the subject of air base defense, which are primarily focused on the Vietnam experience—the most recent published in 1995. The work contained in this book reopens the historiography and updates the literature in this field of study. The anthology contained within encompasses the lessons learned from air base defense in Iraq, Afghanistan, and more recent conflicts. It explores best practices for base defenders when operating in a counterinsurgency environment.

While at Joint Base Balad, Iraq, I was made aware of some vocal complaints made by one of the young captains working in my squadron about my commitment of time to writing the group and squadron's lessons-learned report. He, and many in the Air Force, viewed the time used to reflect, write, and evaluate the operational art as a waste. It seems our norms of organizational behavior dictate that we must be constantly “doing” rather than thinking and evaluating our methods and effects. This is unfortunate, especially in irregular warfare where brainpower is often more effective than a bullet. In 1997, while critiquing the Air Force's culture and lack of commitment to irregular warfare, Dr. Dennis Drew wrote, “US airmen have long been known for their fascination with technology and the mental toughness required to press home a bombing attack against a fierce

resistance or to outduel an enemy fighter. But they have never been known for their academic inquisitiveness, their devotion to the study of the art of war, or their contributions to the theory of airpower. Instead, American airmen have remained ‘doers’ rather than introspective ‘thinkers.’”²

So let us commit to thinking about the challenges of operating in an age of insurgency. As such, we must create organizations and leaders who can “adapt” and “learn”—key words in today’s military lexicon. Army Field Manual 3-24, *Counterinsurgency*, the seminal doctrine used by American and coalition forces in Iraq and Afghanistan, uses the phrase “adapt” 89 times but mentions “learn” or “learning” 179 times, for it is the learning that leads to the ability to adapt to new circumstances or information. A fundamental question for the military leader is, how does one create a learning organization—one that encourages experimentation and failure and promotes those that take smart risks? This is where an examination of COIN tenants and organizational culture is relevant to the task. COIN doctrine challenges leaders to promote learning, adapt to a changing operational environment, and develop an effective system to circulate best practices throughout their command. This can, in part, be accomplished by leaders taking the time to mentor and challenge junior officers and noncommissioned officers at home station prior to deployment. Leaders must challenge Airmen to read about issues related to COIN and base defense and then debate the merits of different tactics or case studies. The authors of this book hope to contribute to this effort so that we deploy thinking, adaptable warriors, not simply tacticians running a defense checklist.

The goal of this anthology is to stir discussion and debate about how best to protect airpower in the future. It is my hope, and the hope of the other authors, that this publication will spur interest in the history of air base defense, generate healthy deliberation regarding better methods for protecting air assets in irregular warfare environments, and lead to strategies and methods that better prepare Airmen for deployment to high-threat areas in which insurgents thrive.

Airmen practice COIN methods every day but often do not know that they are doing it. At the core of COIN doctrine is the premise that there are second- and third-order effects to every act of kindness, dialogue, act of respect, and economic activity between coalition forces and the communities in which they operate. Some examples come to mind of Airmen contributing to successes in this arena.

INTRODUCTION

While not perfect by any stretch, the Joint Base Balad efforts between 2009 and 2010 offer insights and best practices on how Airmen can contribute to the ground commander's COIN campaign plan. For example, at Balad, the wing's civil engineers and contracting personnel facilitated economic partnerships, employment, and opportunity for the region surrounding the base. Air Force firemen trained local volunteer fire departments in American fire department techniques. Airmen on combat patrol conducted key-leader engagements with Iraqi forces and conducted frequent walking patrols to build relationships with local tribes and farmers, rendered emergency medical aid in local villages, delivered elementary school supplies, provided wheelchairs for the disabled, and conducted a multitude of small but important community-outreach activities as a "good neighbor" to the local populace. In an often unsung mission, force protection escorts contributed when they treated the populace with respect and dignity while still protecting the base through their oversight of construction projects and other contractor activities. Individuals socialized, haggled, and bought things at the Iraqi bazaar, contributing by interacting with merchants, buying their wares, and establishing relationships. Security forces and medical personnel routinely helped Iraqis with life-threatening injuries at the base entry control points (ECP), building a lasting bond with parents of small children, injured policemen, and others who needed help. Airmen worked along Iraqi security screeners at all of the ECPs, day and night, to protect the base, building a lasting friendship and mutual respect that comes through serving the greater good as comrades. The screeners also helped to put an Iraqi face on the coalition presence and avoid fratricide through misunderstandings with the local populace. All of these things, and so many others, were often taken for granted, yet they each directly added to the stability of the region because they contributed to the overall COIN campaign and bonded Airmen with their Iraqi hosts.

Defending air bases, their requisite airpower assets, and joint personnel must be a concept in which all Airmen (and joint members) are involved and play a role. In 1999 I was privileged to work with an Air Force Vietnam veteran named Frank Kayter, my unit's first sergeant, who proudly produced photos of himself as an Airman with his M-16 rifle, standing near his assigned perimeter defense bunker. A personnel specialist by trade, he was responsible for defending a section of the base during high-threat periods. Today, Air Force doc-

trine states that “every Airman is a sensor” and plays a role in the new integrated base defense concept. Despite the rhetoric, the Air Force has often not lived up to this bumper-sticker slogan. Unlike the sister services, at many locations in Iraq, Airmen stood out because they were not required to carry a personal weapon for their own defense and did not play a role in base defense. Also fueling this disconnect was a propensity to contract security taskings to private firms. The attitude by some could be summed up as, “If you have a security concern, simply write a check.” If Airmen continue to be separated from any obligation for their own defense or defense of the base they operate, there may be a price to pay down the line, either from an insider threat or direct attack by an enemy force. Indeed, it may take a calamity on the scale of the British in World War II to sort out the future of American base defense. Dismayed at how few of his Royal Air Force personnel participated in base defense on Crete and reeling from the loss of Crete’s three airfields to German paratroop assault, Sir Winston Churchill, the British prime minister lamented:

Every man in Air Force uniform ought to be armed with something—a rifle, a tommy-gun, a pistol, a pike, or a mace; and every one, without exception, should do at least one hour’s drill and practice every day. Every airman should have his place in the defence scheme. . . . It must be understood by all ranks that they are expected to fight and die in the defence of their airfields. . . . The enormous mass of non-combatant personnel who look after the very few heroic pilots, who alone in ordinary circumstances do all the fighting, is an inherent difficulty in the organization of the Air Force. . . . Every airfield should be a stronghold of fighting air-groundmen, and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers.³

There is the intent of public policy and doctrine—and then there is the reality of how it is applied or rejected by the dominant organizational culture. We must strive to challenge stale doctrine and faulty assumptions, learn from the successes and failures in Iraq and Afghanistan, and foster the critical thinking and judgment of the next generation of military professionals. As the renowned military theorist Karl von Clausewitz opined, “Judgment is the ability to combine hard data, questionable data and intuitive guesses to arrive at a conclusion that events prove to be correct. Judgment-in-action includes effective problem solving, the design of strategies, the setting of priorities and intuitive as well as rational judgments. Most important, perhaps, it includes the capacity to appraise the potentialities of co-workers and opponents.”⁴

INTRODUCTION

The authors of this book committed the time to reflect on the recent conflicts and capture lessons learned. Leaders must dedicate time to this endeavor and examine better ways to defend airpower in hostile, complex environments. The military writ large, and the Air Force in particular, needs “thinkers,” people who commit time to read, reflect, critique, and write about the problems facing the military in irregular and future warfare. Recommendations for future study include the following:

1. Much like Roger Fox’s seminal 1979 work on base defense in Vietnam, a comprehensive history of air base defense in Iraq needs to be written. Since the US military commitment in Iraq ended in December 2011, this conflict can now be studied and lessons distilled. Since the essays included in this manuscript were written during various stages of the Iraq conflict, they provide snapshots in time. Much as it did at the conclusion of the Vietnam War, the Air Force History Office should commit resources to this effort to benefit future generations defending airpower assets against attack.
2. A hole in this manuscript effort is found in the discussion of Afghanistan. This may be due in fact to the reality that the Iraq theater was the main effort until well into the Obama administration’s first term. Not much has been written about air base defense in Afghanistan, and that which has been is classified. The issue of overclassification dogs the lessons-learned process, as prescient lessons often go to die in the world of classified reports.
3. I would advocate for a required reading list for those directly associated with defending air bases, including group and wing leadership. During my time in Iraq, I found many leaders up and down the chain of command who had not been exposed to the key concepts of air base defense, COIN doctrine, and ground force integration. This deficiency in knowledge was only corrected through vigorous briefings and gap analysis. Fortunately, leaders had a desire to learn and gain synergies, but it would have proven beneficial if all parties had some requisite weigh points for concepts and historical anecdotes.
4. While not directly related to air base defense, I would highly recommend a historical study on the contributions, experiences,

and lessons learned from the Airmen who deployed in direct support of the US Army under the headings of “In Lieu of Forces,” “Request for Forces,” and “Joint Expeditionary Trained” Airmen. Having been one of those Airmen, I believe it is a chapter of Air Force history that needs to be documented and explored.

At Air Command and Staff College’s 2012 graduation ceremony, Lt Gen David Fadok, president and commander of Air University, observed that the Air Force should perhaps include in its definition of airpower the deployment of Airmen providing expertise and skill sets to the joint force, regardless of whether they are performing traditional Air Force missions. These Airmen contributed to the COIN campaign in Iraq and Afghanistan as convoy truck drivers, intelligence specialists, military police, explosive ordnance demolition experts, and specialists in other functions. Their stories and lessons must be captured and celebrated by the Air Force.

Finally, I had the unique opportunity to teach US history to Airmen and Soldiers while in Baghdad during one of my deployments. Some Iraqi citizens attended this class, not for college credit, but instead to learn about American democracy and how our country developed its institutions of government. As Americans, we often look back at our democracy through rose-colored glasses, when in reality it was a messy and often violent course of events.

The following is an interesting quote to ponder: “I consider this insurrection as the first formidable fruit of the Democratic Societies; brought forth I believe too prematurely for their own views, which may contribute to the annihilation of them.”⁵ That quote could very well be about Iraq’s fragile state in the wake of the US military withdrawal, but it was actually written in 1794 by our first president, George Washington, about uprisings against a newly established democratic government called the United States of America.

I have come to appreciate our American history all the more because of my service in combat. We are serving in a truly unique time in our nation’s history and the histories of Iraq and Afghanistan, fraught with both danger and promise. Like those brave and noble veterans before us, we are writing history. By reflecting on the issues brought forth in this book, you may well contribute to writing a good ending for Afghanistan or a future operation.

INTRODUCTION

Notes

1. Giulio Douhet, *The Command of the Air*, trans. and ed. Dino Ferrari, Joseph P. Harahan, and Richard H. Kohn (Tuscaloosa: University of Alabama Press, 2009), 53–54.
2. Dennis M. Drew, “Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion,” in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell AFB, AL: Air University Press, 1997).
3. Winston S. Churchill, *The Second World War*, vol. 3, *The Grand Alliance* (Boston, MA: Houghton Mifflin, 1985), 692–93.
4. Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1976), 49.
5. George Washington, *The Writings of George Washington from the Original Manuscript Sources, 1745–1799*, vol. 33, ed. John C. Fitzpatrick (Washington, DC: US Government Printing Office, 1940).

PART 1

Historical and International Perspectives

Chapter 1

A Short History of Air Base Defense From World War I to Iraq

Erik K. Rundquist

The C-17s dropped the 173rd Brigade right into northern Iraq. That is the first time we've done something like that in a very long time. Notably there were 17 airmen that jumped in with the 173rd Brigade and those airmen were responsible for getting down there and making sure that airfield was ready to be used as rapidly as possible. It's a mission we're developing on the model of the RAF [Royal Air Force] Regiment. It's a good model to use and we're going to press with that.

—Gen John P. Jumper
“Leveraging Lessons Learned with Tactical Operations”

The Airmen that General Jumper, former United States Air Force (USAF) chief of staff, refers to were assigned to the 786th Security Forces Squadron (SFS) under the 86th Contingency Response Group (CRG) stationed at Ramstein Air Base (AB), Germany. This mission, in support of Operation Iraqi Freedom, represented the first use of a conventional USAF unit to parachute into a combat environment. Within 24 hours of the parachute assault, the team facilitated the arrival of C-17 Globemaster III intertheater airlift aircraft. This CRG airborne team consisted of a rated officer (pilot), medical and intelligence personnel, security forces, and aerial port, fuels, communications, and engineering experts.¹ Each respective specialist linked with a 173rd Airborne Brigade counterpart before, during, and after the operation in order to develop a joint service force protection and base operability solution to rapidly open the airfield.

The United States relies heavily on airpower to rapidly deploy strategic forces in response to worldwide contingency operations. During the 1991 Gulf War, cable news programs touted film footage of

This essay is an edited excerpt of an original research paper entitled “Courage in Adversity: Defending Austere Airfields with Air Force Contingency Response Groups” (research paper, US Army Combined Arms Center, Fort Leavenworth, KS, 2004).

laser-guided and satellite-guided munitions flying into enemy bunkers and destroying targets with pinpoint accuracy. In addition, a massive strategic airlift effort delivered over 500,000 passengers and hauled over 540,000 short tons of cargo into the theater on nearly 16,000 sorties. Once in theater, C-130 Hercules intratheater airlift aircraft flew over 13,900 missions and transported over 242,000 personnel.² The American and allied audiences witnessed firsthand this precision engagement and rapid global mobility. Unfortunately, America's enemies also watched these spectacular broadcasts and now fully understand the United States' reliance on this technology and, in particular, its use of airpower.

Since the first Gulf War, the United States has maintained its pattern of relying on airpower to conduct combat operations, respond to contingencies, and rapidly deploy combat forces. In the past 10 years, American military forces have deployed and opened austere airfields in Somalia, Rwanda, the Balkans, Albania, Mozambique, Afghanistan, Iraq, and other locations. The missions at these aerial ports of debarkation (APOD) ranged from delivering humanitarian supplies and conducting noncombatant evacuation operations to creating Army lodgments and bedding down fighter aircraft in order to project combat power.

Gen T. Michael Moseley, the former USAF chief of staff (and former combined force air component commander for United States Central Command) stated, "We opened thirty-eight new bases in support of OIF [Operation Iraqi Freedom] and OEF [Operation Enduring Freedom]. These bases were not only used to execute USAF missions but also were the home to joint forces and numerous coalition activities."³ Regardless of the use, these airfields may represent an American center of gravity, or decisive point, that an enemy force can exploit and attack. Joint doctrine supports this notion and identifies that first-in entry forces and base defense elements should deploy with sufficient organic combat power to preserve freedom of action and protect these US ports of debarkation.⁴

Air Base Defense: A Historical Perspective

If there is one attitude more dangerous than to assume that a future war will be just like the last one, it is to imagine that it

will be so utterly different that we can afford to ignore all the lessons of the last one.

—RAF Marshal Sir John Slessor
Airpower and Armies

In order to understand the future of air base defense (ABD) or integrated defense, it is critical to examine history and grasp lessons learned. This analysis will provide clarity as to the importance of airfields, related doctrinal issues, and US and international efforts to defend air bases. It will also examine how the USAF arrived at the conclusion that required a dedicated and capable force to conduct ground combat operations in order to directly enable air operations. The historical examination will thread ABD experiences from World War I through counterinsurgency (COIN) operations in Iraq and Afghanistan.

World War I

World War I represented history's first large-scale employment of combat aircraft. The war, especially on the western front, was characterized by a series of massive and complex trench systems that stretched from Switzerland to the English Channel.⁵ These battle lines were stationary and rarely shifted more than a few hundred meters at any one time. The Allied and enemy air forces situated their crude "forward" air bases well behind these static lines and enjoyed relative comfort and a high level of security from attack by conventional ground forces. In addition, there were no known unconventional or insurgent activities launched in the European theater to destroy aircraft or disrupt rear area airfield operations. With the lack of ground threat, ABD was characterized by interior guards, a role deemed adequate to the task.⁶

Interwar Period

The interwar period took all of the lessons learned from World War I and applied them to securing airfields. For the Americans, essentially nothing changed for ABD, despite the expanding role of military aviation.⁷ However, for the British, this expanding role included expeditionary air operations to economically police parts of its vast empire. Sir Hugh Trenchard's fledgling Royal Air Force (RAF) found a niche in supporting the Colonial Office. In 1920 an air cam-

paign was launched against the “Mad Mullah” in British Somaliland, and with its success, the secretary of state for war and air, Winston Churchill, intended to use airpower throughout the Middle East. In 1921 the first of six armored car companies was created in Egypt to support expeditionary air operations, and it deployed to Iraq the following year. These companies were the first ground combat element for the RAF, and they were used for mapping, conducting route reconnaissance, escorting convoys, and securing advanced landing strips in Transjordan, Iraq, and Kuwait.⁸

In addition, the interwar period was fraught with theorists trying to come to grips with how to best employ airpower. In 1921 Italian Giulio Douhet wrote, “It is easier and more effective to destroy the enemy’s aerial power by destroying his nests and eggs on the ground than to hunt his flying birds in the air.”⁹ While he implied aircraft would carry out the bombing task, the notion that airfields represented lucrative targets and their parked aircraft were highly vulnerable to destruction did not escape notice. It did not take a large leap of logic to destroy these vulnerable aircraft with ground-based means, and the paratroopers of the Second World War took that leap.

World War II

The Second World War differed from the “Great War” in that the Germans reintroduced mobility to the battlefield when its Blitzkrieg tactics ripped through the heart of France, pushed the Allies off the continent of Europe, and controlled most of North Africa. An important strategy for the Germans was to use their paratrooper and glider forces to seize Allied airfields and disrupt rear areas in order to support advancing ground columns. Belgium, the Netherlands, France, Denmark, and Norway all fell to Nazi Germany in similar fashion.¹⁰ The German technique for capturing airfields involved medium-altitude bombers hitting the fringes of the airfield and driving the anti-aircraft gunners into bunkers. This was followed up by dive-bombers and fighter aircraft strafing the airfield in order to keep the defenders buttoned up inside their shelters. Finally, the airborne assault would take place where paratroopers landed on the airfield, and “when the defenders came up for air, they found themselves looking into the muzzles of tommy-guns.”¹¹

A watershed event occurred in May 1941 when German paratroopers seized Maleme Airfield and subsequently captured the is-

land of Crete. To the Germans, this island represented a key base to project airpower into the Balkans and enable air control of the eastern Mediterranean. The Allies had placed a low priority on Crete. In fact, the British Chiefs of Staff noted of the Mediterranean region in April of 1941 that “Libya counts first; evacuation of troops from Greece second. Tobruk shipping, unless indispensable to victory, must be fitted in as convenient; Iraq can be ignored and Crete worked up later.”¹² Essentially the Allied forces were on the run and in a state of continually reacting to Axis advances. The defenses at Crete were ill-equipped for the task. One British infantry brigade had deployed from Egypt to garrison the island, and in addition two New Zealand brigades, one Australian brigade, and remnants of the Allied evacuation from Greece were to defend the island. In all, the Allies had approximately 40,000 troops with a few tanks, a regiment’s worth of artillery, little heavy equipment, and most importantly, no Allied aircraft.

The German plan, led by Gen Kurt Student, was simple. They would use three parachute regiments to assault the island’s three major towns of Maleme (west), Retimo (central), and Heraklion (east), where Crete’s airfields were located. Once the airfields were captured, the Germans would airland and ship heavier equipment and reinforcements to “roll up” British defenses along the island’s north coast road that connected the three towns. In particular, Student’s main effort would be Maleme, where he would crash land gliders onto the airfield to support the paratroopers with the 5th Mountain Division. While Student knew his force would be outnumbered by the defenders, he relied on the high quality of his troops, the Luftwaffe’s air superiority, and the element of surprise to defeat Crete’s defenders.

Essentially, the Germans realized that the island’s airfields were critical to the success of the operation. Despite the fact that the attackers suffered horrific losses, the Allies failed in many areas. First, they did not properly prepare the terrain with obstacles to deny the use of the Maleme Airfield (the other airfield attacks at Retimo and Heraklion were repelled). Second, the Allies failed to provide enough forces to defend the airfield. Third, the Allied commander, Maj Gen Bernard Freyberg, did not properly commit reserve forces to deny the German foothold. Most important, the Allies failed to grasp the concept that the airfield represented a center of gravity. Once the paratroopers established a tenuous grip at Maleme, the Luftwaffe rapidly reinforced the island with its transport aircraft.¹³

Upon the fall of Crete, Winston Churchill, now prime minister, sent a scathing memo to the chief of Air Staff in which he remarked, "Every airfield should be a stronghold of fighting air groundmen and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers."¹⁴ The memo clearly indicted the relatively small "unemployed" RAF ground support force, whose fighters had departed from the island before the invasion. However, the army maintained the overall defense of the region, and Churchill felt that its commander, Maj Gen Freyberg, lacked imagination and directed an uninspired static defense.¹⁵

The failure implied a lack of "air-mindedness" and understanding of the potential that airpower, in this case German transports, brought to the table. In addition, there were debates in Parliament centering on the protection of airfields where their defense was catapulted into the "first essentials" category. Cited during these debates was the lackluster and uncoordinated tactical relationship between the RAF and army airfield defense forces (at home and abroad) and the different defense priorities between the two services. The Air Ministry reacted to these developments by arming all RAF personnel, and on 8 January 1942 the decision to form the RAF Regiment was announced.¹⁶ The first robust and dedicated ABD force was born.

By July 1943 the regiment had forces spread across the globe. There were over 50,000 Airmen providing light antiaircraft and ground defense at installations at home and forward deployed positions.¹⁷ Defending and holding forward airfields were often tremendously difficult tasks. An important illustration can be found at Meiktila Airfield in the jungles of Burma. As in Crete, the airfield represented a center of gravity. Both the British and Japanese forces stretched their aerial supply lines to the limit. The British army seized Meiktila in March 1945 as part of its strategy to support ground operations and push through the region. The Japanese launched a massive counterattack and effectively cut all ground lines of communication. The fragile British lifeline was now mainly supplied through the air, and their enemy knew it. During the three-week struggle for Meiktila Airfield, the Japanese launched attacks and occupied key terrain surrounding the base at night.

Each morning, the RAF Regiment fought and gained control of the airfield in order to reestablish food, medical, and ammunition supply lines. On one occasion, the RAF Regiment drove back two companies of Japanese infantry to open the airfield. On another day,

a British transport pilot reported the RAF Regiment's bayonet charge had cleared the runway for him to safely land. During the struggle, every officer assigned to the 1307th Wing and its four squadrons was killed in vicious fighting while leading counterattacks.¹⁸ The RAF Regiment played a crucial role in defending and holding the airfield and proved its worth and valor in combat.

The American ABD experience during World War II was remarkably quiet. Following the fall of Crete, Gen George Marshall, the Army chief of staff, approved apportioning over 53,000 African-American troops to the Army Air Forces to stand up air base security battalions. These units were created in June 1942 and were equipped with rifles and machine guns and maintained a light anti-aircraft capability. Planning estimates called for 296 battalions to be created; however, other requirements took precedence, and ABD unit inactivation started in 1943. There were no instances of conventional or insurgent ground forces attacking American airfields in England.¹⁹

Conversely, in the Pacific, the objective of seizing islands in order to use their airfields was part of the grand strategy to isolate and defeat Japan. In fact, it has been argued that the war against Japan was essentially a fight for air bases.²⁰ For instance, US ground forces captured Japanese-held airfields on the islands of Iwo Jima, Marianas, Okinawa, and Ie Shima in order to support the air war. In addition, during large counteroffensives in China, Japanese forces swept through and captured American airfields at Ling Ling, Tanchuk, Kweilin, and Liuchow.²¹ In these cases, the attacks were so massive that few tactical lessons can be applied to ABD operations. As World War II closed, all of the American air base security battalions were disbanded.

World War II Aftermath

The United States created a new Department of Defense and established the USAF as an independent service in 1947. The following year, the Key West Agreement of 21 April 1948 defined service roles and responsibilities. Base defense was identified as a function common to all services. In this case, defense implied local security measures on a facility. The agreement did not mention a USAF ground combat capability, nor did it assign the USAF the mission of ABD. Moreover, the agreement did not describe how local installation security measures from all services would tie in with the Army's role of

performing area defense, nor did it discuss local base defense geographical limits. The subsequent joint doctrine did not provide guidance on task organization, size, or capabilities required of the base defense forces.²² While these issues seemed mundane for US bases, they proved problematic for America's next expeditionary operation.

Korean War

In June 1950, the United States maintained the same lack of tactical guidance concerning ABD. At the start of hostilities, the USAF possessed 10,000 active air police; however, their background focused mainly on law enforcement. The USAF recognized that additional troops were needed to secure forward-deployed Korean airfields, and within 15 months, this "ground-fighting" police force expanded to over 39,000 air police. These Airmen received formal ground combat training at Tyndall AFB, Florida, and deployed with rifles, machine guns, armored vehicles, and recoilless rifles to conduct ABD.²³ Despite the "crisis management" effort to rapidly organize, train, equip, and deploy these forces to Korea, the enemy for the most part did not oblige the defense effort. The major ground attacks occurred in 1950 when communist forces started their push south. Pohang was successfully defended in August 1950, only to be abandoned in the wake of a larger advance. Guerrilla forces assaulted the airfield at Kunsan, where they harassed the base and disrupted air operations until November 1950.²⁴ However, the USAF's additional troops did not arrive in theater until the following summer. For the most part, ABD was a "moot point," despite the fact that thousands of North Korean guerrilla forces continued to operate behind friendly lines throughout the war. For some unknown reason, they neglected to launch any large-scale operations against Allied airfields.²⁵

As American tradition seemed to dictate, upon completion of hostilities, the US military began its force drawdown, and the air police were no exception. Without any codified doctrine, the USAF had difficulty justifying to various congressional committees why they exceeded the number of Army and Marine military police troops. Without proper justification and in the face of congressional threats to mandate massive manpower cuts, the USAF "voluntarily" reduced its air police strength by 20 percent.²⁶

Vietnam War

America's ten-thousand-day war is important enough to discuss at greater length, as many issues concerning joint force and host nation interaction can be directly applied to current operations and force protection squadron task organization. The first mission for the US military in Southeast Asia was to operate as advisors and trainers in order to bolster the morale, confidence, and capability of the South Vietnamese armed forces. To support the training mission, the USAF provided assault transports, defoliate spray aircraft, reconnaissance, command and control (C2), and instruction ranging from fighter tactics and bombing to aircraft maintenance and ground supply.²⁷

The primary threats to the aircraft and installations were considered to be sabotage and terrorism versus a more sophisticated assault. The first solution to protect the early advisory air bases mirrored procedures standard at USAF bases located in the United States. Security teams controlled circulation, manned entry points, checked identification badges, and monitored work centers. These tasks, for the most part, were conducted by the Republic of Vietnam Armed Forces (RVNAF). Additionally, random perimeter defenses and exterior patrols fell under the responsibility of the Army of the Republic of Vietnam (ARVN) regional forces.²⁸ In fact, USAF air police were only authorized to guard aircraft at Tan Son Nhut AB and were banned from the flight lines at Bien Hoa and Da Nang airfields.²⁹

The initial absence of enemy activity around airfields lulled the USAF into a false sense of security. In February 1962, Headquarters, Pacific Air Forces (PACAF) conducted a staff assistance visit to examine the protection of USAF advisors at the Vietnamese bases. The staff visit's report ironically noted that if too much attention was afforded to base defense activities, like storing ammunition and weapons, this activity may entice the Viet Cong forces to attack.³⁰ As the advisory role for the United States expanded, the American forces began to further scrutinize the host-nation security. The US Military Assistance Advisory Group, Vietnam continued to state that it relied on the South Vietnamese government to protect American property, equipment, and advisors. By the end of 1963, several inspection teams from 13th Air Force, 2nd Air Division, and Headquarters PACAF noted that the South Vietnamese ABD forces were severely lacking. The host nation frequently did not man observation towers and defensive bunkers or conduct patrols as promised to the US Military

Assistance Command, Vietnam (USMACV). In addition, specialized South Vietnamese forces, such as airborne and infantry elements, were often conducting “training” away from the air bases, leaving entire perimeters exposed and vulnerable.³¹

On 1 November 1964, enemy forces launched a midnight mortar attack at Bien Hoa AB that destroyed five B-57 jet bombers and damaged another 22 aircraft.³² An investigation revealed that Viet Cong forces had moved to within 440 yards of the northern base perimeter and staged six 81-millimeter mortars. The enemy fired approximately 80 high-explosive rounds and departed before any South Vietnamese response teams could engage the enemy. In addition to the aircraft losses, the United States suffered four killed and 72 wounded during this standoff attack.³³ A terrorist bombing of Saigon’s Brink Hotel Bachelor Officer’s Club on Christmas Eve in 1964 again highlighted the relative ease of enemy movement throughout the South. Headquarters, PACAF continued to address ABD with the Joint Chiefs of Staff and USMACV. Their initial position, which remained relatively unchanged throughout the war, called for the USAF to gain responsibility for the internal security and perimeter defense with the US Army or Marine Corps augmenting South Vietnamese forces to actively control up to 8,000 meters around airfields.³⁴

The Joint Chiefs of Staff emphasized that deploying US combat troops were “to occupy and defend critical terrain features in order to secure the airfield and, as directed, communications facilities, supporting US installations. The US Marine force will not repeat nor engage in day-to-day actions against the Viet Cong.”³⁵ Additional forces for other airfields followed the Marine landing at Da Nang. A few months later, the US Army’s 173rd Airborne Brigade deployed to Bien Hoa. In July 1965, Gen William Westmoreland, commander USMACV, presented a force requirement list to Secretary of Defense Robert McNamara. Westmoreland requested that the US Army provide 68 infantry battalions over the next two years, with 21 battalions slated for defending Tan Son Nhut, Da Nang, Bien Hoa, and Nha Trang air bases immediately. Additional arriving infantry forces would be sent to defend Pleiku, Binh Thuy, Qui Nhon, Phan Rang, and Cam Ranh Bay.³⁶ As to be expected, the USAF was extremely pleased at the attention and effort being afforded to the ABD mission.

The Army’s perspective was based on an assumption that the rear area would be safe. Thus, as its forces established secure areas around airfields, it could continue to push outward and engage enemy forces.

From the USAF's perspective, as the number of troops expanded away from its bases, the air base ground defenses obviously became weaker. This was validated as there were no "rear areas" or sanctuaries in South Vietnam. It represented a noncontiguous and nonlinear battlefield. The Army followed its expansion concept, and in time, the percentage of combat troops devoted to securing the air bases steadily decreased.

By the end of June 1965, General Westmoreland gained approval from Pres. Lyndon Johnson to "commit US troops to combat independently of or in conjunction with Vietnamese forces."³⁷ Despite the buildup of combat forces, the shift to offensive operations, where the Army ventured well beyond the airfield's tactical area of responsibility (TAOR), was greeted by the Viet Cong forces with three standoff attacks in July and August 1965 against Da Nang, Nha Trang, and Bien Hoa. The results of the attacks identified holes in the defensive strategy where, like the South Vietnamese ABD forces, the airfields were left vulnerable and exposed. These three attacks resulted in six aircraft destroyed and 14 aircraft damaged.³⁸ By mid-1965, the USAF realized it must come to terms and accept responsibility for its own perimeter and internal defense. The air police, now security police (SP), were the logical choice in leading the USAF's ground combat effort.

By late 1965, over 2,100 SPs were rushed from the United States to South Vietnam in order to take up positions around airfields. The number of permanently assigned forces capped at around 4,700 troops in 1969.³⁹ The USAF used its SP operations in the United States as a template and applied it to Southeast Asia. The authorized troop strength was initially based on stateside manning formulas for close-in sentry duties of fighter and bomber wings, versus the obvious perimeter and standoff (mortar and rocket) threats that existed in South Vietnam. To address this issue, the USAF looked to the Army and developed a "defense in depth" philosophy. This doctrine called for building several layers of defense in order to maximize chances of detecting and defeating an attacking enemy force.

The USAF recognized the need to control the tactical area outside of the airfields to prevent enemy mortar and rocket standoff attacks, ultimately the primary ground threat that faced the USAF in Vietnam. However, the USAF tragically tended to look at the perimeter fence line as a legal demarcation, despite General Westmoreland's call for unit and base self-protection. Here the USAF looked to other services to address the standoff attacks, knowing USMACV's guidance

for combat forces to search and destroy the enemy far outside the base's tactical area. Intelligence networks provided the USAF commander his outermost layer of defense. The intelligence mission fell under the primary responsibility of the USAF Office of Special Investigations (AFOSI). From an ABD perspective, the AFOSI efforts were not very effective. Lt Col Kenton Miller, commander of the 3rd Security Police Squadron (SPS), noted at Bien Hoa, "Air Force bases were prohibited from sending reconnaissance teams off base. . . . The present system of the OSI being assigned the responsibility of off base intelligence is completely unsatisfactory."⁴⁰

Continuing with the defensive concept of operations, the USAF focused on countering penetration attacks that included sapper raids, terrorism, and large-scale assaults. The 37th SPS defense of the 20,000-meter perimeter at Phu Cat AB mirrored most other security squadrons. Their defenses consisted of several machine gun towers, hardened fighting bunkers, concertina barbed wire barriers, and minefields comprising a main line of resistance. Trip flares and military working dog (MWD) detection teams usually operated between fighting positions. If an incident occurred, a "security alert team" (SAT) immediately responded. Generally the SAT was a three- to four-man motorized team (usually in a jeep), armed with M-16 automatic rifles and by 1969 also regularly equipped with M-60 machine guns and grenade launchers.

The key to the SAT operation seemed to be the random nature in which this patrol responded and moved around the installation. In the event of an attack, several SATs rushed to the breach and held the enemy force for the base quick reaction teams (QRT). The QRTs were often manned by at least six personnel and carried an array of weapons, including machine guns (.50-caliber), antitank weapons, and grenades to outflank and repulse enemy attacks. The QRTs operated in all sorts of vehicles from standard jeeps to armored personnel carriers.⁴¹ To highlight SP resourcefulness, the 377th SPS and others staged napalm drum canisters into constructed ditches in order to create a command-detonated wall of fire if the base were overrun.⁴²

The final attempt to elevate SP combat capability was the creation of a test organization called "Safe Side." This unit was born in the wake of the Tet offensive, despite the fact the SPs had dealt horrific blows to North Vietnamese Army (NVA) and Viet Cong battalion-sized attacks against Tan Son Nhut and Bien Hoa air bases (which incidentally denied air operations for more than a day at Bien Hoa).

The intention of Operation Safe Side was to provide USAF commanders with a highly trained and specialized “Air Force Infantry.” This unit was tasked to provide high firepower, rapid mobility, surveillance, and internal security. The US Army instructed Safe Side SPs on advanced infantry ranger tactics, long-range patrols, ambushes, land navigation, heavy weapons, and air assault operations. The USAF was able to bypass the manpower ceiling by sending Safe Side squadrons in a temporary duty status for six months versus a permanent change of station for one year. Overall the unit proved highly capable but was poorly employed in the field. Team integrity was broken up; Safe Side members were placed on standard defensive posts; SP commanders were not instructed on their use and capabilities; and ultimately the program died in 1971 due to troop withdrawals and budget cuts.⁴³

There are several ABD lessons to take away from the Vietnam War experience. First, there was no SP staff position on USMACV’s staff after 1967, essentially leaving the ABD effort in a fragmented state. Second, the USAF and US Army were never able to address the standoff issue, and neither accepted responsibility to effectively control the TAOR. Third, the host nation was ill-equipped and ineffective in its effort to control the standoff footprint. Fourth, there was often poor coordination between USAF base defense forces and South Vietnamese base defense forces operating on and off base. Finally, there was little to no intelligence effort focused on ground threats to air bases.⁴⁴

1980s: “The Light Expeditionary Period”

While the main US ABD focus of the 1980s centered on forward-based operations in support of the North Atlantic Treaty Organization (NATO), a “light expeditionary period” followed the Vietnam War. For example, Operation Urgent Fury in Grenada in 1983 and Operation Just Cause in Panama in 1989 involved smaller SP contingents rapidly deploying with Military Airlift Command to secure aircraft in the Caribbean and provide enhanced security support at Howard AFB, Panama. The US Army was on the offensive side of airfield attacks with its seizures at Pearls and Salinas airfields in Grenada and Torrijos, Rio Hato, and Paitilla airfields in Panama. In both cases the USAF flowed in after the attacks to establish close-in security.

In Grenada, the SPs airlanded and defended the north and south ends of the runway, secured the Army's tactical operation center, and provided close-in security for aircraft and the psychological operations control facility. They coordinated extensively with the 82nd Airborne Division for additional defensive firepower and operated approximately 500 meters outside of the airfield to focus on areas where Cuban soldiers were firing weapons. The USAF SPs also assisted in transferring US Marine and Army control of the civilian airport back to local authorities.⁴⁵ Additional deployments to various communications sites throughout South and Central America highlighted close-in point defense of radar sites, albeit in some very harsh conditions, to support the war against drug trafficking.

The greatest impact on ABD during the 1980s included an examination of doctrine and a series of 31 initiatives put into motion through joint service agreements (JSA) in 1984. The USAF was expanding its manpower, training, and weapons capabilities to include a light armor capability for defending its airfields. Upon signing of the JSA, the SP mission rapidly turned from an off-base, tactical light-infantry-style force to an on-base police force confined to inside the perimeter. JSA 8 directed the Army and USAF to develop rear area security measures and focused on internal threats such as saboteurs and terrorists.

Overall, the JSA directed the Army to respond to threats from less than a battalion-sized force with its military police (MP) and to use the theater combat tactical force against larger enemy formations.⁴⁶ In fact, under JSA 8, effective October 1985, the Army assumed the task of external ABD security and defense during company- to battalion-sized attacks.⁴⁷ Subsequently, JSA 9 provided that the US Army would deliver ABD training for the USAF to ensure a common understanding of tactics and loose integration of forces. The idea of external and internal security of airfields was broken down into a distributed area defense (figure 1.1).

In this case, the SP force defended the close defense area inside the air base; the MP force covered the main defense area 3–5 kilometers beyond the base perimeter; and a screening force area beyond the main defense area was routinely patrolled. This doctrine assumed that everything that affected the airfield operation was in a neatly configured and delineated area. Problems arose, however, when fuel supplies, ammunition dumps, communications facilities, and navigation aids were located off of the installation.⁴⁸ Moreover, in a sus-

tained ABD operation, if the MP force was present, it more than likely would come from the reserve component. In this capacity, deployment estimates of the Army Reserve MP force would likely not be in theater for a “considerable” amount of time, especially during the critical opening phases of a contingency operation. There may be times when the organic USAF SP should temporarily surge and conduct internal and external operations until relieved.⁴⁹ Even if the MPs were deployed, they conducted battlefield circulation, response force missions, convoy security, and other missions as tasked by the Army. With these issues in mind, even with the presence of the Army, it was considered unrealistic that anyone other than the USAF base defense force would provide the initial response capability to an incident.⁵⁰ The JSA invited more questions rather than answers to conducting expeditionary ABD.

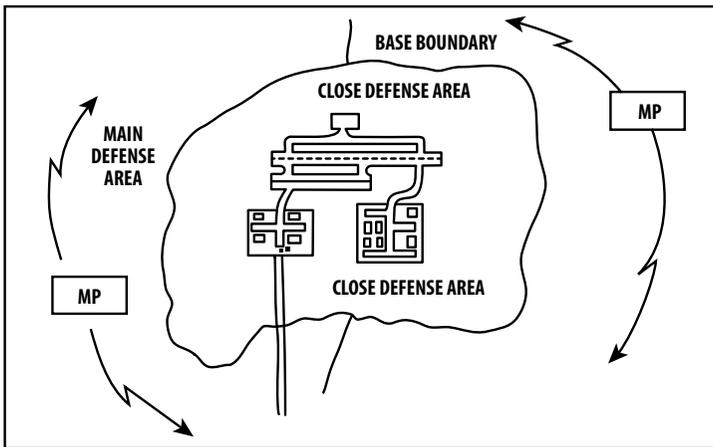


Figure 1.1. Distributed area defense doctrine. (Adapted from Department of the Army, Army Pamphlet 525-14, *Joint Operational Concept for Air Base Ground Defense*, 15 July 1986, 5.)

Soviet-Afghan War

On the other side of the world, the Soviets were embroiled in their own expedition in Afghanistan in the 1980s, where the ABD experience mirrored their American counterparts in Vietnam. The Soviets initially relied on friendly Afghan forces to secure the rear area in order to pursue guerrilla forces into their sanctuaries. As rebels suc-

cessfully infiltrated and attacked the rear areas, the Soviets responded by creating highly trained COIN teams. These elements conducted reconnaissance, patrolled actively, and provided rapid maneuver elements to defeat mujahidin forces attempting to disrupt air bases.⁵¹ An example of base security details included operations in the Kandahar province where Lt Col A. Yunakov's brigade secured the base camp, escorted long-range convoys, and fought guerrilla actions in the immediate vicinity of the base, in this case a special forces camp. He reported, "I usually dispatched a motorized rifle company, with the artillery battery, reconnaissance platoon, and two mortar platoons."⁵² The Soviets created clear zones around their airfields and base camps that resembled the American distributed-area-defense concept. They dedicated highly trained forces to rear-area operations. Infantry actions around the bases included fortified positions, hardened forward observation posts, scheduled artillery fire, and "free fire zones" within several kilometers of the camp.⁵³

To counter the Soviets, the mujahidin shelled garrisons, outposts, airfields, and cities on an almost daily basis. Their primary tactic was to infiltrate into position, fire a few rounds, and then displace quickly before the Soviet counterfire batteries or quick-reaction teams could respond. An Afghan mujahidin leader, Mawlawi Shukur Yasini, reported that his troops regularly used standoff weapons to attack base camps. In a 1981 attack, he sent a platoon-sized element of approximately 30 troops through the village of Samarkhel on a night attack. He recalled, "The shelling group left at dusk. . . . They occupied positions close to the entrance of the enemy camp. They had the guerilla mortar (60mm) and the RPGs [rocket-propelled grenade] with them. They opened fire with the RPGs and the 60mm mortar from close range at 2200 hours. . . . The shelling group fired at intervals over a two-hour period and then broke contact and withdrew."⁵⁴

This typical standoff attack illustrates a few points. The enemy used villages near the Soviet base to conceal movement, moved at night to infiltrate the base security zones, and displaced positions once they fired. The fact that the team was close enough to effectively use a 60-millimeter mortar (less than two kilometers) or an RPG (less than one kilometer) implies that the Soviets did not control these zones. In fact, it was later identified that the Soviets did not push out nighttime patrols but instead relied only on artillery support to control their zones with unobserved fire.⁵⁵ The biggest challenge and the greatest ABD lesson learned from the Soviet-Afghan War experi-

ence was the large-scale use of the man-portable air defense system (MANPADS). Between 1985 and 1989, over 1,000 Stinger missiles were supplied to the mujahidin fighters. Pakistani sources identified that in 1988 alone, over 100 helicopters, 31 transport aircraft, and 49 fighter aircraft were destroyed by MANPADS, ushering in a new challenge to ABD forces.⁵⁶

Operation Desert Storm

ABD during the 1990s can be characterized as the “heavy expeditionary period.” During Operations Desert Shield and Desert Storm, deployment priorities went to combat forces first, with support forces (SPs as well as many others) deploying into theater much later in the deployment sequence. There were a total of 25 installations throughout the theater that required security. With force protection given a lower priority, there were many instances of aircraft being secured initially by host-nation and even USAF ground maintenance. Unfortunately, the earliest phase of the deployment can be considered the most dangerous, especially at bare bases. The primary focus for the USAF SP was initially on internal security, with host-nation and US Army forces securing the exterior.

As with Vietnam, the services differed on their perspective of what constituted base defense. Both Army and USAF leaders demonstrated a poor grasp of how to establish rear area operations and how the services would link their efforts. The USAF wanted dedicated protection to the airfields, whereas the Army looked at ABD as just one of many rear-area security tasks. For instance, there were over 17,000 Army MPs who guarded 9,000 kilometers of main supply routes, 172 facilities, and over 84,000 enemy prisoners of war.⁵⁷ Rear-area security efforts focused on bases and base clusters for mutual support where needed. Host-nation forces provided support throughout most of the region. For example, in the United Arab Emirates (UAE), local shepherds were issued cell phones to conduct reconnaissance and police reporting activities around their airfields. In addition, United States Central Command Air Forces (USCENTAF) maintained a 44-man flight SP quick reaction force (QRF) at Riyadh AB, Saudi Arabia, that could be airlifted anywhere within the theater.⁵⁸ In some instances, the ABD mission evolved into a sophisticated effort with USAF SP troops operating independently off base in the UAE in order to counter reconnaissance threats far removed from Iraq.

Additionally, USCENTAF provided force protection inputs to aircraft ingress and egress profiles in order to mitigate enemy MANPADS threats at Dhahran and integrated defenses with US Army air defense artillery and coalition forces. Perhaps the greatest challenge for the ABD efforts during Desert Storm was the manpower-intensive task of providing weapon/logistic convoys throughout the region. Tighter perimeter defenses were loosened in order to free up troops to conduct these convoys. This forced the USAF to rely, in many cases, on quick reaction mobile defense teams and highlighted the SP requirements for better vehicles and communications.⁵⁹ The SPs proved they could deploy and operate in a very austere environment; however, USAF leadership did not fully embrace the complexities and scope of the ABD mission.⁶⁰ The key ABD lesson from Desert Storm can be found in the deployment priorities into the theater of operations. Force protection and other combat support needed to be brought into theater earlier. Additionally, the war highlighted some of the anticipated friction with JSA 8 and Army versus USAF priorities; however, the Army Patriot batteries seemed to smoothly integrate with USAF defenses. In addition, some attention was given to the standoff threat. While Desert Storm ended quickly, the USAF maintained heavy troop concentrations to support Operations Northern and Southern Watch in the region.

Siege of Sarajevo

The Cold War peace dividend was not realized in the Balkans, and ethnic conflict raged throughout the region in the early 1990s. A humanitarian crisis was brewing, and airpower promised to help alleviate the problem. The siege of Sarajevo's airport witnessed several hundred direct and indirect fire incidents between 1992 and 1995. While Americans were not part of the Sarajevo ABD effort, the prolonged mission underscored several observations. First, and not surprisingly, the airfield represented the main lifeline into the city, as ground movement to Sarajevo was impossible (airfields may be centers of gravity or decisive points). Second, the siege highlighted the effect of mortars, but more importantly snipers, in harassing airfield operations. Third, ethnic hatred spilled onto the airfield where Serb snipers targeted Bosnians moving about the base. Essentially the mere presence of civilians hampered the mission. Fourth, the notion of a strategic event was emphasized as Serbs applied pressure against the

United Nations Protection Force (UNPROFOR) defenders at critical times to apparently gain leverage with threats to close the airfield. Finally, the defensive effort illustrated the challenges of combined force ABD activities with Canadian, French, and other UN forces securing the airfield. Tactically it appeared the UNPROFOR base defense forces focused primarily on close-in security, maintained an on-base presence with armored vehicles, and responded mainly with heavy machine guns or even NATO aircraft.⁶¹

Mogadishu, Somalia

A similarly chaotic ABD environment, with no coherent local government, beset the US military in 1993 at Mogadishu Airfield, Somalia. In this case, keeping the airport open to receive combat and humanitarian supplies was critical. Mogadishu's airport was a "population magnet," where heavily trafficked and urbanized areas were adjacent to the airfield's perimeter. This situation represented a case where no viable host nation could assist in rear area support.⁶² As in Sarajevo, admittedly to a lesser extent, there were several indirect fire attacks on the airfield and key logistical support bases (most notably "Sword Base") that supported the humanitarian mission.

On 10 August 1993, Mogadishu Airfield sustained a combined direct- and indirect-fire attack in which four mortar rounds slammed into the base and small-arms fire damaged an OH-58D Kiowa helicopter. Additional airfield incidents included a mortar attack on 24 September that damaged four aircraft and another mortar attack on 6 October against Task Force Ranger's airfield compound, killing one and wounding 12 Soldiers. Further, on 15 January 1994, a MANPADS threat against Mogadishu shut down air traffic to the area.⁶³ While USAF SPs deployed and provided close-in security at the airfield, it appears the heavy urban environment made standoff protection nearly impossible in Somalia.

Khobar Towers and Its Aftermath

While the USAF deployed SPs to the Balkans, Rwanda, and Liberia (among other locations), the majority of the "heavy expeditionary period" involved routine rotations to forward-positioned airfields in Saudi Arabia, Kuwait, and Turkey to enforce sanctions against Iraq. This period of time was highlighted by constant deployments of troops entering and leaving these airfields in a continuous change-

over of ABD forces.⁶⁴ On 25 June 1996, this routine abruptly ended when terrorists detonated a vehicle bomb with a yield of greater than 20,000 pounds outside the fence of the Khobar Towers, a USAF housing complex in Dhahran, Saudi Arabia. This standoff attack killed 19 Airmen and injured hundreds more.⁶⁵ This ground-based attack served as a poignant reminder of terrorists' abilities to affect expeditionary airfields by targeting a housing complex that directly supported air operations.

The Downing Assessment Task Force examined how and why this attack occurred. Retired Army general Wayne Downing reported to the secretary of defense a total of 26 findings and 81 recommendations. Of interest to the ABD effort, finding 11 noted, "The lack of an organic intelligence support capability in USAF SP units adversely affects their ability to accomplish the base defense mission."⁶⁶ Moreover, the USAF launched several initiatives in the wake of the bombing. They implemented Downing Assessment Task Force recommendations, reorganized the Air Staff to ensure general officer oversight of force protection, redesignated "security police" to "security forces" to emphasize expeditionary base defense, activated the Air Force Security Forces Center at Lackland AFB, Texas, created the USAF Force Protection Battlelab to examine technology, developed antiterrorism teams, and created the construct for developing the force protection squadron.⁶⁷

These historical lessons spanning from World War I to the Khobar Towers incident are addressed to provide insight to operational ABD issues. In many cases, history repeated itself, especially with regard to joint force perspectives and emphasis on ABD. From the author's personal experience, the USAF has been maligned in the past for paying too much attention to strategic attack and not enough to tactical close air support. Ironically, the Army traveled the same path regarding ABD in Vietnam and Desert Storm as it pushed its forces well beyond the airfield's tactical area. This was a logical course of action, as the Army's primary tasks are to conduct offensive action and maintain the initiative to defeat the enemy (as strategic attack enthusiasts will declare of airpower). In spite of this, the USAF seemed content to let the training, equipping, and organizing of its ABD combat capability lapse after every major conflict, as was seen after Korea, Vietnam, and to a lesser extent Desert Storm.

Operation Shining Hope, Rinas Airfield, Albania

On Easter morning, 4 April 1999, 30 Airmen from the 86th CRG landed at Rinas Airfield in Tirana, Albania. This fledgling group had just completed a deployment from a covert site during the opening stages of NATO's Operation Allied Force in Kosovo. Subsequently, this classified mission placed the 86th CRG as the most forward-deployed and isolated ground force during the entire Kosovo conflict.⁶⁸ At Rinas, the 86th CRG's mission was to coordinate a massive international humanitarian relief operation. This involved establishing marshaling yards, offloading aircraft, and coordinating between dozens of foreign nations' militaries, private volunteer organizations, and nongovernmental organizations. The 86th CRG was the first military force to arrive at Rinas. The group deployed on three C-130E transports with two tactical vehicles, two 10,000-pound forklifts to offload aircraft, communications equipment, and three days' worth of life support. Within four hours of landing, the 86th received its first C-17 transporting humanitarian supplies. The group coordinated the use of Italy-based USAF Special Operations Command MH-53 helicopters to deliver food to Kukes, Albania (near the Kosovo border) in order to immediately affect the humanitarian crisis. In fact, four members of the 86th linked with a special tactics team to survey an assault strip near Kukes to determine the feasibility for either fixed-wing operations or truck offloading sites. This area represented the refugee funnel point from Kosovo into Albania.⁶⁹

The 86th CRG eventually provided tactical leadership and integrated French, Portuguese, German, Italian, Dutch, Austrian, Swiss, Belgian, Emirati, Spanish, and Russian forces. Moreover, the 786th SFS took on the mission to secure the international air assets, personnel, equipment, and relief supplies.⁷⁰

When the 86th CRG hit the ground, its 786th SFS represented the only allied "combat" capability at the airfield. The unit's first focus was to provide security teams for each inbound aircraft. The squadron established a robustly armed, mounted QRF element to respond to any location on the base, surveyed the airport, employed observation posts, and established a temporary base defense operations center (BDOC). Surveying the airfield involved close coordination with the airport authorities in order to site the coalition air operations and the US force beddown areas. The 786th SFS commander, Lt Col Chris Bargery, recalled, "The survey enabled the BDOC to get situated and

more importantly a hasty defense was established.⁷¹ All of these tasks were accomplished in keeping with unit standard procedures within two hours of arriving at Rinas.

Within two days, the remaining complement of 786th SFS Airmen expanded to 60 base defenders, deploying almost the entire squadron at that time. An additional 44 SFs deployed from the 437th SFS at Charleston AFB, South Carolina; 44 SFs and a four-man Mk-19 grenade machine gun team arrived from the 86th SFS at Ramstein, Germany, and several USAF and Navy MWD teams joined the effort. Their tasks centered on occupying key terrain (the heavy weapons established a strongpoint at the center of the airfield overlooking the north and east avenues of approach), base entry control on the western part of the airfield, aircraft security, and US compound security. The 786th SFS transitioned its staff into a full BDOC, constructed base defenses, and maintained a squad-sized base QRF. In addition, the 786th SFS performed helicopter flyaway security missions for the US Navy, as the joint task force staff surveyed suitable areas to build refugee camps.⁷² These tasks consisted of locating a quick egress from the helicopter, establishing a security perimeter, and positioning weapons along avenues of approach to the landing zone. Dozens of these missions were flown as survey teams were attempting to build refugee camps ahead of the human tidal wave that was forming on the border.

The force protection situation was challenging. The local threats involving high terrorist and critical criminal threat levels made the region extremely dangerous. Foreign military and United Nations personnel were carjacked, assaulted, robbed, and shot during basic off-base movements.⁷³ Other than the local threat, three major force-protection issues drove the 786th SFS defensive actions at Rinas. First, the squadron received reports of Yugoslavian special purpose forces infiltrating refugee movements, with the intention of moving south towards Tirana to disrupt Rinas Airfield. Second, the transport aircraft surface-to-air missile (SAM) countermeasures were regularly triggered while flying in and around Rinas Airfield; something, or someone, was clearly causing these incidents. Third, and most importantly, the arrival of the US Army's Task Force (TF) Hawk completely changed the operational tempo and mission focus at Rinas, morphing it into a strange combination of a humanitarian aerial port and tactical helicopter base.⁷⁴

Amid the humanitarian tasks taking place, the arrival of TF Hawk proved to be a “game changer.” The task force arrived approximately 10 days after the 86th CRG. TF Hawk’s purpose was to establish a foothold for its attack helicopters and a brigade combat team in order to provide additional tactical options for the NATO coalition forces. The 786th SFS force protection role dramatically changed when TF Hawk arrived at Rinas airfield with over 5,000 troops and their accompanying armored vehicles, aviation assets, and missile systems. The Army held the southern and eastern sides of the airfield with orders that its combat mission and the 86th CRG’s humanitarian task should not mix. The infantry dug defensive positions, employed fighting vehicles, sited mortars, occupied towers, and made Rinas a hard target—in their sector.⁷⁵

With its new combat mission, Rinas Airfield now presented itself as a legitimate Yugoslavian target with its “humanitarian mission shield” taking a backseat to deploying the combat force.⁷⁶ The 786th SFS pushed out its perimeter and interlocked its fires with the US Army’s 1st Infantry Division’s 6th Infantry Regiment to its right flank (north) and the 82nd Airborne Division’s 2nd Brigade 505th Parachute Infantry Regiment on its left flank (south).

The 786th SFS quickly gave up several US Army Ranger-qualified liaison officers to establish immediate credibility with the Army’s tactical operations center (TOC) and coordinated the joint ABD effort. The squadron owned one-third of the perimeter (2,300 meters) with about 150 defenders to control the north and west. Col Clifton Bray observed, “Had the CRG defenses failed there was nothing between the intruders and Task Force Hawk’s forty helicopters and 6,000 personnel.”⁷⁷

As the number of troops and the level of importance at Rinas increased, so did the requirement to address the standoff footprint and somehow influence the ground. The squadron used thermal imagers, occupied jointly manned observation points with the Army, established a sensor field on the western perimeter (with assistance from an advance team of the 820th Base Defense Group), and initiated a dedicated patrolling screen up to seven kilometers outside of the airfield. The patrols were carefully coordinated with the US Army TOC and were focused on the northern SAM footprint where they synchronized with aircraft arrival and departure profiles. These patrols were both mounted and dismounted and sometimes involved Army elements, but they were mostly USAF-only operations. On certain

patrols, especially in the western mountains, the Army attached a liaison officer to maintain radio contact with the Army TOC for fire support and accessing the helicopter QRF if required. Colonel Bargery recalled, “The US Army liaison officers were thoroughly impressed with the extensive premission planning and exhaustive rehearsals our patrols conducted. Furthermore, the TF Hawk commander loved us. After a thorough familiarization, he had great confidence in our defensive scheme.”⁷⁸

As the 786th SFS S-2 intelligence officer was linked to the Army TOC, the two services patrolled critical information and named areas of interest (NAI) and shared all data. Additional sustained force protection tasks included conducting long-range convoy security throughout Albania, expanding airfield security checkpoints, conducting personal security details for high-ranking officials, manning vehicle search areas where hundreds of humanitarian cargo trucks were searched, and engineering construction teams to harden the compound and build defensive obstacles.⁷⁹ In addition, the USAF monitored the Army’s frequency-hopping tactical radios and immediately coordinated situation reports, and the 786th SFS communications troops accessed TF Hawk’s intranet site. This enabled rapid dissemination of threats, coordinated patrol planning, and assured NAI coverage.

After the CRG’s 59-day deployment, the commander of United States Air Forces in Europe (USAFE), Gen John Jumper, commented, “The test of USAFE’s 86th CRG was a resounding success and far surpassed our expectations toward enhancing expeditionary operations.”⁸⁰ Close joint cooperation was prevalent throughout the mission as highlighted by the 786th SFS engineering mission, coordinated with the US Army, to provide and position substantial amounts of barriers to harden the USAF operations area. Likewise, the 786th SFS provided light engineering vehicle support to the Army. This typified the field relationship between the Airmen and Soldiers on the ground. Additionally, the 86th CRG commander noted the need for organic mortar and sniper support. The mere fact that TF Hawk was on the ground proved very fortunate; however, had the Army not been there, or had it deployed forward into Kosovo (as it eventually did), the inability to effectively provide counterfire against an enemy force could have proved disastrous.⁸¹ Finally, the paradigm of the USAF defenders not patrolling “outside the wire” was shattered and

tossed aside. The 786th SFS commander emphasized that patrolling is “vital to our job and approved joint doctrine.”⁸²

Operation Iraqi Freedom (Bashur and Tallil Airfields), Iraq

Kevin Dougherty, an embedded reporter with the 86th CRG, described the Bashur Airfield with this statement: “There is no water source. No sewage system. No electricity. No buildings. Not even an air traffic control tower.”⁸³ In addition, the airfield had absolutely no physical security measures and no boundary fence line. The airfield was a 7,000-foot-long strip of concrete surrounded by high mountains to the northeast and southwest and situated in a lush green valley. The town of Harrir was a few kilometers to the northeast, and two main supply routes (MSR) hugged the airfield on either side. The airstrip was home to a company-size Kurdish guerrilla force, or *peshmerga*.

The most likely enemy course of action included terrorist drive-by shootings, small team penetration attacks (highlighting the lack of a perimeter), enemy reconnaissance (especially from the mountains), standoff attacks (particularly from the MSRs that offered a rapid getaway), and Iraqi surface-to-surface missile strikes. The special forces teams operating in the region had coordinated with the *peshmerga* to control the key terrain overlooking the airfield.

The 20-man CRG team parachuted into Bashur Airfield along with approximately 1,000 paratroopers. Upon landing in the muddy quagmire, the 786th SFS assembled its jumpers and took control of the ramp in the southwest corner of Bashur Airfield. The group then focused on several key tasks before the first C-17 landed less than 24 hours after the parachute assault. First, the 786th SFS manned and secured runway crossing points within an hour after the airdrop. Second, the communications noncommissioned officer (NCO) connected with Aviano AB, Italy (the intermediate staging base), passed on situation reports, and relayed key information to reprioritize passengers and equipment due to a rapidly changing land management plan. Third, a runway clearance team linked with Army engineers, swept the primary landing strip of debris, and analyzed the pavement surface. Fourth, the command element linked with 321st Special Tactics Squadron members, who had infiltrated into Iraq with the 10th Special Forces Group before the jump and controlled the drop zone during the assault, and revised the aircraft taxi movement and offload plan.

The three-man liaison team linked with the brigade and battalion headquarters in order to stay abreast of the battle positions and, more importantly, to maintain the ability to relay instant threat information and airfield movement control procedures. The 786th SFS medic attached himself to the brigade medical cell and supported medical evacuation of soldiers injured during the assault. The commander, S-3, and snipers conducted a hasty survey, sited the BDOC, established defensive fighting position (DFP) locations, and confirmed the force reception plan. As the 786th SFS received its troops in subsequent airland operations, they expanded their control to the ramp and added hardened fighting positions to cover gully lines that snaked their way up the airstrip in order to cover unobserved approaches to the airfield. The engineering buildup initially focused on the Army and USAF prioritizing concertina on the eastern approaches to Bashur, entry control points, life support areas, and key C2 facilities. All air operations during the initial process were engine-running offloads in complete blacked out conditions.

The initial defense organization resembled a distributed area defense, with the Army controlling an outer perimeter and the USAF controlling all movement on the flight line and manning interior defensive positions. As the only conventional force in northern Iraq, the 173rd Airborne Brigade's initial focus was to provide a stabilizing force to protect the Kurds if the Iraqis pushed north. As the *peshmerga* and special forces applied pressure to the Iraqi army and began to rupture the "Green Line," C-17s delivered elements of the US Army's 1st Infantry Division, 1st Battalion, 63rd Armor Regiment to Bashur, and the brigade began its push south.⁸⁴

At first only one battalion pushed south, cutting in half the infantry force dedicated to Bashur. Within a few days, the 786th SFS had taken over responsibility of the interior and exterior base-entry points, where they reconstructed hardened vehicle search areas, built machine-gun overwatch positions, and searched over 550 supply vehicles entering the base. As the second battalion moved to the south, the brigade commander placed two infantry platoons (74 paratroopers) under the operational control of the 786th SFS to reinforce the eastern and western perimeter. The joint ABD force was now 195 troops. Sustained internal tasks included conducting perimeter defense and securing the Army's forward support battalion, ammunition storage point, refueling area, life support area, USAF Special Operations Command (AFSOC) aircraft, and transient cargo aircraft.

The 786th SFS continued engineering work, directed joint threat working groups, and provided C2 and nonstop medical force health protection.

Sustained off-base activities focused on area patrolling to ensure the base appeared to be a hard target. Embedded reporter Kevin Dougherty described a patrol where the effort was led by a 786th SFS NCO and formed from Mildenhall, Ramstein, and Spangdahlem troops. He observed the patrol leader, SSgt Damian Spaits, remarking, “This patrol and others that will follow are also intended to let the locals know the US military isn’t going to hunker down.”⁸⁵ The 786th snipers and intelligence staff sporadically accompanied patrols for continued area orientation. In addition, AFSOC helicopters shuttled 786th SFS teams into the mountains to examine key terrain overlooking the airfield.

The squadron maintained a heavy off-base convoy security mission to support missions into Irbil, Iraq. The missions usually involved contracting requirements to procure food, water, airfield runway repair materials, and various administrative supplies. In addition, senior leader off-base meetings were generally provided protective details and secured by 786th SFS troops.

With the brigade’s combat power delivered and Bashur’s runway cracked (due to massive stress), the 86th Air Mobility Squadron (AMS) deployed a team to Irbil to support the special forces airfield, and the 786th SFS moved an element to Kirkuk Airfield to survey the base for future operations. By mid-May 2003, the 86th CRG was fully reconstituted in Germany.

USAF lieutenant general Ronald Keys noted, “Coming out of Afghanistan, we’d found that there was a seam between the time the Army captured an airfield and when the Air Force began operations. In Iraq, there wasn’t a seam. We were there Day 1, Hour 1.”⁸⁶ Based on this, there are several key lessons learned from the airfield opening experience in northern Iraq. First, history’s principal conventional airborne liaison team concept was successfully and safely executed during a contingency. Second, the importance of the habitual training relationships cannot be overstated. This was critical during the initial planning phase where previous exercises and an embedded liaison team enhanced joint understanding and inspired confidence. It was manifested when the brigade entrusted two platoons to the 786th SFS.⁸⁷

Third, the 86th CRG demonstrated logistical flexibility by radically altering its logistics detail to ensure the brigade's combat power was quickly delivered. For instance, the entire group deployed with a total of 18 pallets or increments, of which the 786th SFS (and its augmented SF) maintained six pallets. The original plan called for the 786th SFS to deploy with 37 increments and eight high-mobility multipurpose wheeled vehicles (HMMWV).⁸⁸ The squadron deployed with 16 percent of its equipment, but that equipment worked well. The highly motivated augmented SF troops (from Spangdahlem, RAF Mildenhall, and Ramstein) lacked experience concerning DFP construction, patrol, barrier employment, field operations, and tactical awareness, and they needed in-theater training. Another challenge was the lack of heavy weapon teams that the USAF allocated for Bashur, which never arrived from the United States. This was not a problem until the brigade pushed south, leaving Bashur without any heavy weapons capability.⁸⁹

While the 786th SFS was conducting its airfield opening mission in northern Iraq, the 822nd SFS was performing a similar role where it partnered with the Army to open Tallil Airfield in southern Iraq. Elements of the 3rd Infantry Division moved north from Kuwait and captured Tallil Airfield, Iraq's second largest airfield, which was located four miles from the city of An Nasiriyah. The initial purpose for seizing Tallil was to dramatically shorten the supply lines and reduce the reliance on attack susceptible convoys. The first C-130 landed at the airfield on 28 March 2003, six days after the base's initial capture by US forces. The runway was littered with obstacles, wrecked vehicles, and cement blocks in a makeshift effort to deny its use by coalition forces. The base had not been used since the first Gulf War, as it was in the southern no-fly zone.⁹⁰

After the 3rd Infantry Division pushed through, the US Army National Guard's 76th Infantry Brigade Combat Team, 1st Battalion, 293rd Infantry Regiment moved in and provided initial base security. The 822nd SFS had flown from Moody AFB, Georgia, and staged in Kuwait. During the weeks leading up to departing friendly lines in Kuwait, the squadron had rehearsed airfield seizures since it was linked to the 82nd Airborne Division in similar fashion as the 786th was joined with the 173rd. When the ground convoy option was directed, part of the 822nd convoyed north with the 82nd Airborne, plus the squadron secured approximately 30 Patriot battery vehicles also moving north.⁹¹

Upon arrival at Tallil Airfield, the ABD force was heavy. At first, the defense force comprised the full complement of the 822nd SFS, totaling 179 troops. This included all USAF specialties from their squadron force protection (FP) headquarters. In addition, the squadron was augmented by Air Force M-2 heavy machine gun and Mk-19 grenade machine gun teams from the 204th SFS and the 99th SFS from Nellis AFB, Nevada.⁹²

The early challenge for the 822nd SFS was to determine which service actually owned the airfield. The commanding officer of the Army's 171st Area Support Group claimed he was the cluster commander for several bases; however, this guidance was never passed through USAF channels. Without a clear-cut single point of contact for base defense, ABD responsibilities were coordinated between the 822nd and the 1-293rd Infantry commanders.⁹³ As the initial C2 structure was being worked, the squadron conducted several concurrent actions to ensure that the FP needs at Tallil Airfield were being addressed.

Initially, the 822nd attempted to create a safe operating environment for air operations. The USAF's primary concern was to maintain the logistics air bridge and bed down fighter aircraft. The chaotic nature of coalition forces operating in and around the airfield forced the 822nd SFS to focus initially on controlling base traffic circulation and create USAF-only restricted areas. This enabled the USAF to establish a first line of defense against the possibility of unsafe friendly forces not accustomed to operating in close proximity to daytime air operations, let alone completely blacked-out tactical airland missions.⁹⁴

The 822nd SFS next set out to assume ownership of the base entry control mission and with it transitioned to take the joint force lead for all vehicle searches. Before the Army handed over responsibility for the vehicle search area, the 822nd immediately supplied its K9 teams to assist the Army, as the USAF maintained the only MWD capability on the airfield. As the Army continued to get tasked for other details, the next step was for the 822nd SFS to take portions of the perimeter defense. When the 1-293rd Infantry was relieved by Army military police, the USAF took even greater sections of the base perimeter and the entire interior base patrolling mission. Both the 1-293rd and 822nd maintained QRFs that supported each other if needed; however, when the MPs initially came in, their forces were often tied to securing extensive MSR networks throughout southern Iraq.⁹⁵ From a joint interoperability perspective, the 822nd SFS

seemed to commence a “divide and conquer” strategy as the squadron gobbled up tasks and increased its span of control. By taking additional missions at the airfield, the 822nd SFS enabled the Army to dedicate more forces to its main effort to support combat operations in Baghdad.

The ability to assume additional roles was due in large part to the first-rate technology that deployed with the 822nd SFS. Tactical sensor fields were quickly established and provided additional layers of surveillance and detection around critical facilities and aircraft-restricted areas. The 822nd SFS also recorded the first USAF use of the man-portable surveillance and target acquisition radar (MSTAR) ground defense system to analyze movement and indirect fire acquisition at Tallil Airfield. In addition, the squadron possessed a remotely piloted vehicle (RPV) to support the ABD mission. USCENTAF deployed mobile training teams to support the MSTAR and RPV. These teams examined the technology’s strengths, weaknesses, and tactical employment considerations. With the FP RPV, for instance, it took serious negotiating, practice flights, and air coordination meetings to inspire confidence with the USAF expeditionary wing leadership that the RPV would not damage the base’s fighters or disrupt air operations.⁹⁶ There was a massive joint force push to erect FP barriers throughout the airfield.

As compared to the other case studies, exterior patrolling operations were more convoluted at Tallil. Off-base surveys were conducted by the US Army and counterintelligence personnel before the 822nd SFS had arrived at Tallil. In addition, the Army infantry and MP elements did not relinquish control of external patrolling of the standoff footprint in support of the ABD mission. Unfortunately, as history had already demonstrated, the Army shifted priorities based on new higher headquarters missions.⁹⁷ The major exception to the off-base operations centered on the many armed convoys that the 822nd SFS led. Despite the airfield being opened, there was a lack of dedicated airlift to deliver the USAF expeditionary wing’s support packages. The 822nd SFS planned, led, and secured several long-range overland movements to deliver Harvest Falcon (beddown support package) equipment, food, and logistical supplies from Kuwait to Tallil Airfield. These convoys were extremely well armed with an antitank and antipersonnel capability and vehicle-mounted thermal imagery support, as was the case for the on-base mobile fire teams.⁹⁸

Unlike the other 786th SFS case study, the 822nd SFS experience at Tallil demonstrated a full force-protection squadron moving in and securing an austere airfield. From a C2 perspective, the 822 SFS deployment appeared to resemble a “linear” battlefield in that the joint rear area coordinator and the base cluster linkage issues were raised. In all actuality, the 822nd possessed the communications equipment to talk with the Army’s rear area operations center and 1-293rd Infantry’s frequency-hopping radios. Tallil represented part of a larger tactical movement when compared to Bashur Airfield, which from a force protection viewpoint, was a stand-alone airfield and not fully tied into any larger tactical scheme beyond its TAOR.

Operation Enduring Freedom, Afghanistan—The Long War

As of this writing, combat operations are ongoing in Afghanistan; however, there are some key unclassified observations that highlight missions and threats that base defense forces are facing in this decade-long COIN. The USAF continues to conduct traditional base defense activities such as aircraft security, entry control, vehicle search operations, perimeter defense, quick reaction force support, law enforcement, and C2. In addition, Airmen are directly involved with long-range off-base patrols to counter threats to airfields and aircraft; tactical security support for off-base USAF Office of Special Investigations teams; flyaway security missions; joint expeditionary task support, especially MWD teams supporting the US Army; and provincial reconstruction team support.⁹⁹

With this wide variety of missions, base defense in Afghanistan has proven challenging for several reasons. First, the enemy is highly committed to ground attack as demonstrated by multiple complex attacks using a combination of indirect fire, direct assault, and suicide bombers. Second, the enemy has proven adept at conducting insider attacks against US and coalition forces through ruses and infiltration of the Afghanistan national security and police forces. These “green-on-blue” attacks have proven frustrating to both coalition and Afghan forces alike. Finally, the joint- and combined-force NATO mission has made base defense a challenging proposition due to differing approaches and perspectives on base defense in the region. An attack on Bagram Airfield on 19 May 2010 clearly illustrates the complexity of enemy attacks.

Sixteen insurgents were killed in an assault on the base that resulted in the death of one US contractor and wounding of nine US service members. At about 0300, the insurgents initiated their assault with indirect fire using rockets, an attempt to distract base defenders from an assault on Bagram's two main entry-control points. Some of the insurgents wore US Army combat uniforms (ACU) in an effort to confuse defenders and used a combination of rockets, hand grenades, and small arms. The ground assault was conducted on foot, and the insurgents focused their fire on the guard towers.

A coalition spokesperson stated that four insurgents were wearing suicide vests but were killed before they could detonate them.¹⁰⁰ The attack resulted in the shutdown of flying operations for "a couple of hours" and disrupted other operations for the coalition base.

Bagram's perimeter defense was largely the responsibility of the USAF's 455th Air Expeditionary Security Forces Squadron, but a complicated joint- and NATO-organized base defense relied on a multitude of units responding to the incident. A spokesperson stated, "It's a team effort. You've got mixtures of units and personnel."¹⁰¹ The incident was described by one Airman:

Airman Zeising, deployed from Ramstein Air Base, Germany, explained he had been in his tower on the south side of the airfield for about five minutes when he heard an explosion. "When I heard the explosion it was a small one and I thought it was an IDF [indirect fire] attack." He stepped onto the catwalk of his tower and began to scan the area to look for a point of origin but did not see the initial explosion. As he proceeded back into his tower to grab his radio, Airman Zeising noticed some suspicious personnel. "Two individuals were walking along the perimeter in (Army combat uniforms)," he said. "As they were walking, one raised a rifle and began firing." Once he saw the individuals firing, Airman Zeising proceeded out to engage them and noticed two more individuals in the distance. "Once I started engaging, they moved to a covered position out of sight. I ran inside, grabbed my radio and when I was trying to call in, they reappeared and began to shoot randomly and throw grenades." As Airman Zeising, a Logan, Iowa native, engaged the enemy, a support element of 455th ESFS [Expeditionary Security Forces Squadron] personnel and Army quick reaction force moved to his position in support. He neutralized two enemy combatants and when the other units arrived, the other enemy combatants were eliminated.¹⁰²

The USAF's 455th ESFS was comprised of more than 1,000 personnel, including contractors and civilians. This unit manned numerous perimeter guard towers, entry control points, and other security checkpoints throughout the installation's base defense sectors.¹⁰³ Inte-

grated base defense assets included incorporation of wing and coalition aircraft and intelligence assets flying through the battlespace. Describing the airborne base defense effort, Lt Col Aaron Lade, 455th Expeditionary Operations Support Squadron commander, said, “We have assets that return to Bagram with ‘x’ amount of time left, so we want to maximize their effect. . . . So, we talk to the Joint Defense Operations Center to figure out how we can best employ our airpower to defend the base.” Capt John Dayton, 455th AEW senior intelligence officer, explains that “the primary organizations that benefit from residual base defense is [*sic*] Task Force Maverick, Air Force Office of Special Investigations and Air Force Security Forces. . . . Each one has different named areas of interest around the base, and everybody makes inputs. Our mission planning cell puts together a product that gets everybody’s priorities on the same sheet of music. It ensures that our efforts in the joint fight are efficient and effective.”¹⁰⁴

Insurgents have demonstrated successful ground attacks specifically aimed at destroying coalition aircraft. On the night of 14 September 2012, insurgents penetrated Bastion Airfield (a British and US Marine Corps base) in Helmand Province, killing two Marines, wounding nine others, and destroying six fighter aircraft. A military official exclaimed, “We’re saying it’s a very sophisticated attack. . . . We’ve lost aircraft in battle, but nothing like this.”¹⁰⁵ Initial estimates indicate that 15 attackers blew a hole in the perimeter fence, assaulted through the breach, and rushed towards their preplanned targets. The result was the destruction of three refueling stations, three light hangars, and six AV-8B Harrier II fighter aircraft. The total damage of this coordinated and preplanned attack is estimated at over \$200 million and is the most costly attack (in materiel) during the US involvement in Afghanistan.¹⁰⁶ While Bastion was not defended by the USAF, the challenges of defending a multinational airfield and the complexity of the attack mirror those of the Bagram attack in 2010.

While the environment in Afghanistan has been challenging for base defense forces, the USAF has been recognized for its efforts not only to conduct but also to lead joint defense operations in the country. On 21 May 2012, Task Force 1/455 was officially activated by Regional Command East to integrate the USAF and US Army base defense activities and placed under a single group commander. This effort enabled the USAF 455th Expeditionary Mission Support Group commander to be a battlespace owner for large portions of terrain in Parwan Province outside of Bagram Airfield in an effort to synchro-

nize off-base, perimeter, and on-base emergency services and base defense operations. On 16 November 2012, the 455th Expeditionary Security Forces Group (ESFG) was officially activated with dedicated outside- and inside-the-wire squadrons due to “the increased mission scope, battlespace ownership, and to create the appropriate command structure to further our combined operations.”¹⁰⁷

The 455th ESFG is now responsible for one of the largest concerted outside-the-wire missions in the history of the USAF at one of the world’s busiest airfields. The unit must also contend with the influx of thousands of Afghan workers and hundreds of vehicles entering the installation on a daily basis. Moreover, the group must accomplish these tasks in a fiscally constrained environment, where resources and coalition “boots on the ground” are significant planning considerations. The base defense forces are leveraging technology, synchronizing dedicated air support, and partnering with joint and coalition intelligence assets to influence the base security zone. While the insider threat continues to be a critical focus point for all Airmen, the 455th ESFG is also focused on the most common enemy tactic to disrupt air operations: the standoff indirect fire attack.

Conclusions

The security of air bases is a prerequisite of successful air operations. . . . [I]t is the opening stages of a future war when we may expect to be on the defensive and when, if the lessons of the recent war are applied, the enemy will make the neutralization of our airpower his primary objective, that the security of air bases will be most vital and most in danger.

—Air Marshall Sir Arthur S. Barratt, RAF
*Report of the Committee on the Future
of the RAF Regiment*

Over the last 90 years, airpower has truly revolutionized warfare. Aircraft offered commanders a glimpse beyond No-Man’s Land during the First World War and promised a war-weary Great Britain a way to efficiently control the Middle East from the skies during the interwar period. High-altitude strategic bombing, large-scale airborne parachute assaults, the “few” who defended Britain in their darkest hour, and flying the “hump” in Central Asia during the Sec-

ond World War all evoke images of airpower's golden age. The fledgling USAF was essential in holding the Pusan perimeter, blunting North Korean ground assaults, and counterattacking northward into "Mig Alley" during the Korean War. Similarly, airpower provided unprecedented battlefield mobility, reconnaissance, close air support, and tactical airlift and represented America's best option to strike north of the 17th parallel in its war in Vietnam. Of course, a comparable story was played out by the Soviet air force in its decade-long struggle against the mujahidin in Afghanistan during the 1980s.

Increased technology (notably stealth and precision-guided munitions) during Operation Desert Storm validated the high-tech approach to airpower with an "American way of war" that was replayed over Kosovo. The opening salvos of Operation Enduring Freedom in Afghanistan and the "shock and awe" campaign of Operation Iraqi Freedom seemed to be an encore performance of airpower's role during the initial stages of combat. Over the last 90 years airpower has not only proven itself essential to warfare, the level of importance has also appeared to increase. Even in ground-centric counterinsurgencies, remotely piloted aircraft, close air support, tactical mobility, casualty evacuation, surveillance, and logistical lifelines offered by strategic airlift (especially in landlocked isolated regions of the world) should leave no doubt about airpower's criticality.

While commanders have increasingly understood the importance and asymmetric advantages that airpower delivers, enemy forces, as seen through historical attacks on airfields, also realize the importance of airpower. In many cases, enemy forces have exploited their asymmetric advantage by attacking airpower when it is highly vulnerable—on the ground.

Historical analysis seems to indicate an "attack pendulum," where strikes against airfields during World War II and Korea followed a penetrating/close-in attack model. During the Vietnam War, the preferred methodology shifted to standoff mortar and rocket attacks, as the Vietcong adapted to hardened perimeters and exploited the void in the area surrounding USAF airfields. The Soviet experience in Afghanistan witnessed similar base attacks with the added complexity of MANPADS focused on shooting down aircraft, particularly helicopters. The era of the "peace dividend" and humanitarian relief operations witnessed in Somalia, the Balkans, and Rwanda was not only characterized by threats of both penetrating and standoff attacks but also had the added dimension of being situated in environments ex-

periencing total governmental collapse and complete social chaos. While the preferred enemy attack methodology in both Iraq and Afghanistan has been mortar and rocket fire, dozens of “green-on-blue” insider attacks and the ground assaults against bases in Bagram and Bastion seem to indicate the pendulum slightly swinging back toward penetrating attacks.

The case studies highlighted in this chapter demonstrate the complex nature of operating in joint environments, the difficulty of opening and simultaneously defending an expeditionary airfield, and the decisions to address both standoff and penetrating threats. The theme for these studies as well as the historical analysis is the same: ABD missions are difficult, and this air-centric mission requires a highly trained and specialized defense force to ensure success.

Notes

1. Louis A. Arana-Barradas, “Bashur or Bust: Airmen Overcome Hardships to Open Airfield in Northern Iraq,” *Airman* 47, no. 7 (July 2003): 28–35.
2. USAF History Support Office, “More Data from Desert Storm,” *Air Force Magazine* 89, no. 1 (January 1996), 66.
3. US House, *Statement of Gen T. Michael Moseley, USAF Vice Chief of Staff before the House Armed Services Committee Subcommittee on Readiness*. 108th Cong., 1st sess., 21 October 2003.
4. Joint Publication (JP) 3-10.1, *Joint Tactics, Techniques, and Procedures for Base Defense*, 23 July 1996.
5. Geoffrey Parker, *The Cambridge Illustrated History of Warfare: The Triumph of the West* (New York: Cambridge University Press, 1995), 266.
6. Roger P. Fox, *Air Base Defense in the Republic of Vietnam: 1961–1973* (Washington, DC: Office of Air Force History, 1979), 1.
7. Lawrence R. Lane and Albert F. Riggle, “Airfield Defense for Global Reach/Global Power” (paper, US Army War College, Carlisle Barracks, PA, 1993), 3.
8. Kingsley M. Oliver, *Through Adversity: The History of the Royal Air Force* (Rushden, UK: Forces & Corporate Publishing, 1997), 4–9.
9. Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (New York: Coward-McCann, Inc., 1921), 53–54.
10. Army Pamphlet 20-271, *The Northern Theater of Operations: 1940–1945*, 15 December 1959, 52–60.
11. J. F. C. Fuller, *The Second World War, 1939–45: A Strategic and Tactical History* (New York: Duell, Sloan, and Pearce, 1948), 67.
12. I. S. O. Playfair, *The Mediterranean and Middle East*, vol. 2, *The Germans Come to the Help of Their Ally* (London: Her Majesty’s Stationery Office, 1956), 124.
13. Alan J. Vick, *Snakes in the Eagle’s Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND Corporation, 1995), 22–23.

14. Winston S. Churchill, *The Second World War*, vol. 3, *The Grand Alliance* (Boston: Houghton Mifflin, 1985), 693.
15. Vick, *Snakes in the Eagle's Nest*, 34.
16. Oliver, *Through Adversity*, 42–43.
17. *Ibid.*, 55.
18. *Ibid.*, 158–61.
19. Fox, *Air Base Defense in the Republic of Vietnam*, 3–4.
20. Phillip S. Meilinger, *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell AFB, AL: Air University Press, 1997), 254.
21. Vick, *Snakes in the Eagle's Nest*, 125–26.
22. Fox, *Air Base Defense in the Republic of Vietnam*, 4–5.
23. Richard A. Coleman, *USAF Air Bases: No Safe Sanctuary* (paper, US Army War College, Carlisle Barracks, PA, 11 April 1990), 6–7.
24. Vick, *Snakes in the Eagle's Nest*, 127.
25. Raymond E. Bell, “To Protect an Air Base,” *Airpower Journal* 3, no. 3 (Fall 1989): 3.
26. Coleman, “USAF Air Bases: No Safe Sanctuary,” 7.
27. Carl Berger, *The United States Air Force in Southeast Asia: 1961–1973*, revised ed. (Washington, DC: GPO, 1984), 13–15.
28. *Ibid.*, 257.
29. Fox, *Air Base Defense in the Republic of Vietnam*, 14.
30. Thirteenth Air Force, Staff Assistance Visit, Security and Base Defense, memorandum, HQ PACAF, Honolulu, HI: Director, Law Enforcement and Security, 21 March 1962, 1.
31. Fox, *Air Base Defense in the Republic of Vietnam*, 13–16.
32. John Schlight, *The United States Air Force in Southeast Asia: The War in South Vietnam: The Years of the Offensive, 1965–1968* (Washington, DC: Office of USAF History, 1988), 16.
33. Berger, *The United States Air Force in Southeast Asia*, 262–64.
34. Fox, *Air Base Defense in the Republic of Vietnam*, 19.
35. *Ibid.*, 20.
36. *Ibid.*, 20–21.
37. *Ibid.*, 23.
38. Vick, *Snakes in the Eagle's Nest*, 128.
39. Fox, *Air Base Defense in the Republic of Vietnam*, 82.
40. Lt Col Kenton Miller, *3rd SPS Ground Defense Lessons Learned* (after-action report, Bien Hoa AB, South Vietnam, 1968), 6.
41. John Galinac (former member, 37th Security Police Squadron, Phu Cat AB, Republic of Vietnam), internet interview by author, September 1999.
42. Carl A. Bender (former operations officer, 377th SPS, Tan Son Nhut AB, Republic of Vietnam), interview by author, 10 May 1998.
43. Fox, *Air Base Defense in the Republic of Vietnam*, 110–11.
44. *Ibid.*, 159–65.
45. Lawrence R. Lane (former Defense Force commander, Operation Urgent Fury, Salinas Airfield, Grenada), phone interview by author, 9 March 2004.
46. Coleman, “USAF Air Bases: No Safe Sanctuary,” 19–22.

47. Wayne Purser, *Air Base Ground Defense: An Historical Perspective and Vision for the 1990s* (Maxwell AFB, AL: Air War College, 1989), 33.
48. Bell, "To Protect an Air Base," 6.
49. John H. Mumma and Jeremiah C. Riordan, *Air Base Ground Defense: Key Issues for the 1990s* (Maxwell AFB, AL: Air War College, 1987), 10.
50. Coleman, "USAF Air Bases: No Safe Sanctuary," 22.
51. Richard F. Ballard, *US Power Projection Capability and Rear-Area Security* (Arlington, VA: Institute of Land Warfare, 1996), 7–8.
52. Lester W. Grau and Ali Ahmad Jalali, *The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War* (Quantico, VA: US Marine Corps Studies and Analysis Division, 2001), 126.
53. *Ibid.*, 127–28.
54. *Ibid.*, 107–8.
55. *Ibid.*, 111.
56. Ballard, *US Power Projection Capability and Rear-Area Security*, 6–7.
57. Eliot A. Cohen, *Gulf War Air Power Survey*, vol. 3, *Logistics and Support* (Washington, DC: GPO, 1993), 31–38.
58. *Ibid.*, 43.
59. *Ibid.*, 48–51.
60. Herbert T. Brown, *Current Air Base Defense Doctrine: Are We Postured to Meet the Expectations of the AEF?* (Maxwell AFB, AL: Air Command and Staff College, 2001), 13.
61. William J. Fenrick, "Annex VI: Study of the Battle and Siege of Sarajevo," in *Final Report of the United Nations Commission of Experts Established Pursuant to Security Council Resolution 780 (1992)*, ed. M. Cherif Bassiouni (New York: United Nations, 1994), Annex VI 1–10.
62. Ballard, *US Power Projection Capability and Rear-Area Security*, 16.
63. United States Army Center of Military History, "US Army in Somalia Chronology of Key Events," 2004, accessed 27 March 2004, <http://www.army.mil/cmh/reference/Somalia/chronology.htm>, 1–5.
64. Paul D. Harris, *Reducing the Force Protection Continuity Gap Created by the Air Expeditionary Force* (Maxwell AFB, AL: Air Command and Staff College, 2001), viii.
65. Brown, *Current Air Base Defense Doctrine*, 13.
66. James J. Chambers, Jr., *Force Protection for the 21st Century Expeditionary Aerospace Forces: Security Forces Need Organic Ground Intelligence* (Maxwell AFB, AL: Air Command and Staff College, 1999), 25–26.
67. Ken Freeman, *Force Protection after Next* (Carlisle Barracks, PA: US Army War College, 1998), 8–10.
68. Clifton Bray, "Case Study on the 86th Contingency Response Group (CRG) Rinas Airport, Tirane, Albania Deployment" (case study, Ramstein AB, Germany: Headquarters, 86th CRG, 2000), 4.
69. *Ibid.*, 4–6.
70. Chris Bargery, "Creation of the 786th Security Forces Squadron (SFS) and Joint Task Force Shining Hope Lessons Learned" (case study, Sembach AB, Germany: 786th SFS, 1999), 2.
71. Chris Bargery, phone interview by author, Ft. Leavenworth, KS, US Army Command and General Staff College, 10 February 2004.

72. Bargery, "Creation of the 786th SFS," 3.
73. *Ibid.*, 5.
74. Bargery interview.
75. *Ibid.*
76. Bray, "Case Study on the 86th Contingency Response Group (CRG) Rinas Airport, Tirane, Albania Deployment," 9.
77. *Ibid.*, 13.
78. Bargery interview.
79. Bargery, "Creation of the 786th SFS," 4–11.
80. John P. Jumper, "Rapidly Deploying Aerospace Power: Lessons from Allied Force," *Aerospace Power Journal* 13, no. 4 (Winter 1999): 10.
81. Bray, "Case Study on the 86th Contingency Response Group (CRG) Rinas Airport, Tirane, Albania Deployment," 51–53.
82. Bargery, "Creation of the 786th SFS," 11.
83. Kevin Dougherty, "Bare-Bones Airfield Supports 173rd," *Stars and Stripes*, 9 April 2003, accessed 11 January 2013, <http://www.stripes.com/news/bare-bones-bashur-airfield-supports-173rd-1.4146>.
84. Williamson Murray and Robert H. Scales, *The Iraq War: A Military History* (Cambridge, MA: Harvard University Press, 2003), 193.
85. Kevin Dougherty, "Security Forces Take on First Patrols of Key Base at Bashur," *Stars and Stripes*, 10 April 2003, accessed 11 January 2013, <http://www.stripes.com/news/security-forces-take-on-first-patrols-of-key-base-at-bashur-1.4198/comments-7.5327>.
86. Scott Elliott, "Success in Iraq Result of Lessons Learned," *Air Force Print News*, 1 May 2003, accessed 11 January 2013, <http://www.au.af.mil/au/awc/awcgate/af/123004768.htm>.
87. Jason Beers, "786 SFS Lessons Learned Operation Iraqi Freedom," (briefing, 786th SFS/S-3, Sembach AB, Germany, 2003), 3.
88. *Ibid.*, 5.
89. *Ibid.*, 4–5.
90. Associated Press, "U.S. Military Opens Huge Airfield, Logistics Hub," *Fox News Press*, 28 March 2003, accessed 11 March 2013, <http://www.foxnews.com/story/0,2933,82411,00.html>.
91. Kevin Walker (former operations officer, 822nd Security Forces Squadron, Moody AFB, GA), internet interview by author, 29 January 2004.
92. Maj Scott R. Farrar (commander, 822nd Security Forces Squadron, Moody AFB, GA), internet interview by author, 2 February 2004.
93. *Ibid.*
94. Walker, interview.
95. Farrar, interview.
96. Walker, interview.
97. Farrar, interview.
98. *Ibid.*
99. Col Erik K. Rundquist (commander, 455th Expeditionary Mission Support Group and Task Force 1-455), personal observations from June 2011 to June 2012, Bagram Airfield, Afghanistan.

100. Sean D. Naylor, "Nine Troops Injured in Attack on Bagram," *Army Times*, 19 May 2010, accessed 11 January 2013, http://www.armytimes.com/news/2010/05/army_bagram_051919w/.

101. Ibid.

102. Richard Williams, "'Defenders' Neutralize Threat to Bagram Airfield," *Bagram Airfield*, 23 May 2010, accessed 11 January 2013, <http://www.bagram.afcent.af.mil/news/story.asp?id=123205914>.

103. John Wright, "Bagram's Airmen 'Defend the Base,'" *Bagram Airfield*, 31 October 2011, accessed 11 January 2013, <http://www.bagram.afcent.af.mil/news/story.asp?id=123277904>.

104. Ibid.

105. Alyssa J. Rubin, "Audacious Raid on NATO Base Shows Taliban Reach," *New York Times*, 16 September 2012, accessed 11 January 2013, http://www.nytimes.com/2012/09/17/world/asia/green-on-blue-attacks-in-afghanistan-continue.html?pagewanted=all&_r=0.

106. Ibid.

107. Chris Willis, "Bagram Stands-Up 455th ESFG," *Bagram Airfield*, 16 November 2012, accessed 11 January 2013, <http://www.bagram.afcent.af.mil/news/story.asp?id=123326629>.

Chapter 2

A Canadian Perspective on Air Base Ground Defense Ad Hoc Is Not Good Enough

Paul M. Thobo-Carlson

Security no longer ends at the base perimeter. We must assume responsibility for a much larger tactical perimeter that will keep the threat away from our people and equipment.

—Gen Robert R. Fogleman, USAF Chief of Staff

Prologue (Africa, In the Near Future)

As Corporal Brown stepped under the wing of the CC-177 Globemaster III airlifter, he marveled that such a large aircraft could land on a runway as short as the one he found himself patrolling in eastern Africa. Checking his watch, he reflected on the events that brought him here. Public outcry at the genocide happening nearby put enormous pressure on the Canadian government to act. Although the international intervention force had not begun arriving in strength, Canada had agreed to airlift some critical relief supplies to one of the areas hardest hit by the civil war. Corporal Brown and his partner, both military policemen, were responsible for guarding the two CC-177s until the remaining members of the crew arrived for an early morning departure. A local security force was responsible for patrolling the airfield perimeter, so the Canadians' duty was limited to the close-in protection of the Canadian Forces (CF) aircraft. Scanning the opposite side of the ramp area, he spotted the only other airworthy aircraft in sight, a Belgian C-130 transport.

As he adjusted the C8A3 carbine on his shoulder, Corporal Brown heard several sounds in the distance—like the faint popping of cham-

I use Canadian nomenclatures for aircraft that may be more familiar to readers in American equivalents (e.g., the CC-177 is the same as the C-17). For the reader's benefit, equivalents will be given in brief footnotes when appropriate.

pagne corks. The first mortar round impacted 50 meters from the right wingtip, instantly knocking Corporal Brown to the ground. His mind began to race. The premission briefing had not indicated the probability of insurgents with standoff weapons anywhere near the airfield; the primary threat to this humanitarian airlift mission was supposed to be from thieves and looters. The second round ended Corporal Brown's thoughts and his life. Twelve more mortar rounds landed in the next five minutes. As the sun started to rise on the African plain, half of Canada's strategic airlift fleet lay twisted and burning on the broken tarmac.

Introduction

For too long, Canada's deployed air force personnel, assets, and airfields have been placed at unnecessary risk from both conventional military threats and contemporary asymmetric threats because of the CF's ad hoc approach to air base ground defense. Inadequate organic resources, combined with a belief that another service will be there to do the "heavy lifting," have conspired to produce an air force that is incapable of adequately defending itself during expeditionary operations. The CF air component is unable to achieve many NATO benchmarks in the area of force protection (FP) and cannot contribute effectively to the collective defense of alliance or coalition deployed operating bases.

Historically lacking any clear doctrine and unable to foster a more proactive and coherent approach, Canada's air force has over time adopted a number of contrasting and short-lived means to secure and defend its air bases. Occasionally relying on host nation (HN) or allied air forces, it has most often drifted between two competing poles: an organic military police (MP) model and an army combat arms model. Both approaches have serious shortcomings. CF MP personnel are currently undermanned, ill equipped, and insufficiently trained to properly carry out this important mission. MPs could be trained to the required level but only to the detriment of their specialist law enforcement skills. Several attempts have been made to increase the number of MPs available for this mission, but all have failed. On the other hand, combat arms units are in very short supply. As a result of the army's high operational tempo, they are rarely available to train regularly with air units, and when made avail-

able, they are not dedicated for long enough to fully grasp the issues unique to air base operations. Furthermore, combat arms units are subject to mission reallocation based primarily on the priorities of the army rather than those of the air force. Tellingly, the army has resisted making air base defense (ABD) a standing mission and incorporating it into land force doctrine.

Canada is clearly out of step with most of its closest allies regarding air base ground defense. The United Kingdom, France, Germany, Australia, the Netherlands, Italy, and the United States have all created dedicated air force security and defense occupations and associated units in order to provide robust organic FP during expeditionary operations. Most of these occupations also act as an air force readiness cadre, responsible for chemical, biological, radiological, and nuclear (CBRN) defense; small arms; and combat skills training.

This chapter postulates that an ad hoc approach to air base ground defense is no longer good enough. Instead, Canada's air force should create a dedicated ground defense occupation like many of our closest allies have done. This occupation should be organized, trained, and equipped as a specialized light infantry force, fully inculcated in air force operations and capable of operating both inside and outside the base perimeter against contemporary conventional and asymmetric threats.

Future Security Challenges

In order to properly evaluate the adequacy of Canada's air base ground defense measures, it is first essential to understand the operating environment that the air force will function in for the foreseeable future. Although it is impossible to forecast with absolute certainty what the future will hold, this chapter begins by identifying some broad trends that are likely to influence the conduct of CF aerospace operations in the near to mid terms. Finally, specific ground threats to air bases and air assets must be examined from the point of view of targeting objectives, tactics, and future trends.

Interstate versus Intrastate Conflict

Interstate conflict has been on the decline since the late 1980s. While there are still a number of hotly disputed areas with the poten-

tial to trigger high-tempo, conventional military engagements (e.g., the Korean Peninsula, the Kashmir region, and the Straits of Taiwan), intrastate conflict is more likely to predominate for the foreseeable future.¹ Notwithstanding, the US National Intelligence Council predicts that when interstate wars do occur, they “will grow in lethality due to the availability of more destructive technologies.”² Rapid population growth, changing demographics, urbanization, disease, and resource shortages will all increase the strain on fragile or failing states and raise the possibility of civil war and humanitarian crisis—particularly in regions such as the Middle East, Africa, and South Asia.³ Given the CF’s position as a key instrument of foreign policy, the Canadian government will almost certainly keep contributing military forces to international peace and stability operations and other “coalitions of the willing.” Air forces will continue to play an important role throughout the spectrum of conflict—from airlift and utility helicopter support for traditional peacekeeping and humanitarian missions in lower-threat environments to tactical helicopter and close air support missions for counterinsurgency (COIN) and peace enforcement operations in medium- to high-threat environments.

Nonstate actors such as criminal organizations, terrorists, and armed irregular groups will continue to gain in prominence and pose an ever-increasing security challenge to states, and unstable countries will continue to act as breeding grounds and safe havens for such organizations. Combative nonstate actors, who tend to be less predictable than “rational” state actors, are likely to seek increasingly sophisticated and lethal weapons and supporting technologies to accomplish their various aims. Islamist terrorist groups will remain of particular concern to deployed CF elements due to their propensity for suicide and improvised explosive device (IED) tactics, as well as their proven desire and ability to mount catastrophic attacks against Western interests. Canada’s former chief of defense staff, Gen R. J. Hillier, clearly recognizes the impact of these various nonstate groups on contemporary CF operations: “We now face a different threat, which I have euphemistically called the ‘snakes’—nonstate actors who respect no boundaries, obey no rules, and are impossible to deter. Western militaries have reacted to this threat, but often in an ad hoc manner. In today and tomorrow’s security environment Canadians must act not only for our interests, but also for our values.”⁴

Asymmetry

The overwhelming technical superiority of Western armed forces, particularly when operating alongside the United States, will make it very difficult, if not foolish, for adversaries to oppose international coalitions and intervention forces in a conventional military manner. Therefore, adversarial states and combative nonstate actors will almost certainly employ asymmetric tactics against allied expeditionary forces in order to blunt their technological advantage and ability to apply concentrating force. Conventional military forces are particularly vulnerable to such attack due to their inherent complexity, cumbersome nature, and heavy reliance on logistics and fixed “lines of communication.” Groups employing asymmetry will likely use hit-and-run tactics and operate from urban terrain in order to maximize the physical and psychological impact of an attack and hinder the military response.⁵ Rogue states and well-connected terrorist groups may also choose to use CBRN weapons to gain a definitive asymmetric advantage or to cultivate fear and confusion among the target population.

Volatility, Uncertainty, Complexity, and Ambiguity

Above all, a high level of volatility, uncertainty, complexity, and ambiguity—what the US National Defense University calls VUCA—will characterize the future security environment.⁶ Essentially, nations and nonstate organizations will continue to seek increased wealth and power, and when combined with rapid advances in technology and communications capabilities, this competition will produce imbalance and volatility. Uncertainty will prevail either when the intentions of an opponent are unknown or when assumptions about the opponent are incomplete, incorrect, or contradictory. The interdependence of components in the future security environment will produce high levels of complexity where seemingly simple decisions lead to unexpected second- and third-order effects.⁷ A particularly malignant form of this complexity is what Rittel and Webber call the “wicked problem”—where the apparent solution actually reveals or produces a more complex problem or set of problems.⁸ Finally, ambiguity will result whenever the meaning of events and the situation is unclear or could be interpreted in more than one way. This ambiguity will be further accentuated in those situations that cross cultural and ideological lines.⁹

The Future Operating Environment

There is a growing perception in Canada that security at home is inseparable from security abroad and that expeditionary operations are a critical component of our homeland defense. Related to this is an expectation that the CF will become increasingly engaged in “full spectrum operations” involving concurrent combat, stability, and humanitarian assistance missions.¹⁰ With this in mind, the CF began a wide-ranging transformation to ensure it remains “strategically relevant, operationally responsive, and tactically decisive” in the face of a dynamic and uncertain global security environment.¹¹ In 2004, the chief of the Air Staff (CAS) published *Strategic Vectors* to outline the CF air component’s own vision of transformation from “a primarily static, platform-focussed Air Force” into “an expeditionary, network-enabled results-focussed Aerospace platform for the 21st Century.”¹² The new Canadian Forces Aerospace Doctrine series of publications provides an updated framework that envisions a transformed air force that is expeditionary, combat-effective, and seamlessly interoperable with our allies.¹³

The air force has several ongoing initiatives to help expand its expeditionary capacity. The Air Force Support Capability project initially resulted in the creation of six mission support squadrons to provide integral and close support for air force deployments in the fields of engineering, logistics, human resources, finance, and communications. Building on this venture, the CAS chartered the Air Force Expeditionary Capability (AFEC) project to design and generate the remaining elements required to field and sustain “task-tailored, cohesive, rapidly deployable [air] expeditionary forces.”¹⁴ The recently published AFEC Concept of Operations (CONOP) is based around the air expeditionary wing (AEW) construct, consisting of a scalable command element, mission support element, operational support element, and one or more air detachments. The AFEC CONOP seeks to further instill a “fighting spirit” in Canada’s air force by providing discrete units of agile, task-tailored, scalable, readily deployable, expeditionary aerospace power. The AFEC seeks to enable the air force to support two concurrent lines of operation in a low to medium ground-threat environment: one indefinitely sustainable deployed AEW and a second surge AEW sustainable for a single rotation only.¹⁵

A breakdown of the broad capability areas, along with the platform-specific air detachments and support elements that Canada’s air force

is most likely to deploy within the next 10–15 years is provided in table 2.1. The platforms shown in italics, although not yet fielded, are integral to emerging air force plans. With the exception of CH-124 Sea King and CH-148 Cyclone helicopters that operate from navy ships, all of these platforms and elements will potentially require ground defense forces to properly protect them at forward operating bases during deployments.

Table 2.1. Deployable air force platforms and support elements

| Capability Area | Deployable Platforms (Air Detachments) and Support Elements |
|---|--|
| Airlift / Air-to-Air Refueling | CC-130H / CC-130J Hercules |
| | CC-177 Globemaster III |
| | CC-150 Polaris (Transport and Air-to-Air Refueling Roles) |
| | CC-144 Challenger |
| Fighter | CF-188 Hornet / <i>New Generation Fighter Aircraft</i> |
| Tactical Aviation | CH-146 Griffon / <i>Battlefield Reconnaissance Utility Helicopter</i> |
| | CH-147F Chinook |
| Maritime Helicopter | CH-124 Sea King / <i>CH-148 Cyclone</i> |
| Long-Range Patrol | CP-140 Aurora / <i>Canadian Multimission Aircraft</i> |
| Uninhabited Surveillance and Target Acquisition | <i>Medium-Altitude Long-Endurance Unmanned Aerial Remotely Piloted Vehicle</i> |
| Air Expeditionary Wing | Mission Support Element |
| | Operational Support Element |
| | Command Element |

Derived from *Air Force Strategy* (Draft v1.9.1, March 2007), 46–56; *CAS Planning Guidance 2007*, A2–6; *Air Force Expeditionary Capability Concept of Operations*, Revision 1, February 2012, 9.

Threats to Air Bases

Aerospace platforms are inherently fragile and heavily dependent on fixed bases for technical and logistical support—limiting characteristics that are recognized in Canada’s new capstone aerospace doctrine.¹⁶ Early airpower theorist Gen Giulio Douhet was perhaps the

first to recognize the inherent vulnerability of air bases and parked aircraft when he advocated striking the enemy air force's "nests and eggs on the ground" whenever possible, rather than attacking its "birds in the air."¹⁷ The susceptibility of air bases to attack, combined with the progressively higher replacement cost of modern military aircraft and the ever-shrinking fleet size of Western air forces, conspire to produce what Royal Australian Air Force officer and author Sal Sidoti calls "Air Power's Achilles Heel."¹⁸ The asymmetric threat agents that the CF will encounter on future operations will most likely have the capability neither to attack our bases from the air nor to engage our aircraft in air-to-air combat.¹⁹ Instead, the main threats to our deployed air bases, personnel, and aerospace platforms will come from the ground. Ill-defended air bases are very lucrative targets, particularly since the destruction of high-value/low-density aircraft types such as the CC-177 Globemaster III airlifter can provide an adversary group with strategic-level impact at very little cost and risk to itself.

In a RAND study commissioned by the US Air Force (USAF), David Shlapak and Alan Vick determined that air bases will remain targets of choice and that opponents will continue to attack air bases for three main reasons. First, they will attempt to destroy high-value assets critical to air force operations. This is particularly concerning since even limited aircraft attrition can cause significant stress on operational plans in an expeditionary environment. Second, the enemy will attempt to "temporarily suppress sortie generation at a critical moment in a conflict or crisis." This could allow short-term freedom of movement for an adversary group in support of its own tactical or operational plans. Third, they will strive to "create a 'strategic event'" that would reduce public or government support for ongoing military operations—"an incident as decisive politically as loss of a major battle is militarily."²⁰

In his treatise on air base operability and survivability, Sidoti identifies a number of other supporting reasons why adversaries might choose to target air bases. The first reason is to cause a distraction. Nuisance attacks may be launched to tie up local ground defense reserves and regional mobile reaction forces in order to reduce their effectiveness over time, in preparation for follow-on operations or simply to cause a diversion while a main assault is launched else-

where. The second reason is to make a political statement. Terrorists in particular may target airfields for this reason, even if their attacks are not designed or successful in causing serious damage or significantly degrading operations. The third reason is to infiltrate on or near an airfield to gather intelligence. Enemy reconnaissance or surveillance operations around air bases could remain covert, or limited probing attacks may be mounted to determine the defenders' strengths and weaknesses. The fourth reason is to conduct forward observation and target designation. Small parties may be employed around air bases to observe and mark targets and adjust the fall of standoff weapons (e.g., mortars, artillery, and rockets) based some distance away. In conventional conflicts, enemy special forces may conduct observation and target marking for aerial weapons delivery. The fifth reason is to capture the airfield. While unlikely in future asymmetric conflicts, conventional enemy ground forces could attempt to capture an airfield either to deny its use to friendly forces or to utilize the airfield for its own operations. Traditionally, airmobile and airborne forces have been used in this role. A final reason is to destroy supporting or collocated facilities. Supporting facilities at an air base may be more mission critical than the aircraft themselves (e.g., headquarters, maintenance facilities, and communications nodes). The destruction or disruption of such facilities may have a significant impact on friendly operations over broad geographical or functional areas.²¹

In a RAND companion study for the USAF, Alan Vick analyzed ground attacks on air bases from 1940 to 1992 and determined that 60 percent sought to destroy aircraft (384 incidents), while 27 percent sought to harass the defenders (173 incidents). Only a relatively small percentage of attacks sought to capture airfields or deny their use, and most of these took place during the Second World War.²² A breakdown of Vick's airfield-attack-objective findings is provided in figure 2.1.

Vick also analyzed the tactics used during ground attacks and determined that three-quarters relied on the use of standoff weapons. Fewer than one-quarter of these 645 attacks involved penetrating the base perimeter, and very a small percentage combined both tactics.²³ A breakdown of Vick's findings on airfield attack tactics is provided in figure 2.2.

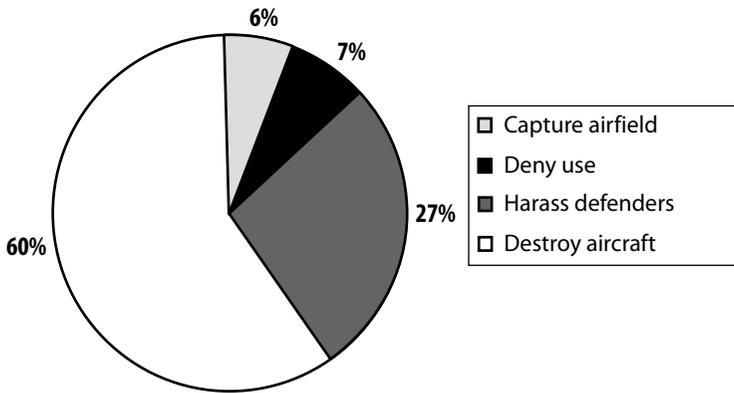


Figure 2.1. Airfield attack objectives, 1940–1992. (Reprinted from Alan Vick, *Snakes in the Eagle’s Nest: A History of Ground Attacks on Air Bases* [Santa Monica, CA: RAND Corporation, 1995], 10.)

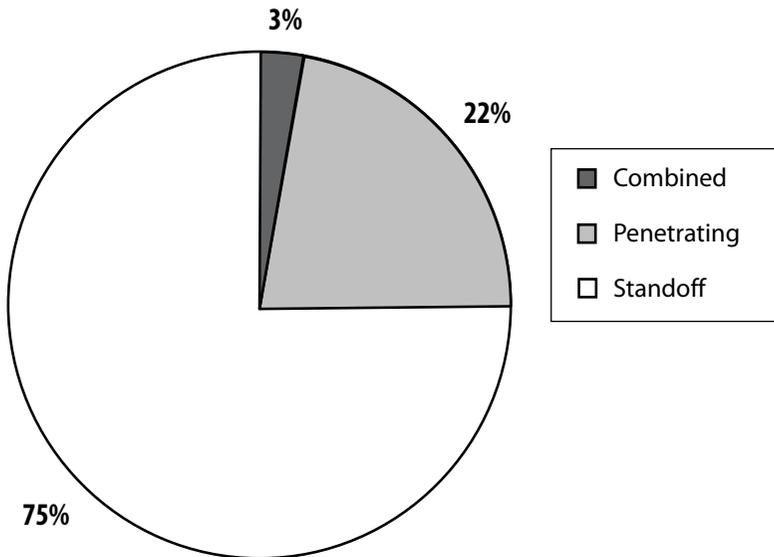


Figure 2.2. Air base attack tactics, 1940–1992. (Reprinted from Alan Vick, *Snakes in the Eagle’s Nest: A History of Ground Attacks on Air Bases* [Santa Monica, CA: RAND Corporation, 1995], 107.)

Compared to the 645 air base attacks that Vick documented in the 52-year period between 1940 and 1992, the frequency of attacks has skyrocketed since the beginning of Operations Enduring Freedom (Afghanistan, 2001) and Iraqi Freedom (2003). Most of the recent

attacks against US and NATO air bases have employed standoff tactics. For example, in the first three and one-half years of Operation Iraqi Freedom, over 1,500 standoff attacks were launched against air bases, and a number of coalition aircraft were hit on arrival and departure by small arms and surface-to-air missiles.²⁴ Similarly, the US-run NATO air base in Kandahar has frequently been targeted by Taliban rocket attacks launched from over eight kilometers away. Until May 2006, the air base was being attacked by rockets two to three times each night—a situation that improved dramatically once the Royal Air Force Regiment began actively patrolling “outside the wire.”²⁵ While there are no publicly available studies that comprehensively analyze the objectives and levels of success of these recent attacks, anecdotal evidence suggests that most of them were aimed at cumulatively creating the “strategic event” discussed by Shlapak and Vick—in this case, the erosion of military morale and the domestic political will of Western troop-contributing nations in order to force a withdrawal.

Historically, the weapons of choice for threatening air bases and adjacent flying operations have been mortars, rocket-propelled grenades (RPG), rocket artillery, satchel charges and IEDs, machine guns, long-range rifles, and shoulder-fired surface-to-air missiles. Airmobile or airborne troops, compact special forces teams, small guerrilla groups, and terrorist cells have carried out most air base attacks. Only rarely have mechanized forces or units larger than company size attacked air bases, and most such attacks were carried out by Allied forces during the Second World War and by US forces during recent interventions.²⁶ The modus operandi for attacking air bases is unlikely to change significantly in the future, although increasingly sophisticated standoff weapons may be employed to enhance the asymmetric advantage.

The tendency of some air forces, including Canada’s, has been to concentrate all airfield security resources “inside the wire” to address the traditional threats of espionage, sabotage, subversion, and criminality. However, the standoff threat possesses the greatest challenge to ABD in the contemporary security environment. Although base-bound security forces can provide some protection against penetration attacks when properly trained, armed, and equipped, today they are almost ineffective in countering the standoff attacks that have been and will probably continue to be the preferred method of targeting airfields. A depiction of some of the widely proliferated standoff

weapons favored for use in air base attacks is provided in table 2.2. This is by no means an exhaustive list but provides a sample of the types and capability of weapons currently in the hands of nonstate groups.

Table 2.2. Typical standoff weapons

| <i>Weapon (Source)</i> | <i>Weight/ Portability</i> | <i>Effective Range/Altitude</i> | <i>Terminal Effect</i> |
|---|---|-------------------------------------|--|
| .50 cal/12.7 mm sniper rifles (Various countries) | Approx. 13 kg | 2,000 m | Armor piercing (AP) |
| 12.7 mm NSV heavy machine gun (Russia, Bulgaria, Former Yugoslavia) | 50.2 kg–Gun & tripod 7.7 kg–50-round ammo belt | 2,000 m direct 3,500 m indirect | AP, AP incendiary |
| SA-18 surface-to-air missile (Russia) | 18 kg–Man-portable shoulder-fired (MANPADS) | 5,200 m/ 3,500 m | 1.3 kg. high explosive (HE) warhead |
| 82 mm mortar (Russia, China, Former Yugoslavia) | 50 kg–Mortar & baseplate 3.1 kg–Mortar bomb | 6,050 m | HE, fragmentation, smoke, illumination |
| 122 mm single rocket launcher (Russia, China, Romania) | 63.2 kg–Launcher & tripod 46.3 kg–Rocket | 11,400 m | HE, fragmentation, chemical |

Compiled from IHS Jane's, "LR-2A 12.7 mm Self-Loading Anti-Material Rifle," Jane's Infantry Weapons, 14 May 2013; IHS Jane's, "IST-12,7 12.7 mm Anti-Material Rifle," Jane's Infantry Weapons, 18 October 2012; IHS Jane's, "Steyr HS 0.50 Anti-Material Rifle," Jane's Infantry Weapons, 18 October 2012; IHS Jane's, "NSV 12.7 mm Heavy Machine Gun," Jane's Infantry Weapons, 29 January 2013; IHS Jane's, "Igla," Land Warfare Platforms: Artillery & Air Defence, 15 April 2013; IHS Jane's, "Type W87 81 mm and Type W84 82 mm Mortars," Jane's Infantry Weapons, 8 May 2013; IHS Jane's, "M-37 82 mm Mortar," Jane's Infantry Weapons, 12 September 2013; IHS Jane's, "M69A 82 mm Light Mortar," Jane's Infantry Weapons, 13 September 2013; IHS Jane's, "Aerostar 122 mm (Single-Round) Rocket Launcher," Jane's Armour and Artillery, 23 July 2013; and IHS Jane's, "122 mm BM-21 Grad-Series Rockets," Jane's Ammunition Handbook, 25 July 2012.

The abundance of man-portable air defense systems (MANPADS), capable of bringing down every type of aircraft in the CF inventory, is particularly worrisome since these systems are very difficult to detect and defeat. According to the US Congressional Research Ser-

vice (CRS), shoulder-fired missiles caused 90 percent of all world-wide combat aircraft losses between 1984 and 2001. Infrared-guided MANPADS were a significant source of air combat losses during Operation Desert Storm (Gulf War, 1991), accounting for 12 of 29 coalition aircraft losses.²⁷ In 2007 the CRS estimated that between 350,000 and 500,000 MANPADS missiles were held in international military arsenals and up to 150,000 more missiles were in the hands of terrorist and insurgent groups. For example, by December 2002, coalition forces in Afghanistan had captured 5,592 MANPADS from the Taliban and al-Qaeda.²⁸ A depiction of some of the many terrorist and insurgent groups that possess, or have previously possessed, these weapons is provided in table 2.3.

Table 2.3. Nonstate groups with MANPADS, 1996–2001

| <i>Group</i> | <i>Location</i> | <i>MANPADS Type</i> |
|----------------------------------|------------------|--|
| Armed Islamic Group | Algeria | Stinger |
| Kurdistan Workers Party | Turkey | SA-7, Stinger |
| Liberation Tigers of Tamil Eelam | Sri Lanka | Stinger, HN-5 (possibly also SA-7, SA-14) |
| al-Qaeda/Taliban | Afghanistan | SA-series, Stinger, Blowpipe |
| Chechen rebels | Chechnya, Russia | SA-7, Stinger (possibly also Blowpipe) |
| Hezbollah | Lebanon | SA-7, QW-1 (possibly also Stinger) |
| National Liberation Army | Macedonia | SA-18 |
| UNITA | Angola | SA-7, SA-14, Stinger (possibly also SA-16) |

Derived from Thomas B. Hunter, “The Proliferation of MANPADS,” *Jane’s Intelligence Review* 13, no. 9 (1 September 2001): 42–5.

To effectively counter the standoff weapon threat, air base defenders must extend their operations well beyond the perimeter fence. Based on a detailed and realistic intelligence assessment of adversary capabilities, defenders must pay particular attention to the “footprint” created by all known and suspected enemy standoff weapons. These footprints are essentially a series of overlapping circles, the radius of each representing the maximum effective range of the weapon type and the center point corresponding to an operationally critical

area. Successful ABD requires that these footprints be dominated through aggressive patrol, surveillance, occupation of vital ground, and weapons effects. Given that aircraft are most vulnerable to MANPADS during takeoff and recovery, particular attention must be paid to the cone-shaped MANPADS footprints extending out from the active runway during launch and recovery periods. The length and width of the cone will vary depending on the type of MANPADS as well as the type and flying profile of the target aircraft. The notional standoff footprints for a base threatened by an adversary group possessing 82 mm mortars and MANPADS is depicted in figure 2.3.

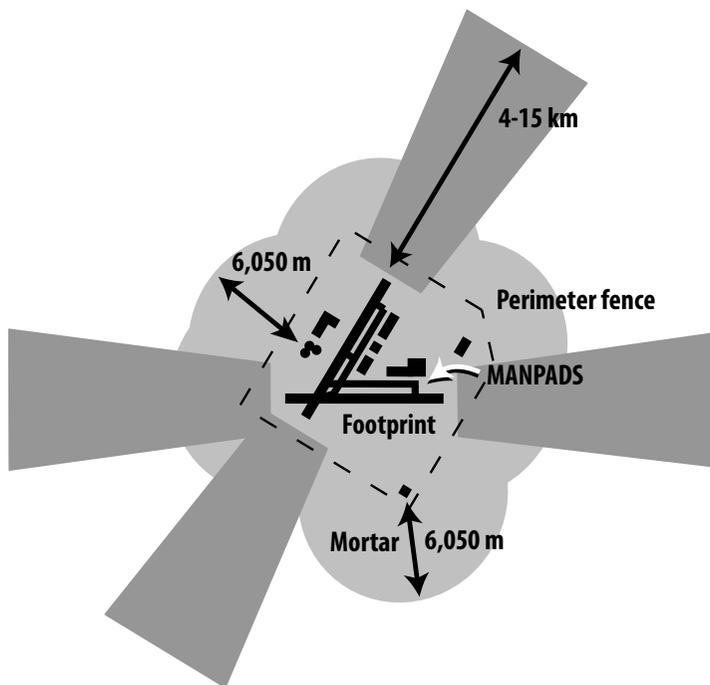


Figure 2.3. Standoff weapon footprints. (Derived from Thomas B. Hunter, "The Proliferation of MANPADS," *Jane's Intelligence Review* 13, no. 9 [September 2001]: 42–5.)

Despite a growing awareness within Canada's air force of the contemporary global security environment and a renewed enthusiasm for expeditionary operations, very little concrete progress has been made in regard to mitigating the CF's considerable vulnerability to the vari-

ous air base ground defense threats detailed above. In fact, FP and “Survive to Operate” (STO) have been singled out by the CAS as high-risk areas for the air force. For example, of the 37 risks to mission success identified in the CAS strategic assessment for fiscal year 2006/2007, FP and STO were ranked fifth and sixth respectively.²⁹ Table 2.4 shows where FP and STO scored in relation to the other 35 risk areas.

Table 2.4. AIRCOM risk severity map for FY 06/07

| | | | | | | |
|--|---------------|----------|-------------|-----------------------|----------------------|-----|
| Impact | Severe | | | | | |
| | Major | | | 6 th (STO) | 5 th (FP) | ... |
| | Moderate | | | ... | ... | ... |
| | Minor | | | ... | ... | ... |
| | Insignificant | ... | | ... | | ... |
| | Rare | Unlikely | Possible | Likely | Almost Certain | |
| Likelihood | | | | | | |
| Risk Level: | | | | | | |
| | Very High | High | Significant | Medium | Low | |
| Note: Ellipsis marks show where other risk areas were listed on the original severity map. | | | | | | |

Department of National Defence, Government of Canada, *Chief of the Air Staff Level 1 Strategic Assessment FY 06/07*, 14 November 2005, 12.

The remarks accompanying this risk assessment provide an indication of the recent state of the air force regarding FP:

The AF is mandated to advance new Force Protection capabilities (i.e. Wing and deployed ops Force Protection, Wing Readiness Training Flights, VIP aircraft security, Chemical, Radiological, Biological and Nuclear protection) but the development of these capabilities is hampered by major deficiencies in personnel resources, inadequate expertise, training, equipment and time. The level of force protection training required for non-linear, non-contiguous, asymmetrical warfare is far beyond what the AF is capable of providing at the present time. As is, air resources, including Tactical Aviation, have little to no ability to operate in a medium to high threat environment in more than a “survive to evacuate” mode. . . . Considering the present capacity, we will need Army assistance to mount any real capability at home or abroad.³⁰

At least for the present, Canada’s air force seems unable to adequately protect itself from the many contemporary asymmetric threats that it faces.

Canada's Ad Hoc Approach to Air Base Ground Defense

Historical studies have demonstrated that when an airbase has been dependant on third parties or other services for primary ground defense problems have occurred.

—Sal Sidoti
Airbase Operability

Canada's air base security and ground defense practices, from the Second World War to present, bear a pattern of short-term improvisation and inconsistency. As the following survey shows, Canada's historically ad hoc approach to ABD has been characterized by a lack of long-term commitment by the air force and the army despite occasional bursts of interest from both camps. The result is that air force personnel and assets have frequently been placed at undue risk. That the Royal Canadian Air Force (RCAF) and CF have escaped any devastating airfield ground attacks—a somewhat unique distinction among Canada's allies—has as much to do with good fortune as with deliberate planning.

The Second World War

The RCAF entered the Second World War without any ground defense or internal security capability, so a number of army reserve units had to be quickly mobilized in September 1939 to guard RCAF coastal air stations and other "vulnerable points."³¹ Over the next two years, as the situation in Europe deteriorated and a growing threat loomed from Japan, units of the Veterans Home Guard and conscripted home defense units were also pressed into service to help protect the RCAF's coastal operating bases from armed enemy attack.

The RCAF "Guards and Discipline Branch" first formed in early 1940 and quickly expanded due to the rapid growth of the British Commonwealth Air Training Plan (BCATP) and rising fears of enemy espionage, sabotage, and subversion. RCAF personnel assumed responsibility for the internal security of most of its and Royal Air Force (RAF) Stations in Canada in August 1940, relieving the Canadian army of this duty. The new division of responsibilities between the RCAF and the Canadian Army Special Force was detailed in RCAF Organization Order No. 3 as follows:

- (a) Air Officers Commanding are to be responsible for the protection of Air Force Establishments or materials from sabotage and for the local small arms A.A. [antiaircraft] defense at such Establishments.
- (b) The Army will be responsible for the protection of the Air Force operational bases against attack by enemy armed forces.³²

Aircrew candidates and other airmen awaiting trades training primarily manned the RCAF's new guard force. These troops were employed under the direction of a smaller number of specialist "security guard" officers and noncommissioned officers (NCO). Predictably, this interim duty was less than popular with the trainees, and by June 1941, a new system replaced these rotating trainees with a smaller number of "general duties (guards)" personnel. By the fall of 1942, there were over 4,000 permanent Security Guards and general duties (guards) personnel employed throughout the RCAF. Armed mainly with rifles, these personnel guarded vital points, manned elevated sentry towers, and conducted mobile patrols within the air base perimeter. However, due to their relatively small numbers, defense plans still required personnel drawn from the remainder of the station establishment to help man machine gun positions and antiaircraft posts in the event of an enemy ground or air attack. Following a successful trial in the fall of 1942, it was decided to amalgamate the functions of the Security Guards with those of the RCAF Service Police, and from May 1943 onward, an expanded Service Police branch assumed all internal security duties.³³

Two critical events eventually prompted the RCAF and army to consider more robust external airfield defenses: German paratroops' capture of British airfields in Crete in June 1941 and the subsequent fallout in the United Kingdom (see the section on the Royal Air Force Regiment) and Japan's entry into the war in December 1941. By April 1942, authorities had determined that Japan might conduct raids along the British Columbia coast with up to two brigades, and it was feared that they might try to seize airfields on Vancouver Island to threaten nearby cities in Canada and the United States. Around the same time, a report was circulating throughout RCAF and army headquarters that provided some new tactical doctrine for aerodrome defense based on the RAF's recent experiences. An appendix to the report articulated the rationale for maintaining strong ground defenses, enduring points that still remain true: to protect friendly

aircraft on the ground, to enable continued flying operations, and to deny an airfield's use to the enemy. This appendix also noted that mobility and flexibility were key attributes for airfield defense forces.³⁴

Rather than create an independent air force ground defense organization like the RAF recently had, the RCAF decided instead to rely on the Canadian army.³⁵ To carry out this increasingly specialized role, the army mobilized 12 aerodrome defense platoons in May 1942, each comprised of one officer and 43 other ranks and equipped with six "universal carriers" mounting two-pounder guns and two carriers mounting three-inch mortars. Five platoons were assigned to RCAF aerodromes in Western Air Command (British Columbia), and seven were assigned to Eastern Air Command aerodromes (Nova Scotia, Newfoundland, and Labrador). Two additional platoons were later added in the west. According to a wartime army headquarters report, the specialized role of these platoons, in conjunction with other army units in the area, "was that of breaking up and destroying any enemy attack before it reached the inner perimeter, manned by RCAF personnel."³⁶

While these platoons were forming, a "director of aerodrome defence" position was established at RCAF Headquarters, and corresponding staff positions were created at Eastern and Western Air Command, all filled with seconded infantry officers.³⁷ These army officers acted as advisors to the RCAF general officers commanding, prepared airfield defense plans, assisted unit officers commanding, inspected airfield defensive works and measures, and conducted related liaison between the RCAF and army. Interestingly, although these officers were to be selected for their experience in aerodrome defense, it appears that this "experience" was limited to a one-week attachment with 11 Group RAF in England, where they were given a crash course in airfield defense operations delivered in part by personnel of the newly formed RAF Regiment.³⁸ While these officers were undoubtedly chosen for their skill and experience as infantry officers, their practical experience in airfield defense and knowledge of air force operations were, at least initially, quite limited.

By December 1942 army authorities recognized that the burden of aerodrome defense was too much for single platoons, so authority was granted to expand each to a company, comprising a headquarters and two platoons—one based on the previous carrier platoon structure and a second mobile platoon mounted in armored half-track trucks. Pacific Command, for example, established nine aerodrome

defense companies, although only four reached their full establishment. In May 1943 the companies were further reorganized into a single airfield defense battalion on each coast. Each battalion headquarters then assigned company- or platoon-sized task elements to defend each of the airfields in its area of responsibility. However, due to the reduced likelihood of enemy raids in significant strength, these short-lived battalions were disbanded during the fall of 1943.

In August 1943 the RCAF reassigned the defense of Eastern and Western Air Command Air Stations to the RCAF Provost and Security Service. Each command had a deputy assistant provost marshal (DAPM) (defense) staff officer and two NCO service police instructors to advise and oversee the command airfield defense program. Station-level DAPM (defense) officers and service police instructors were also appointed to advise each station commander on ground defense matters, conduct ground defense liaison with nearby army units, organize and provide individual ground warfare training for assigned station personnel, and supervise collective ground warfare training. This new ground defense policy was explained, as follows, in a letter from the RCAF director of provost and security services to his US Army Air Corps counterpart:

The duties of the Station Defence Officer and his two senior N.C.O.s comprise the setting up of strategic gun posts, slit trenches, and other physical defence features, and the systematic training in defence tactics of all station personnel, such training being compulsory at the units concerned. The officers and N.C.O.s selected for these duties have had advanced battle training and are fully qualified instructors (it should be explained that this is a very recent arrangement which supersedes a much more ambitious program of aerodrome defence, involving special bodies of aerodrome defence troops. Due, however, to the improvement in the general war situation, plus the increased necessity for economy in manpower and the fact that Army units are generally adjacent to the units concerned, it has been considered that the Station Defence Organization, as outlined above, is adequate under the circumstances).³⁹

This policy, which continued until the end of the war, required all personnel to actively participate in the defense of their station from the most likely threats of an attack from a small enemy landing party or from an odd enemy plane that might slip through on a nuisance raid.

The aerodrome security and defense situation in the United Kingdom was quite different from that in Canada. Since RCAF units were operating from RAF bases, the overall responsibility for airfield security and ground defense remained with the British. The 162 RCAF security police personnel posted overseas were almost all employed

in England on provost rather than security duties.⁴⁰ The Canadian army did not form any specialized aerodrome defense units for service overseas, although units of the 1st Canadian Corps, garrisoned in Britain, did have a broad area defense mission that could involve nearby airfields. For example, during Exercise Waterloo in June 1941, the corps practiced its mobile counterattack role against airborne troops around the Tangmere group of aerodromes in southeastern England. By June 1942 the Canadian infantry brigade assigned to the Tangmere counterattack role was relieved of this duty by a British unit, although a battalion of the 2nd Canadian Division temporarily reassumed this role under command of a British infantry brigade in the summer of 1943.

By mid-June 1944, following the Normandy landings, RCAF fighter squadrons of the recently formed No. 83 Group, Second Tactical Air Force began operating from forward airfields in France. Airfield defense again became a high priority, since RCAF units were operating in very close proximity to German ground forces. However, during the Normandy breakout and subsequent campaigns, the British-Canadian armies needed to maintain their forward momentum and could ill afford to dedicate large numbers of combat forces to protect newly seized RCAF airfields in the rear areas. Canadian army units were sometimes assigned missions to capture enemy-held airfields—a particularly bloody example was the four-day battle for the Carpiquet airfield near Caen in early July 1944. However, the subsequent ground defense of RAF and RCAF airfields was not primarily an army mission. In any event, No. 83 Group was tasked in direct support of the 2nd British Army rather than the 1st Canadian Army, which did not become operational until 23 July 1944—a situation that would have severely complicated matters had the Canadian army been assigned this mission. In actuality, armed air and ground crews normally provided close defense within the inner perimeter of forward RCAF bases, while attached RAF Regiment units provided anti-aircraft and external ground defense. The British Air Ministry had specifically allocated about 4,000 infantry-trained members of the RAF Regiment for ground defense of forward airfields during the land advance across the Continent. According to an Air Ministry letter from August 1943, each tactical air force group was to be allocated six RAF Regiment field squadrons for ground defense and an additional 10 antiaircraft squadrons.⁴¹

The exact level and quality of ground defense training provided to RCAF personnel are not clear from the available documentation. However, the official history of the RCAF hints at the ground threats Canadian airmen in No. 83 Group faced. For example, an RCAF unit operating from an airfield at Eindhoven in the Netherlands

was put on alert as a small pocket of German troops on the other side of the Wilhelmina Canal threatened the base and the infantry units holding the canal were not sure they could contain them. No 400 Squadron and No 143 Typhoon Wing spent the rest of the day preparing to fight, not in the air as they had been trained, but on the ground; and just before midnight No 400 issued rifles to all its personnel, who made their way to shelters to await further instructions. After four hours they were allowed to return to bed, albeit fully dressed with rifles handy, and it was later revealed that enemy patrols had been seen one to two thousand yards from the officers' quarters.⁴²

The first RCAF units to operate on German territory armed everyone in order to guard against saboteurs. On 30 March 1945, the report of one such unit stated, "Immediate steps are being taken to ensure that all personnel are familiar with, and know how to fire and dismantle all types of weapons used for defence. The precaution is being taken with an eye to future moves that will no doubt take us into German territory, and also [due to] the fact that this Unit might not be under the protection of an airfield which have [sic] RAF Regiment personnel for this purpose."⁴³

The RCAF entered the war completely unprepared to deal with its own protection, which required that army units be diverted for domestic air base ground defense until four years into the conflict. When the air force finally assumed this role in 1943, it did so with only a handful of full-time specialists, relying on lesser-trained station personnel to form the bulk of its ground protection force. While thankfully never put to the ultimate test, one could argue whether any RCAF home defense squadron could have continued flying operations while its technicians and logisticians were all manning slit trenches. In the final stages of the war, the RCAF was spared responsibility for forming its own ground defense units or requesting them from the army since No. 83 Group airfields were all under the protection of the RAF Regiment. Although the RCAF sustained numerous casualties from aerial attacks on its European airfields, it fortunately suffered none of the determined airfield ground attacks that afflicted many other Allied air forces. The RCAF ended the war with only a relatively small number of service police ground defense specialists,

most of whom were quickly demobilized. By 1946, the newly named RCAF Security Services branch was reduced to a total establishment of only four officers and 68 men, once again making effective air base security and defense all but impossible.

The Cold War

The lessons of the last war were not completely forgotten, as the RCAF soon began rebuilding for a new “cold” war with the Soviet Union, and ground defense was added back into the RCAF Security Services’ portfolio. Retired wing commander John Blake recalls the situation:

The need for such training had long been recognized by the RAF and the USAF which had the opinion that unless personnel of the Air Force were given some form of combat training, the force was, in actuality, composed of civilians in uniform. . . . The RCAF decided in 1951 that it would embark upon a training program for all new entrants . . . and to train all personnel already in the RCAF in the use of personal weapons: rifles, light machine guns, etc. and to develop a training program to organize all RCAF personnel into units capable of defending an Air Base in the event that this became necessary.⁴⁴

The RCAF once again turned to the RAF Regiment for help in building this program, and four regiment officers were subsequently loaned to the new Ground Defence Branch of the Directorate of Air Force Security. Working under Wing Commander Blake, these RAF Regiment officers quickly recommended that the RCAF recruit a number of ground defense officers and NCO instructors with previous experience. The 34 selected officers were sent to the RAF Regiment Depot in Yorkshire for an eight-week course, and the 180 NCOs were trained at Camp Borden. The majority of these specialists were posted as instructors at the manning depots, where they instilled in new recruits an understanding that “notwithstanding their choice of trade they were also members of a fighting force—the RCAF—and when deployed to their RCAF units they would be able to defend their base . . . should this be necessary.”⁴⁵

While the RCAF police remained responsible for the day-to-day security of air force establishments, station defense forces comprised of nonspecialist personnel were capable of manning vital points during expanded security postures. By the time the four RAF Regiment officers returned home, the RCAF’s new ground defense officers and ground defensemen had been sent to air bases in Canada and Europe

to conduct ground defense training and exercise these part-time station defense forces.

However, as the Soviet nuclear threat grew, the ground defense organization began moving away from active ground defense toward passive defense.⁴⁶ In 1954 the Ground Defence Branch at Air Force Headquarters was shifted from the Personnel Division (Directorate of Security) to the Operations Division, where it was eventually transformed into the Directorate of Nuclear Defence Operations. A 1957 historical report from 1 (Canadian) Air Division in Metz, France, provides a flavor of the ground defense situation of the day:

Ground Defence policy has undergone several changes during 1957, which have been reflected in 1 Air Division. Passive Defence has been given a much greater emphasis than ever before with the greater probability of use of thermonuclear weapons and their much larger areas of immediate effects. . . . Active Defence activities have been generally restricted to training of personnel in personal arms and the maintenance of a Mobile Defence Force on each installation to cater to such hostile activities which are beyond the resources of the Security Police.⁴⁷

While the nuclear issue initially detracted from the RCAF's ground defense posture, it would soon have a more positive effect. Following a promise made but never fulfilled by the previous Diefenbaker government, Lester B. Pearson, the prime minister, moved in 1963 to acquire nuclear warheads for three new RCAF weapons systems: BOMARC surface-to-air missiles (SAM), CF-101 Voodoo fighter interceptors in Canada, and CF-104 Starfighter strike aircraft in Europe.⁴⁸ Faced with the dilemma of how to secure these warheads to the strict standards laid down by the United States, which still retained ownership, the RCAF decided to assign this role to its police—ushering in a new era of robust security at RCAF installations. Protection provisions for each weapon system were generally similar, with the USAF security police guarding the interior of the weapons storage area and the RCAF/CF providing external security and base defense. As an example, the CF-104 agreement stated, "The RCAF is responsible for the general security of the agreed bases and external security of all land areas, structures, and other facilities made available by the RCAF for the use of the USAF. External security, for the purpose of this arrangement, is defined as protection against enemy forces, saboteurs, paramilitary forces or other unauthorized personnel."⁴⁹

Until the last nuclear weapons left Canadian soil in June 1984, both the RCAF Police (AFP) and later the Canadian Forces MPs took

this mission very seriously. A massive indoctrination and training program was carried out to form dedicated nuclear security forces at all nuclear-capable bases, in addition to the regular air base police units. The AFP establishment doubled to a high of 1,800 men, and 34 sentry dog handlers were trained to augment the security of these vital assets in Europe. Over 800 specialist AFPs were employed at the various nuclear units: 54 each at the two BOMARC SAM sites, 95 each at the four CF-101 bases, and 164 each at the two CF-104 bases. Each armed with a submachine gun and a pistol, these personnel provided strict access control and security surveillance of the weapons storage areas and quick-reaction alert facilities, patrolled facility perimeters, and provided mobile security-alert teams for incident response. Nuclear security specialists were skilled in the use of field tactics, cover fire, cover, convoy escort procedures, security sweeps of runways prior to launches, and security for mass loads and combat turnarounds.⁵⁰

In March 1960, as nuclear weapons security preparations were in full swing, a new emergency defense plan was published by Headquarters 1 (Canadian) Air Division that transferred all remaining active ground defense responsibilities from the nuclear defense staff back to the security (AFP) staff. Two years later the trade name of *ground defenseman* was changed to *nuclear defense instructor*, formally marking the specialization's transition from active to passive defense. A cadre of Air Division AFP personnel were qualified as small arms instructors, and the RCAF police once again became responsible for all aspects of air force security and ground defense training. In February 1968, with the implementation of the Canadian Forces Reorganization Act, the AFP trade also disappeared, and its members became military policemen within the new CF Security Branch, which inherited all the roles of the RCAF Directorate of Security. The nuclear defense trade, as one commentator put it, simply "disappeared in the imbroglio of integration."⁵¹

The AFP/MP nuclear security forces, as robust as they were, still had a very tightly focused role of protecting specific assets within a larger air station or base. In any event, the last nuclear weapons were withdrawn from Canadian Starfighter squadrons in 1972, bringing to a close the nuclear era for our European-based forces after only eight years of operational service.⁵² Throughout the 1970s and 1980s, the broader issue of air base ground defense at CFB Baden and CFB Lahr in West Germany was addressed in two parts: through an auxiliary

base defense force (BDF) that, along with the base MP unit, would operate within the base perimeter in times of increased security alert, and by German Territorial Army units. The *Bundeswehr* maintained six (later 12) territorial home defense brigades of light infantry troops that were assigned a rear-area defense role. For example, a company of Territorial Army troops was assigned to protect the exterior of the CFB Lahr airfield, and a further rifle battalion was earmarked for security of the greater Offenburg-Lahr area.⁵³

Within this seemingly robust layering of defenses, the BDF organization could justifiably be singled out as the weakest link. It was a part-time organization that was overly focused on riot control and internal security, and its personnel lacked the training and equipment required for credible ground defense against the postulated threats of the day. A series of articles in *Canadian Defence Quarterly* from 1980 and 1986 openly questioned the ability of the BDF to protect CF air bases against Soviet airborne and special forces, terrorists, or even armed malcontents.⁵⁴ In one article, W. H. Welch concluded, "All in all, then, CF airfield defence is basically anti-infiltration/anti-sabotage oriented. . . . It does not provide defence against organized ground attack."⁵⁵ In a later article, Welch added, "Obviously, the term Base Defence Force is a misnomer. A more accurate descriptive term is 'Base Sort of Internal Security Force.'"⁵⁶

Having witnessed the BDF system firsthand as a base security officer in the late 1980s, I can attest that these were not unfair assessments of the very limited capability of the BDF to deter or contain, never mind stop, a determined adversary. Unclear or illogical command relationships further hampered some BDFs. The base security officer, as the base commander's security adviser and commander of the full-time armed MP force, should have retained tactical control of the BDF when called out. This often did not happen, and in some extreme cases, the MPs were actually subordinated to the part-time BDF. Although the BDFs at Lahr and Baden were better trained and more frequently exercised than their domestic counterparts, the overall weakness of the BDF concept was still concerning since NATO had acknowledged airfield defense as a key area of concern in the late 1970s.⁵⁷ The BDF concept, driven largely by Cold War requirements, disappeared once the Soviet threat dissipated and was replaced with the current base/wing auxiliary security forces (WASF in air force parlance). Although each WASF is now closely aligned with the wing security force (the MP unit) for tactical command and

control, it is smaller and has even less ground defense capability than the BDFs did.

The Gulf War to Present

The air force's reliance on part-time "defense" forces during the Cold War left it in a quandary when Canada decided to send CF-18 fighter-bombers to the Emirate of Qatar in 1990 under the US-led coalition to counter Iraq's invasion of Kuwait. The Canadian Air Task Group Middle East (CATGME) was initially prepared to rely on host-nation security forces and a handful of MPs to protect the air contingent. However, a subsequent threat assessment made it obvious that a more robust security force was needed. In late October 1990, the deputy commander of 1 Canadian Air Division led a reconnaissance visit to Doha Air Base to, among other things, assess the security requirements. The team included an infantry major who, according to his regimental history, "put his two and a half days in Qatar to good use" and returned home with "a vastly converted Air Force recce party."⁵⁸ Very quickly thereafter, the chief of the Defence Staff (CDS) approved a 100-man infantry "security company."⁵⁹

"Mike" Company of the 3rd Battalion, Royal Regiment of Canada (RCR), from 4 Canadian Mechanized Brigade Group (CMBG), was subsequently handed the task of "defending Canadian personnel, aircraft and combat supplies from ground attack," and its first troops arrived in Doha on 5 October 1990.⁶⁰ The three platoons of this 118-man company were barely sufficient for the task of protecting four disparate locations: "Canada Dry 1" camp, which held the Canadian Support Group and most of the living quarters (3.5 km from the airfield); "Canada Dry 2" camp, containing the air and ground crew living quarters (2.5 km from the ramp); the main military ramp area and CATGME tactical headquarters; and the quick-reaction alert area.⁶¹ Canada's official history of the Persian Gulf War (Operation Friction) recounts that Mike Company

dug defensive positions, erected fences and observation posts, and placed guards around the perimeter to control access to the base. The unit's war diary relates that the company stacked tens of thousands of sandbags and used more than five hundred rolls of barbed wire during the two months of installation. Because aircraft were not in fortified shelters, their protection posed a constant problem, necessitating continuous nighttime patrols and checks. Four *Grizzly* armoured vehicles were brought from Canada. Armoured, armed, and fast, they were the envy of neighbours faced with similar problems. Soon,

however, they were put at the service of an integrated allied patrol team. This economized the security resources of Doha Air Base.⁶²

The “Royals” were replaced by “Charlie” Company of the 1st Battalion, Royal 22e Régiment (R22eR) in late December 1990. Like the Royals, the “Vandoos” were challenged to provide more than minimum security due to the large size of the Doha Air Base. They sought to mitigate the “high” terrorism threat through a muscular and aggressive defense system that featured heavily fortified defensive positions, perimeter watchtowers, and armored vehicle patrols.⁶³

As the infantry patrolled the perimeter, controlled access, and searched vehicles for explosive devices, the eight-person MP section focused mainly on police and administrative security duties. This was a change from Lahr and Baden where these same MPs were part of the full-time base security force. The sidelining of MPs in the deployed air base security and defense role suggests that their Cold War static internal-security focus (countering criminality, subversion, espionage, and sabotage) was no longer adequate to deal with contemporary threats on operations. As the official history tells it, MPs during Operation Friction were “neither numerous enough nor sufficiently well trained to carry out a defence of the perimeter in a war setting.”⁶⁴ The air force was fortunate that the infantry stepped up to the plate, acquitted itself well, and provided first-rate protection of the “Desert Cats” squadron in Qatar.

Notwithstanding, one is left wondering if the army would have pulled its combat troops from airfield security duties if the Canadian government had approved Operation Broadsword—a plan that would have deployed to Saudi Arabia a 7,000- to 12,000-person force built around 4 CMBG (the parent unit of 3 RCR and 1 R22eR). According to historian Sean Maloney, a CDS staff check completed on 13 October (a week after Mike Company arrived in Qatar) assumed that Operation Broadsword would “receive first priority over existing Army operations, and that resources could be drawn from elsewhere.”⁶⁵ Not surprisingly, the army’s first priority if it were committed to the fight would be combat sustainability and battle casualty replacement. Given the government’s subsequent decision to sideline the army from the coming ground battle, it is not unreasonable to suggest that the army’s willingness to continue guarding an air base in the rear was at least partly driven by a desire not to be left completely out of the war.

Operation Friction was a wake-up call for the air force. Years of operating from static bases in Germany had made it complacent to the realities of expeditionary operations. The insufficiency of existing ground support concepts and organizations was exposed in the ad hoc nature of the CF's Gulf War air contingent, and this situation prompted the development of a contingency support wing (CSW) concept in the mid-1990s.⁶⁶ The concept envisioned deployable airfield security force (ASF) squadrons comprised mainly of specially trained MP personnel "with capabilities for protection of CF aircraft, mission critical equipment and personnel, intelligence/counterintelligence gathering on local threats, armed response to threats inside the security area of operations, onboard armed security, and police services which includes criminal investigation and reporting."⁶⁷

It also envisioned an airfield defense force (ADF) "with capabilities for low-level air defence (LLAD) and external perimeter security and defence beyond the capabilities of the ASF Squadron. This element is comprised of Land Force Command units (4 AD Regiment, 128 Battery) requested by commander AIRCOM when required for deployed operation."⁶⁸

The army, however, was no longer willing or able to commit land forces for ADF-type duties, a position that was spelled out in a letter from the director of General Land Forces Development in May 1995, the same month that the CSW concept document was published.⁶⁹ The CSW concept provided no permanent establishment for these ASF squadrons, so personnel still had to be sourced from units across the air force, straining an already overstretched MP branch. Notwithstanding, ministerial organizational orders were approved in August 1997 that created 4, 8, and 14 ASF Squadrons at Cold Lake, Trenton, and Greenwood respectively as units of the Regular Force. The ASF concept took hold within the senior ranks of the air force MP community despite the lack of dedicated resources, and composite ASF flights were subsequently successfully deployed on several missions facing moderate ground threats. An ASF flight was organized in 1996 to protect the 430 Tactical Helicopter Squadron detachment supporting United Nations operations in Haiti, and another flight was created and deployed in 1999 to protect the composite "Kosovo Rotary Wing Aviation Unit" at Pristina Airport. The later ASF flight operated both inside and "outside the wire," successfully securing forward area refueling points and mobile repair party locations in the face of potentially hostile ground threats.

In January 2002, as part of Canada's military contribution to the campaign against terrorism, two CP-140 Aurora long-range patrol (LRP) aircraft and 200 personnel deployed to an air base in the Persian Gulf region. They were followed one month later by a tactical airlift detachment of three CC-130 Hercules aircraft and 180 personnel. The original security concept of operations for "Camp Mirage" was based on a small composite ASF flight of 24 MP personnel, supported by an auxiliary security force made up from the LRP and tactical airlift detachment personnel. However, the in-theater air detachment commanders would not agree to provide personnel for an auxiliary security force, citing the negative impact this would have on generating flying sorties, so the undersized ASF flight handled all camp access control, vehicle searching, flight-line security, perimeter patrolling, and police duties within its own limited resources.⁷⁰ Due to competing demands for MP personnel for other CF operations, the air force was unable to force-generate sufficient numbers of MPs to maintain an all-encompassing ASF flight after the first two rotations.

Despite its earlier protestations, the army agreed in March 2003 to provide a defense and security (D&S) platoon of infantry at Camp Mirage to take over access control, vehicle searching, and close defense duties from the MPs, who then reverted to garrison policing and security support duties with a smaller number of personnel. However, the army's approach to this task had been uneven in the intervening four years. Between August 2003 and February 2004 the RCR provided three light infantry platoons for two months each. The task was then relegated to ad hoc platoons of reserve infantry on six-month rotations from 38 Canadian Brigade Group (CBG) (Land Forces Western Area) and later Land Forces Central Area. The 38 CBG troops actually arrived in theater before all of their required predeployment training was completed, and later up to eight platoon members at a time were sent forward to Camp Julian in Afghanistan.⁷¹ Although this doubtlessly alleviated boredom and helped augment Camp Julian's defenses, it further suggests that ABD in the rear was not a top priority for the army. Notwithstanding these ad hoc D&S platoons at Camp Mirage, the army continued to resist any formal commitment to the airfield defense role until it was finally directed by the vice chief of Defence Staff, in May 2008, to generate ADFs in support of deployed air expeditionary wings. However, not until October 2012 did the army formally indicate its willingness to assign combat units in support of deployed air wings. Notwithstand-

ing, this mission remains unmentioned in army doctrine, and the army's enthusiasm for training and carrying out this role to air force expectations remains untested.

Allied Perspectives on Air Base Ground Defense

Rear guards are the safety of armies and often they carry victory with them.

—Frederick the Great

To fully evaluate the relative strengths and weaknesses of Canada's approach to air base ground defense, it is instructive to survey the manner in which our allies carry out this important mission. This section reviews the development of airfield ground defense capabilities within the United Kingdom, France, Australia, the Netherlands, Italy, and the United States. These countries were chosen because they, like Canada, have been actively involved in air expeditionary operations since the end of the Cold War and because Canada is likely to work alongside all of these nations in future coalition or NATO operations. The Netherlands and Australia also represent countries whose military forces are of similar size and capability as those of Canada.

United Kingdom: The Royal Air Force Regiment

In 1926 the Committee of Imperial Defence ruled that the British army would retain responsibility for the general defense of land areas upon which RAF stations were located, based largely on the experience of the First World War, when the Royal Flying Corps was part of the army. The RAF, however, soon found this arrangement wanting during the Arab-Jewish disturbances in Palestine (1935–38), when the large British army garrison was frequently unable to protect outlying RAF stations threatened by terrorist attack. Although the Air Staff had begun to recognize the inadequacy of these arrangements, the RAF entered the Second World War without a competent cadre of its own advisors to plan and organize airfield defense. Unfortunately, many RAF commanders falsely assumed that their installations and assets would be well protected by infantry, armor, and antiaircraft artillery units of their army brethren.

In 1940, without adequate protection from either their own land forces or those of their allied hosts, the RAF units of the British Expeditionary Force were quickly overrun by German forces in Norway, France, and the Low Countries. This ill-fated campaign prompted the Air Staff to hastily form a Ground Defence directorate to better coordinate defense arrangements and issue guidance to RAF stations. As historian Kingsley Oliver explains, “By this stage of the war it was clear to the RAF that it could no longer rely upon the Army for the close defense of RAF installations; indeed it was only in circumstances far removed from the reality of a major war that politicians and senior officers of both services had been able to shelter behind the illusion that the British army would have sufficient resources to do everything from fighting the land battle to defending the bases on which the Royal Air Force depended for air operations.”⁷² However, even when combined with the formation of a new ground gunner trade for antiaircraft defense and a defense officer specialization within the administration branch, this new directorate could not fully resolve many of the critical issues required to ensure a fully effective ground defense program.

This would all change after the fall of Crete to German paratroopers. The loss of Crete, with its three forward airfields, was a seminal moment for the RAF. Winston Churchill, the British prime minister, personally reviewed the RAF's ground defense policy and ordered that the shortcomings be corrected. He declared that “every airfield should be the stronghold of fighting air-groundmen and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers.”⁷³ A cabinet committee was formed that subsequently recommended the formation of an aerodrome defense corps under the executive control of the Air Ministry. The War Office finally agreed to this solution, and on 1 February 1942 a royal warrant of King George VI raised the RAF Regiment. The RAF Regiment quickly established itself as a formidable ground fighting force and, by the end of the war, comprised about 50,000 officers and airmen in 240 combatant squadrons.

Since the end of the Second World War, the Regiment has been continually employed on operations worldwide, including Palestine, Aden, Suez, Cyprus, Malaya, Indonesia, Oman, Northern Ireland, the Falkland Islands, and Kuwait. RAF Regiment units have recently been deployed in support of Basra International Airport in Iraq and

Kandahar Airfield in Afghanistan, and its troops continue to protect Camp Bastion in Afghanistan.

Today, the Regiment leads the RAF's force protection program. While the primary mission of RAF Regiment remains the active ground defense of RAF installations and assets anywhere in the world, it also carries out a number of other important FP and STO functions. The Regiment provides the main source of RAF expertise in CBRN defense and provides a specialized Defence CBRN Wing in support of joint UK requirements. Additionally, each RAF station has a ground defense training section in which Regiment instructors train all station personnel in measures like first aid, weapons handling, and CBRN defense. RAF Regiment personnel also provide the ground extraction force for the RAF's combat recovery program (including combat search and rescue of downed aircrew), and the tactical air control parties (TACP) that coordinate close air support for the British Army.

In 2004, as a result of the reduced air threat on operations, the UK Ministry of Defence decided to disband the Regiment's ground-based air defense squadrons. The British army now operates all remaining "Rapier" fire units under a new joint headquarters within the RAF command structure.⁷⁴ Personnel from these disbanded units were redistributed among the RAF Regiment's 10 field squadrons, seven FP wing headquarters, RAF station FP training flights, and the Special Forces Support Group, where their expertise is used in securing airfields, temporary landing zones, and drop zones.

RAF Regiment field squadrons are very heavily armed and highly mobile infantry units comprising between 130 and 150 troops. While their size is akin to an army company group, each squadron has almost the same firepower and intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) capability as a British army infantry battalion.⁷⁵ The organization of a typical RAF Regiment field squadron is depicted in figure 2.4.

The current strength of the RAF Regiment is about 3,000, including some 500 part-time reservists. Battle-proven and possessing a very strong doctrinal foundation, the RAF Regiment is widely acknowledged as the standard against which all other air base ground defense forces are judged. An article in the *International Defence Review* provides an example of the widespread respect garnered by this ground combat unit: "The UK's professional airfield defence force, the RAF Regiment, has been repeatedly assessed in NATO evalua-

tions as one of the most, if not the most, efficient and effective organization of its kind available in the alliance.”⁷⁶

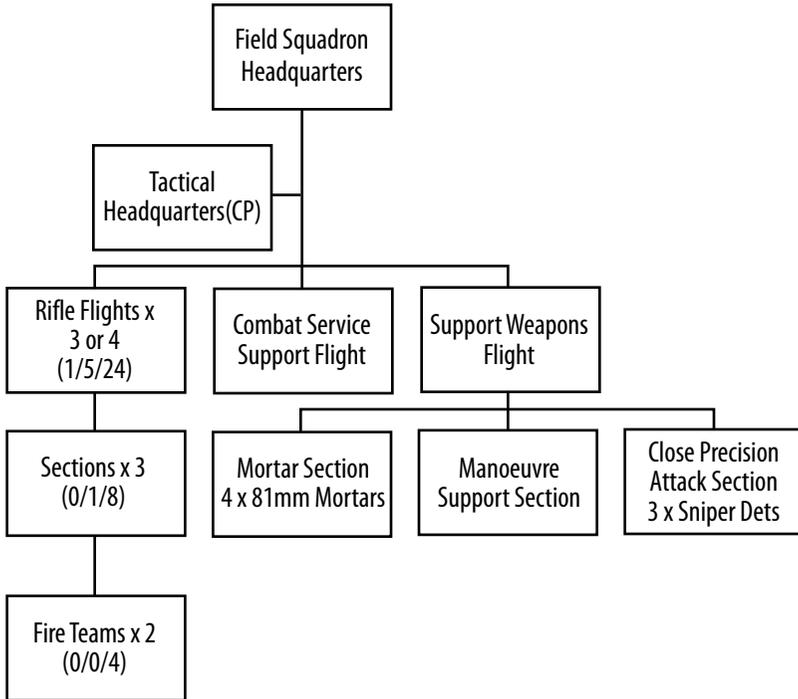


Figure 2.4. RAF Regiment field squadron organization. (Adapted from D. M. Watkins, “Airbase Defence—The Optimum Strategy to Counter Modern Threats to Joint Air Operations,” *Royal Air Force Air Power Review* 7, no. 3 [Autumn 2004]: 88–89; Ministry of Defence, United Kingdom, “RAF Regiment Go on Foot to Make a Difference in Kandahar,” *Defence News*, 29 August 2006; and Royal Air Force, United Kingdom, “The RAF Regiment Field Force” [PowerPoint presentation, RAF Honington, 19 February 2004].)

France: *Les Fusiliers Commandos de l’Air*

The French air force ground defenders trace their lineage back to 1936 when two *Groupements d’infanterie de l’air* were created within the *armée de l’air*. While these original paratrooper units were disbanded by the Vichy government in 1940 because of the armistice with Germany, the Free French Air Force soon created its own units of *l’infanterie de l’air*—later expanded and renamed as *les chasseurs*

parachutistes—of which several battalions were later integrated into the British Special Air Service Brigade. Following this tradition, the French air force formed the *commandos parachutistes de l'air* (CPA) in 1956 to help fight the rebellion in Algeria. By the early 1960s, these CPA units began rerolling to protect air bases at home and abroad and to safeguard the air component of France's nuclear deterrent force. In 1965 a new specialty of *fusilier commandos de l'air* was created to recognize this emerging air base protection role.

Today's *fusiliers commandos* fall under the direction of the *Commandement des forces de protection et de sécurité de l'armée de l'air* (CFPSAA). The CFPSAA is responsible to the air force chief of staff for the overall coordination of FP and ground defense activities at home and abroad. Under the guidance of the CFPSAA, *fusiliers commandos* are employed in 34 “protection squadrons” and three parachute intervention “commandos”—CPA 10, 20, and 30. The CFPSAA also oversees French air force *pompiers* in 33 separate firefighting and rescue sections and a new CBRN specialist trade.

The *fusiliers commandos* serving in the protections squadrons are tasked with the physical security and close defense of air bases and vital points, both in France and abroad. They have no military policing role, since this mission is assigned to the *Gendarmerie nationale*. To assist with the air base security and defense mission, over 600 *fusilier commandos* are trained as military working dog handlers. The three parachute-capable *fusilier commando* units have more specialized roles:

- CPA 10, comprising over 200 troops, is a special-operations-capable unit tasked with seizing and securing airports in support of noncombatant evacuation operations and other military activities. It also provides target designation teams to direct laser-guided bombs.
- CPA 20 and CPA 30, each comprising about 250 troops, specialize in three missions: *mesures actives de sûreté aérienne* (MASA); *récupération survivor en altitude* (RESAL); *recherche et sauvetage au combat* (RESCO). For the MASA mission, CPA sharpshooters fly with special helicopter crews to intercept low-speed aircraft that violate restricted airspace over sensitive sites and special events. The role of these sharpshooters is to engage these aircraft with small-arms fire if necessary. The RESAL mission, involving the rescue of personnel from high-altitude mountain-

ous regions, was recently established due to the operating environment in Afghanistan. For the RESCO mission, the CPAs provide ground extraction teams in support of traditional combat search and rescue duties. CPAs 20 and 30 can also be tasked to augment the defense of deployed air force elements.

In addition to these specialized roles, all three CPAs can carry out ground reconnaissance missions and provide TACPs to direct air strikes.

Together, *the fusiliers commandos and commandos parachutistes de l'air* total about 5,545 personnel, which represents 7.8 percent of the overall regular and reserve personnel strength of the French air force. This is the highest percentage of the seven nations surveyed and clearly demonstrates the importance that France places on the security and ground defense of its air bases, both at home and abroad.

Germany: *Das Objektschutzregiment der Luftwaffe*

During the Second World War, Germany was the first country to recognize the value of attacking enemy airfields using airborne troops. German Wehrmacht (Army) and Luftwaffe (Air Force) paratroopers successfully seized undefended airfields in Denmark, Norway, Belgium, the Netherlands, and Crete. In the European theater, the wartime Luftwaffe relied on its many paratroop units, anti-aircraft units, *Luftwaffefelddivision* (Field Division), and elite “Hermann Goering Regiment” to ensure the security of its airfields and installations.⁷⁷ However, Luftwaffe forces operating in North Africa and the Mediterranean lost over 367 aircraft to British special-forces ground raids between 1940 and 1943. Vick attributes the high Luftwaffe ground-loss rate in the desert theater to the ad hoc and reactive nature of its ground defenses there. In particular, he cites the poor coordination between the Luftwaffe units responsible for interior base defense and the army Afrika Korps units responsible for rear-area security.⁷⁸

During the Cold War, the German army retained responsibility for rear-area security outside the perimeter of Luftwaffe bases. Up until 1997, Luftwaffe security within the base perimeter was a unit-level task performed primarily as a secondary duty. In times of crisis, air force conscripts and reserve personnel would be called upon to form specialized “safeguard” units to further bolster the ground defense posture. This system worked adequately given the internal focus of

the Luftwaffe during the Cold War but was insufficient as Germany refocused its armed forces for expeditionary operations. To better ensure the force protection of deployed Luftwaffe units against both conventional and asymmetric threats, the *Objektschutzbattalion der Luftwaffe* (Security Battalion of the Air Force) was made operational in March 1997. Numbering about 1,000, the battalion was organized into five squadrons: two “infantry security” squadrons of four flights each, one point-air-defense squadron with shoulder-fired “Stinger” missiles, one CBRN and fire protection squadron, and one airfield-damage-repair and explosive-ordnance-disposal (EOD) squadron. The unit was designed to be modular so that an appropriate mix of flight- or section-size force elements could be grouped together and deployed depending on the threat.

In early 2003 the German Ministry of Defense released new defense policy guidelines setting out its transformation goals. Recognizing the need for forces that could rapidly take part in international crises and conflicts, the document called for the services to focus on building six essential capabilities, the last of which was “survivability and protection.”⁷⁹ This reemphasis on force protection led the Luftwaffe senior leadership to increase its ground defense capability under its recently streamlined force structure.⁸⁰

In June 2006 the *Objektschutzbattalion* was dissolved and its active and passive defense missions passed to the new *Objektschutzregiment der Luftwaffe* (Security Regiment of the Air Force). The new regiment numbers about 1,800 active personnel and has an additional 680 reserve positions. In creating the *Objektschutzregiment*, the Luftwaffe explicitly acknowledged the requirement to control its own dedicated, professionally trained, and robustly equipped ground defense forces that are able to deploy quickly and operate throughout the threat spectrum.⁸¹ The organization of the regiment is depicted in figure 2.5.

The *Objektschutzregiment* retains the modularity and builds on the passive/active defense mix of its smaller predecessor. The “infantry security” troops are trained at the German Army Infantry School in Bavaria and are armed with typical infantry weapons and equipment, including medium machine guns and light antiarmor weapons. Based on lessons learned from recent operations in Kabul, Afghanistan, the regiment has increased its holdings of armored vehicles and night-vision equipment and acquired 40 mm grenade machine guns for increased direct fire support.⁸² The regiment’s mission is not focused on installation defense in Germany, allowing it to concentrate

its efforts on preparing and training for deployed operations. In so doing, the regiment provides the Luftwaffe with a very flexible ground combat capability in support of its crisis reaction air forces.

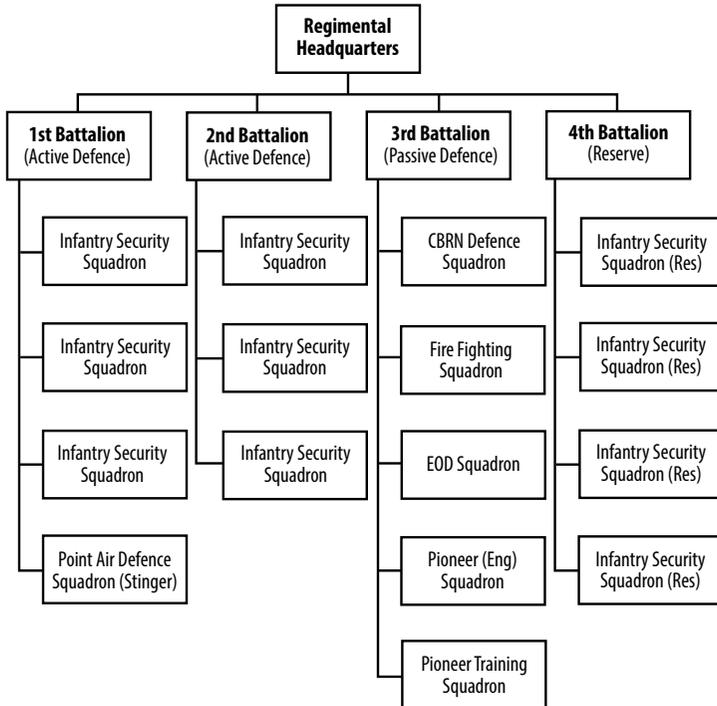


Figure 2.5. Objektschutzregiment der Luftwaffe organization. (Adapted from Government of Germany, *Informationsdienst für Reservisten & Reservistinnen 2/2006* [Bonn: Führungsstab der Streitkräfte, 2006], 4; Luftwaffe, Ministry of Defense, Government of Germany, “Das Objektschutzregiment der Luftwaffe ‘Friesland’ – Objektschutz in der Luftwaffe,” n.d., <http://www.luftwaffe.de/portal/a/luftwaffe>.)

Australia: Royal Australian Air Force Ground Defence

The fall of Singapore to the Japanese army on 15 February 1942 dealt a devastating blow to Australians, who had hoped this island fortress would halt Japan’s further aggression. The defeat left Australians facing, for the first time, the possibility that they would have to defend their own shores. These fears were soon realized when, on 19

February 1942, two successive Japanese air raids caught the Royal Australian Air Force (RAAF) Base at Darwin completely unprepared. The raids on Darwin, which killed about 250 military personnel and civilians, “prompted understandable fears that the air attacks would soon be followed by an invasion force.”⁸³ By the following October, the RAAF had taken steps to create a specialist security guard unit at Livingston Airfield in the Northern Territory. Soon redesignated as No. 1 Airfield Defence Squadron (1AFDS), this battalion-sized unit was staffed with specialist airmen from the new aerodrome defense guard (ADG) trade and given the responsibility of guarding operational RAAF bases, both inside and outside of Australia. No. 2 Airfield Defence Squadron (2AFDS) was formed in March 1945 to increase the pool of trained ground defense specialists, and ADG personnel from both units saw action throughout the South Pacific for the remainder of the war. Both squadrons were disbanded in late 1945, although 1AFDS was briefly resurrected from 1951 to 1953 to train National Service personnel in airfield defense duties.

In response to overseas commitments in Southeast Asia, the RAAF resurrected the airfield defense guard trade in 1965 with a mission to defend its personnel, aircraft, and facilities from attack by saboteurs, guerrillas, partisans, and regular enemy soldiers. By 1968 about 200 ADGs were serving at RAAF facilities in Malaysia, Thailand, and South Vietnam. In Vietnam the ADGs conducted both on- and off-base ground defense duties at the Vung Tau and Phan Rang airfields, and a number of them were also employed as helicopter door gunners. By the time Australia withdrew its forces from Vietnam in 1975, the ADGs had suffered one killed and seven wounded in action.⁸⁴

Following the Vietnam War, active duty ADG tradesmen remained organized around five independent rifle flights until March 1983, when they were collocated under a reformed 2AFDS. In recent years, the ADGs have evolved to meet the changing asymmetric threats to RAAF operations and have maintained a high level of deployed service throughout the world including operations in Cambodia, Kuwait, East Timor, the Solomon Islands, Afghanistan, and Iraq.

Today the ground defense (GRDEF) occupational grouping, comprising ADGs and GRDEF officers, provides the RAAF with a specialist ground defense force to protect air force bases and installations from hostile ground action. GRDEF personnel also provide a training cadre to ensure all RAAF personnel remain competent in ground and CBRN defense and weapon handling skills. Primary GRDEF op-

erational tasks include the following: aircraft security operations both in flight and within the confines of an airfield; patrol and surveillance operations around the approaches of airfields, providing early warning and protection of military assets and personnel; close personal protection operations, ensuring the safety of aircrew, passengers, and others during transit to and from aircraft or airfields; and quick reaction force (QRF) duties including “counter-attack and counter-penetration tasks, cordons and searches, vehicle and personnel checks, and convoy protection.”⁸⁵ The RAAF recently procured its own armored “Bushmaster” infantry mobility vehicles to protect ADG personnel while carrying out QRF, convoy escort, and other high-threat activities. RAAF Combat Support Group is the lead agent for operational-level force protection issues, with the responsibility to raise, train, and sustain the RAAF’s air base protection capability. Under the Combat Support Group, all deployable GRDEF resources fall under No. 395 Expeditionary Combat Support Wing (395ECSW), based at RAAF Townsville. The 2AFDS is the only full-time airfield defense squadron, with a permanent air force (PAF) establishment of about 170 personnel. The 1AFDS is a total force unit, integrating a PAF cadre with a larger number of GRDEF reserve personnel. Upon completion of training, reserve personnel are required to complete 11 months of full-time service with an airfield defense squadron, followed by a minimum of four years of part-time service (32-plus days/year) at a reserve rifle flight. The organization of 2AFDS is depicted in figure 2.6.

GRDEF personnel work very closely with military working dog (MWD) teams from the RAAF security police (SECPOL), and these dog/handler teams routinely patrol alongside ADGs on deployed operations. Together, the ADG riflemen and SECPOL MWD teams provide a formidable ground defense detection and response force in support of RAAF expeditionary operations.

The Netherlands: *Koninklijke Luchtmacht* Force Protection Organization

The Dutch painfully learned the vital importance of ABD during the German invasion of the Netherlands in May 1940. One of Germany’s justifications for violating Dutch neutrality was the capture of its air bases for use in the coming attacks on Britain. On the first day of the invasion, German airborne troops overcame the relatively light

defenses and occupied a number of airfields around The Hague and Rotterdam.⁸⁶ Although Dutch land forces subsequently counter-attacked and retook several airfields around The Hague, their air units sustained heavy losses and were forced to operate their remaining aircraft from improvised strips concealed from the Germans. The struggle for control of military airfields played a key role in paralyzing the Dutch defensive system and may well have hastened the government's capitulation a few days later.

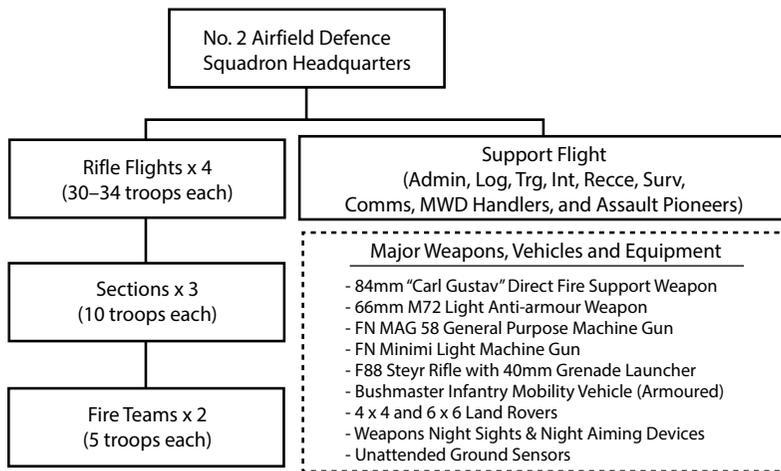


Figure 2.6. RAAF airfield defense squadron organization. (Royal Australian Air Force, “Airfield Defence Guard,” n.d., accessed 18 January 2007, <http://www.defence.gov.au/raaf/adg/>; WGCDR John Leo, RAAF, commanding officer, 2AFDS, e-mail correspondence with the author, 1 March–9 April 2007; and WGCDR John Leo, RAAF, commanding officer, 2AFDS, “Airfield Defence Squadron Operations & Support” [Power-Point presentation, 22 February 2007].)

During the early Cold War period, airfield defense soon became a priority, as the Dutch rebuilt their air force and formed an Airfield Defense Command as one of five new operational commands. At this time, the newly independent *Koninklijke Luchtmacht* (KLu, also known as the Royal Netherlands Air Force) began building a formidable ground-based air defense (GBAD) system using a combination of antiaircraft missiles and guns.⁸⁷ Airfield Defense Command was later amalgamated under a new Tactical Air Forces Command, and

older and less relevant air defense systems were decommissioned as the Cold War drew to a close. By 1996 several of the former GBAD squadrons were converted to the ground defense role.

Dutch post-Cold War security policy envisions an activist role for its armed forces and a willingness to intervene in the early stage of crisis situations throughout the world.⁸⁸ To support expeditionary operations, the KLu recognized and addressed the requirement for a dedicated protective-security and point-defense capability. The KLu has a security and ground defense career field that encompasses three subspecialties, and a closely related air defense career field with two subspecialties. These trades are responsible for the following tasks:

- *Bewaking* (guarding). At each KLu installation, these personnel are responsible for general base-security duties such as access-control, monitoring electronic security systems, responding to alarms and security breaches, and conducting mobile security patrols. They do not have a law enforcement role, since this mission belongs to the *Koninklijke Nederlandse Marechaussee* (Royal Netherlands Military Police), which has the status of a fourth military service.
- *Hondengeleiding/Bewaking* (dog handling/guarding). These specialists are responsible for maintaining, training, and handling MWDs in support of base security and defense, at home station and on deployment. Dog handlers can also carry out all regular security and guarding duties.
- *Object Grondverdediging* (resource protection). These specialists are responsible for the ground defense of priority resources such as F-16 fighters, Apache and Chinook helicopters, and Patriot missile systems, both at home and abroad. They also carry out deployed installation access control, perimeter security patrolling, and mobile response force duties.
- *Stingerschutter/Bewaking* (Stinger operator/guarding). These troops operate the shoulder-fired Stinger antiaircraft missile launcher in the defense of civilian and military airfields and assets. Stinger operators are also responsible for their own security and FP, both at home station and deployed operating locations.
- *Lancering Patriot/Bewaking* (Patriot missile operator/guarding). These personnel operate the Patriot antiaircraft and antiballistic

missile system. In conjunction with the Stinger operators, they provide for their own security and FP.

The security and ground defense career field is also responsible for training other KLu personnel in small arms, STO, and ground combat skills.

The KLu currently maintains three specialized *Object Grondverdediging* (OGRV) platoons at a high state of readiness to support expeditionary operations. In 2003 the Ministry of Defense partially reversed an earlier decision to cut this ground defense capability from the KLu and assign it to the army and marine corps—although the total number of air force OGRV platoons was reduced from six to three because of defense budget constraints.⁸⁹ One of these 37-person OGRV platoons is maintained by the security squadron at Volkel Air Base, and the remaining two platoons are maintained by the security squadron at Leeuwarden Air Base. The De Peel Air Base also has two deployable Stinger flights of 24 troops each. Recent deployed missions for the OGRV platoons include guarding the KLu Apache helicopter detachment in the Republic of Djibouti (United Nations Mission in Ethiopia and Eritrea) and protecting the KLu transport and medical evacuation helicopter detachment in Split, Croatia (NATO Stabilization Force). More recently, OGRV groups have been tasked with protecting KLu helicopter and fighter detachments in Kabul and Kandahar, Afghanistan.

OGRV troops and Stinger operators are trained in infantry skills, and they employ a variety of support weapons, including machine guns, 40 mm grenade launchers, hand grenades, and light antiarmor weapons. Select OGRV personnel are trained as snipers, combat lifesavers (medic), and helicopter door gunners. The KLu also maintains a pool of security and OGRV reservists in a number of air reserve squadrons, and these troops are capable of providing security augmenting for both home station and deployed operations.

Italy: *Battaglione Fucilieri dell’Aria*

In recognition of its increasingly expeditionary character since the 1991 Gulf War and in response to the defense minister’s planning guidelines for 2002–2003, the Italian air force moved to create a specialized unit to support its FP and STO programs.⁹⁰ In May 2004 the *16° Stormo Protezione delle Forze* (16th Force Protection Wing) was constituted with an antiaircraft defense component and a ground de-

fense component—the latter being assigned to a battalion of the newly created *Fucilieri dell’Aria* (Riflemen of the Air). This unit and its air force riflemen share a common heritage with the “*Battaglione Loreto*” (Loreto Battalion) of the Second World War, whose job it was to occupy enemy airfields and defend friendly ones.⁹¹

The primary missions of the new *fucilieri* are the ground defense of air force installations and assets outside of Italy and the recapture of any areas that fall under enemy control. The *fucilieri* are not mandated to conduct routine security duties at bases in Italy, although they may be employed in support of domestic operations in cases of “extraordinary necessity and urgency.”⁹² Essentially, their main task at home station is to train and prepare for deployment.

The ground defense battalion is divided into three companies, comprising about 300 troops. The Italian air force concept of operations for deployed ABD is to use three concentric rings of protection: the outermost ring, extending well beyond the airfield, is the responsibility of land forces or special forces; the intermediate ring, from the base perimeter out to about six kilometers, is assigned to the *fucilieri*; and the innermost ring, within the base perimeter, is assigned to local unit personnel.⁹³ Within their area of responsibility, the *fucilieri* are primarily concerned with countering the threats posed by small military forces, terrorists/saboteurs, and standoff weapons (mortars, MANPADS, etc.). The *fucilieri* seek to mitigate the vulnerability from these threats through the integrated use of patrolling, checkpoints, observation posts, and strong points, and they also provide a security response force for incidents with the inner perimeter that are not within the purview of the police or special forces (e.g., hostage taking).

Fucilieri training comprises three months of air-mobile infantry training, followed by a further period of on-the-job training. During the latter phase, particular attention is paid to civil-military cooperation (CIMIC) practices to ensure that good rapport is established with persons living in the vicinity of deployed airfields. Select personnel are also trained in explosive ordnance reconnaissance and disposal in order to assist with postattack recovery activities. The *fucilieri* are trained and equipped with a number of infantry support weapons, including hand grenades and light, medium, and heavy machine guns (5.56 mm, 7.62 mm, and .50 mm caliber). Members of the *Fucilieri dell’Aria* began deploying soon after the initial complement of troops was fully trained. Since 2005, *fucilieri* from the *16° Stormo Protezione delle Forze* have deployed to protect an Italian air force

utility helicopter squadron at Kabul International Airport and continue to protect Camp Arena, the forward support base in Herat.

United States: United States Air Force Security Forces

The US Army Air Forces gave little thought to creating robust air base defenses until early 1942, when their British allies were implementing the lessons learned from Crete by creating the RAF Regiment. In February of that year, the US Army chief of staff approved the establishment of up to 296 air base security battalions comprised largely from 53,000 black soldiers. Designed to defend against local ground attacks, these battalions were trained in infantry tactics and equipped with light armored vehicles, 37 mm guns, 75 mm field guns, and a variety of medium and heavy machine guns. However, the expected ground threat did not materialize (except in China in 1944–1945), and many of the battalions were quickly disbanded as the Allies gained control of the air and ground in Europe. At the end of the war, all remaining security battalions were inactivated.

The newly independent USAF quickly began rebuilding its ground defense forces at the outset of the Korean War in 1950, expanding its air police establishment from 10,000 to 39,000 and equipping it with armored cars and infantry support weapons. However, the USAF lacked any coherent tactical ground defense doctrine until March 1953, just a few months before active hostilities ended.⁹⁴ Although North Korean forces largely ignored air bases as key targets, the conflict exposed the first signs that US Army and USAF priorities did not always coincide regarding ABD.⁹⁵

Air bases once again became prime targets during the Vietnam War, with sapper and rocket attacks emerging as the favorite modus operandi for Viet Cong guerrilla forces.⁹⁶ In the early stages of the war, the external defense of US air bases was a South Vietnamese responsibility, with USAF security police concentrating on internal base security. However, South Vietnamese airfields had inadequate fencing, local troops were notoriously poor at controlling access, and the USAF security police had too few resources themselves.⁹⁷

On 1 November 1964, a seminal event took place that reshaped USAF thinking on ABD. Viet Cong forces infiltrated to within 400 meters of the Bien Hoa air base perimeter and set up six 81 mm mortars. In a 20-minute period they fired 83 rounds onto the airfield,

destroyed five B-57 bombers, heavily damaged eight more, and lightly damaged a further seven. The guerrillas slipped away without losses.

When South Vietnamese defenses proved inadequate, the USAF turned to the US Army for assistance. However, as Brig Gen Raymond Bell explained, “Throughout the Vietnam conflict, the Army was but a casual participant in protecting Air Force bases. In August 1965, for example, Lt Gen John L. Throckmorton said Army troops would not secure air bases. There were not enough soldiers for the mission. In December 1965 Gen William Westmorland reiterated the Army stand. He felt that every US military member, regardless of service, must be prepared to engage the enemy in combat. The result was that no Army troops were ever completely dedicated to the task.”⁹⁸

From 1964 to 1973, the North Vietnamese Army and Viet Cong forces attacked USAF bases 475 times, destroying 99 aircraft and damaging another 1,170. According to statistics compiled by Vick, more US aircraft were destroyed by air base ground attacks than by North Vietnamese MiGs in the air (99 compared to 62).⁹⁹ This significant threat, and the US Army’s reticence to provide the required level of protection, led the USAF to create combat security police squadrons equipped with infantry training, armored vehicles, and heavy support weapons. This culminated under the “Safe Side” program in the creation of the 82nd Combat Police Wing with three assigned squadrons, each with 21 officers and 538 Airmen. These specialized security police squadrons were manned and equipped similarly to Army infantry battalions but trained specifically for the air base ground defense mission.

From the mid-1970s to the end of the Cold War, installation security and passive defense became the focus, as the USAF concentrated on protecting its European bases from infiltration by Soviet *Spetsnaz* special forces and attack by surface-to-surface missiles. However, in the wake of Vietnam, senior USAF leaders had finally recognized the need to maintain a viable air base ground defense capability, and new security police doctrine, training, and equipment was adopted. Unlike in previous wars, the USAF was generally well-prepared for the ground defense challenges posed by operations from Grenada and Panama to Desert Storm and Allied Force.¹⁰⁰ Just as senior leadership commitment to air base ground defense began to wane once again in light of post-Cold War downsizing, the June 1996 bombing of the USAF’s Khobar Towers barracks in Dhahran, Saudi Arabia, propelled force protection back to the forefront of USAF thinking.¹⁰¹

In light of the Khobar Towers attack and the emerging focus on air expeditionary forces, the Air Force chief of staff decided to radically reorganize the USAF security apparatus. In 1997 the law enforcement, security, and combat arms training career fields of the security police were merged into a single new “Security Forces” career field. At the same time, the new Air Force Director of Security Forces had two new organizations at his disposal: the Force Protection Battlelab, tasked with identifying and validating new FP concepts, doctrine, and equipment; and the 820th Security Force Group, heir to the Vietnam-era 82nd Combat Police Wing. It was renamed the 820th Base Defense Group (BDG) in October 2010. While comprised primarily of security forces personnel, the 820th BDG is a composite unit that also includes specialists from the Office of Special Investigations, civil engineering, intelligence, communications, logistics, administration, and medical career fields. The 820th “provides a highly-trained, rapidly-deployable ‘first-in’ force protection capability” in support of USAF missions worldwide.¹⁰²

The security forces career field underwent a second round of transformation during the last decade to better deal with the realities of Air Force operations in the nonlinear battlespace, as typified in Afghanistan and Iraq. In so doing, the career field moved further away from the Cold War model of forces postured primarily for home-station law enforcement and internal security duties to one postured primarily for expeditionary FP operations including ABD operations outside of the airfield perimeter.

A New Air Base Ground Defense Model for Canada

Force Protection remains of paramount importance, second only to mission success.

—General R. J. Hillier, Chief of Defence Staff

Despite a decade and a half of activity, Canada’s air force has yet to find fully workable solutions to its post-Cold War expeditionary force protection shortcomings. This section explores the problems inherent in Canada’s past and current ad hoc approaches to air base ground defense, analyzes some of the key lessons learned and best practices of our principal allies, and proposes a “third option”—the creation of a specialist air force ground defense occupation. Based on

the approaches of our allies, this section then lays out some general characteristics and capabilities that such a specialist occupation should have in order to best protect Canada's air force against the postulated ground threats identified earlier.

Current Plans and Problems

The newly developed AFEC CONOP, introduced above, envisions expeditionary operational-support elements deploying with a force protection commander (MP captain or major) and an ASF consisting of one or two 13-person squads of MP personnel and a small number of CBRN specialists. This modest ASF would be responsible for close/integral security, policing support, and CBRN detection and monitoring within the close defense area (the CDA comprises the airfield, including all operational, administrative, and accommodation facilities, and is normally located inside a perimeter fence). The ASF would have only a very limited capability to assist with ground defense operations inside the base perimeter, and a more robust airfield defense force (ADF) would be assigned to patrol and secure the close approach area (CAA) immediately outside the base perimeter as well as the patrol and surveillance area (PSA) encompassing the MANPADS and standoff weapon footprints. The AFEC CONOP states that all FP elements must be capable of 24/7 operations and able to work with any CF aircraft fleet. However, it also dictates that air expeditionary wings will only deploy into low to medium ground-threat environments. Given the projected asymmetric threats covered earlier, this constraint seems extremely unrealistic. With this limitation in place during Canada's recent combat operations in Afghanistan, Canada's air force would have been precluded from deploying platforms like the Chinook helicopter to Kandahar Airfield, where standoff weapon attacks were a regular occurrence. The CONOP also points out that the air force is not able to generate its own ADF to conduct persistent defensive operations outside the airfield perimeter in a medium-threat environment and will have to rely on army forces for this mission.¹⁰³

Aside from the threat-level issue, the AFEC CONOP has several serious shortcomings: a continued reliance on MP-based ASF units without any increase to main operating base (MOB) MP establishments from which to generate them, ASF elements with too few troops to be fully effective, and an untested expectation that the army will dedicate sufficient external ground defense forces whenever required.

Military Police and Air Base Security

The concept of using MP personnel for integral and close security support at air bases has some merit. These personnel have significant expertise in the areas of personnel security, information security, and physical security and remain the force of choice for countering the “traditional” security threats of espionage, subversion, criminality, and low-level sabotage. Their specialized law enforcement and custodial skills are particularly useful when the arrest and detention of “unlawful combatants” or the collection and handling of prisoners of war are anticipated. Furthermore, these personnel provide commanders with a policing capability that is essential for the maintenance of good order and discipline. There is little argument that military police are the ideal personnel to coordinate and carry out routine security duties at MOBAs in Canada, since domestic security operations must closely follow the rule of Canadian law.

Notwithstanding, MP units do not have the required numbers, training, or specialized equipment needed to adequately counter all the asymmetric threats that are likely to characterize the expeditionary environment for some time, such as vehicle-borne IED attacks, penetrating attacks, and standoff weapon attacks. Although MPs can be organized, trained, and equipped for the inside-the-wire ASF mission, it comes at a cost. Since publication of the *Report of the Special Advisory Group on Military Justice and Military Police Investigation Services* in March 1997 (following the *Commission of Inquiry into Activities of the Canadian Airborne Regiment in Somalia*), the military police branch set out to professionalize its law enforcement and investigative functions. The result is an occupation that is now focused on highly technical and specialized police skills. These skills are also very perishable. MPs who are employed away from policing duties for extended periods of time, such as a posting to a standing ASF unit, will require retraining and recertification in order to return to policing duties later.

The AFEC CONOP sees most ASF elements being generated from the three regular force (active duty) MP squadrons within the Air Force MP Group, using a managed readiness plan (MRP) approach. Essentially, each of these squadrons will be responsible for maintaining one high-readiness ASF squad, a second squad in training, and a third reconstituting from its last deployment. There are plans for only one standing ASF squad with no home station duties, and this will be

part of the new 2 Air Expeditionary Squadron (2 AES) being set up in Bagotville, Quebec. However, the 2 AES ASF Squad will focus on theater activation tasks, and its troops will reconstitute and hand over to one or more MRP ASF squads once the air expeditionary wing's activation is complete.¹⁰⁴ This almost total reliance on managed readiness runs counter to how most of our principal allies approach expeditionary FP. The British, Australian, German, and Italian air forces all rely on dedicated high-readiness ground defense units that train and deploy as a coherent whole. The US, French, and Dutch air forces currently use a hybrid system with some dedicated high-readiness units for theater activation and high-threat operations (e.g., 820th BDG, CPA 20, and OGRV platoons), and other smaller task-tailored force packages generated from MOB units combined into expeditionary units for follow-on operations.

However, even the USAF security forces career field is moving away from the latter force-generation model as part of its recent transformation effort. The following passage from the 2006 *Security Forces Transformation Strategic Plan* frames the scope of the problem from the USAF point of view:

Today's Security Forces are garrison-centric, manned and operated on Cold War principles and practices. Most Security Forces are home-station focused . . . on law enforcement, and remain threat-based (i.e., still overwhelmingly force-on-force, and not adapting to non-linear battlefields and non-state actors). Many "shooters" are performing tasks that don't support combat capabilities and as a result training has suffered. This orientation has placed a high degree of stress on the force operating in a new national security environment of world-wide asymmetric threats and expeditionary combat operations with increasingly higher deployment requirements.¹⁰⁵

To overcome these issues, the SF career field has created a new squadron construct based on three flight-sized elements in tiered readiness: one training for deployment, a second deployed, and a third reconstituting after deployment. During its reconstitution phase, each SF flight augments a civilian-centric "air provost" element to deliver police and security services at home station. However, this model would not work in Canada, since domestic law effectively precludes the use of armed contractors or Department of National Defence civilians to form the nucleus of a garrison air provost element. Furthermore, these flight-sized deployable SF elements are far more robust and flexible than the squad-sized ASF elements envisioned under Canada's AFEC CONOP.

Another major factor weighing against an MP-centric expeditionary FP solution is the ongoing requirement to generate MP personnel for deployed general support (GS) tasks—those that support a joint CF task force as a whole, rather than any particular component. The very limited number of MPs within the air force creates a force generation dilemma. Most GS MP tasks must be apportioned to one or more of the three environmental provost marshals since they command the majority of general purpose (i.e., nonspecialised) MP personnel within the CF. The air force provost marshal, who commands the Air Force MP Group and its three subordinate squadrons, must generate MPs to fill these GS MP tasks as well as maintaining the nine aforementioned MRP ASF squads.

Despite concerted efforts in the past, the Air Force MP Group has been unable to obtain the manpower increases required to make the ASF concept fully viable. With only 280 regular force MP positions throughout the Air Force MP Group, it will be extremely difficult to adequately support all of the security and policing functions at the MOBs in Canada, provide MPs for GS taskings, and sustain one or two deployed ASF squads at an air expeditionary wing without force generation assistance from outside the group. The situation becomes even more untenable if a second air force line of operation is contemplated. In 1999, a comprehensive study for the CAS determined that 95 new air force MP positions would be the absolute minimum required to maintain a squadron-sized standing ASF capability. Although the CAS supported the study findings, the Canadian Forces provost marshal (CFPM) and vice chief of the Canadian Defence Staff (VCDS) of the day disagreed with the air force's vision of the MP role in deployed FP, particularly as it related to ground defense tasks that could be performed by army elements. The VCDS subsequently directed that all implementation action cease.¹⁰⁶ Later planning in 2006 determined that 572 MP positions would be required within the air force to support the earlier iteration of the AFEC, which featured 11 operational support squadrons rather than the current seven smaller operational support elements.¹⁰⁷

To its credit, the air force MP community stepped to the plate in the mid-1990s, during a period of rapid downsizing and extreme fiscal restraint, and developed the ASF concept to a point that gave the air force at least a basic “inside the wire” security and defense capability. Military police remain a very valuable resource and key component of any FP program. However, this is not the best occupation to

carry out the critical air base ground defense mission outside the base perimeter. As pointed out in a 2005 National Defence Headquarters report reviewing the functions of the MP Branch, there is a strong internal and external perception that this branch has spread itself too thin, raising the specter that MPs might become the “jack of all trades, master of none.”¹⁰⁸

Army Combat Arms and Air Base Ground Defense

If the military police are not best positioned to defend Canada’s airfields from contemporary asymmetric threats, then the instinctive default is to formally assign this task to army combat arms units. This has been done in the past, most notably on the home front during the Second World War. One might also assume that the CF’s unified nature makes the debate largely academic since the “army” and “air force” are essentially artificial constructs in Canada. However, while the CF may be a single unified service on paper, the day-to-day reality is much different. The air and land components of the CF have, for a variety of very good reasons well beyond the scope of this paper, adopted dissimilar cultures and priorities. These differences conspire to reduce the long-term effectiveness of an army solution to the ABD problem.

In 2002, once it became clear that a larger air force MP establishment was unlikely, the air force provost marshal of the day recommended that the ADF role be formally included in the defense planning guidance as a standing army task.¹⁰⁹ However, for reasons not clear from available records, this did not immediately happen. Although the army did assist the air force with airfield defense and security forces at Camp Mirage in the United Arab Emirates, a relatively benign threat environment, it did so primarily by forming ad hoc D&S platoons of reserve infantry. It was not until 29 May 2008, at a joint capability review board, that the VCDS assigned the ADF mission to the army. However, since the end of the Second World War, the army’s willingness to commit regular-force combat arms units to defend air bases in a higher-threat environment while concurrently supporting a land battle remains untested and uncertain.

The lack of a dedicated army ADF in the early part of the millennium made it exceedingly difficult for Canada’s air force to train and to exercise realistically for higher-threat operations. This problem became particularly acute when the air force started conducting regular “Wolf Safari” exercises in order to practice operation under NATO

Allied Command Operations (ACO) force standards. The lack of army ground defense participation, despite air force requests, severely diminished the ability of air force units to realistically practice operations in the contemporary threat environment. The findings of the Canadian Forces Aerospace Warfare Centre umpire staff after a Wolf Safari exercise in 2007 are particularly revealing about the extent of this problem and the search for solutions:

A [land force] D&S unit was not available for the Ex[ercise] nor does it appear likely that a D&S unit will be provided for [the upcoming NATO] TACEVAL [Tactical Evaluation]. An Air Force solution must be devised, which is sustainable beyond the TACEVAL. A long-term solution for Air Force deployments must be given the highest priority. At least three possible solutions are evident:

- Expand the tasks, [training,] size and [equipment] of the ASF
- Speed up establishment of a RAF Regiment style unit
- Form ad hoc ADF unit
- Ignore the requirement for Active Def[ence]¹¹⁰

The army's general philosophy on rear area security (RAS) is summed up in a doctrinal notation which states that the "local defence of units, installations and personnel within the rear area is a common responsibility of all elements."¹¹¹ Although armored reconnaissance forces may be tasked with RAS operations as a primary mission, the army essentially expects that all units, even combat service support units, can provide for their own basic defense. Land force doctrine also expressly states, "Reconnaissance forces can conduct a RAS task if it is the only task allocated during an operation. RAS as a secondary task cannot be conducted concurrently with other operations/tasks due to resource limitations."¹¹²

Since armored reconnaissance assets are critical to the army's IS-TAR system, they will "not normally be available for this task during high tempo operations."¹¹³ Regular force infantry units are also in very high demand and unlikely to be made available in sufficient numbers for RAS in general, and ABD operations in particular, if the army is heavily engaged in other combat operations. Given the limited size and operational tempo of Canada's land forces since the 9/11 terrorist attacks, it is fully understandable why the army is so reluctant to commit the ABD mission to its doctrine.

The UK and US experiences provide a compelling argument that even when land forces are doctrinally responsible for the external protection of air bases, a nation's army will usually be overstretched

when air force ground defense needs are at their highest. The RAF's experience with the British army in Palestine in the 1930s and during the first two years of the Second World War forced it to take control of its own ABD destiny. The USAF reached the same conclusion, culminating in 2004 with the abrogation of an agreement signed 19 years earlier which had made the US Army responsible for air base ground defense operations "outside the boundaries of designated USAF bases and installations."¹¹⁴ This agreement was never fully implemented or carried out to the USAF's satisfaction and became a constant source of frustration for deployed USAF commanders who remained responsible for the security of all assigned resources but had no control over the ground defense forces operating immediately outside of their expeditionary airfields. The recent security-forces transformation initiative aimed to reposition this career field away from a Cold War garrison-centric focus in order to take more responsibility for the external air base ground defense mission.

Allied Best Practices: Air-Mindedness

The RAF has long recognized the value of cultivating "air-mindedness," an approach that shapes the conduct of air operations and training through a well-developed understanding of the essential nature and effects of airpower. More than just the ability to operate safely around aircraft, air-mindedness requires a comprehensive grasp of the unique mind-sets, capabilities, command and control arrangements, and threats involved in air operations. Air-mindedness is not taught as much as it is inculcated. RAF doctrine is clear on the link between air-mindedness and successful force protection: "It is . . . important that FP for Air operations is delivered by Air Minded Force Elements and individuals with doctrine, structures and equipment to meet the task, supported by thorough training and experience in focussing on the delivery of Air Power through formal and continuing training, exercises, evaluations and operations."¹¹⁵

The continued maintenance of the RAF Regiment is, in large part, driven by the RAF's desire to ensure that its ground defense operations and training programs are carried out by air-minded specialists who share the same operational culture as those under their protection and who have a long-term stake in the outcome of their activities. Army troops temporarily assigned to the ABD role will never

develop the same level of air-mindedness as indigenous air force ground defense specialists.

Resident Expertise

All of the specialist security and ground defense organizations identified above are designated as the lead agent for their respective air force FP programs. Unlike Canada's air force, where the military police have only rudimentary ground defense training and capabilities, these allied organizations can actually speak with authority about this critical area of FP. By not fully relying on other services to provide ABD forces, these organizations are able to build a critical mass of expertise that can then be tapped to produce tactical- and operational-level advice and doctrine in support of air force-unique operations. Without a specialist ground defense occupation, it will be difficult if not impossible for Canada's air force to maintain full control over its FP destiny.

Many of the surveyed ground defense organizations are also responsible for conducting individual readiness training and evaluations in the areas of ground combat skills, small arms, STO, and CBRN defense. This role provides employment opportunities for ground defense personnel outside of high-readiness units, and it alleviates the burden on other nonspecialist occupations in filling readiness training billets. The RAF Regiment takes this one step further by developing some of its personnel as CBRN defense specialists in addition to their combat infantry role. A similar approach in Canada would help alleviate the ongoing challenges of manning the wing readiness training flights with appropriately qualified and experienced personnel and could help rejuvenate the air force's flagging operational CBRN defense capacity.¹¹⁶

The Ability to Operate "Outside the Wire"

British, Australian, and US doctrine recognizes that in the absence of dedicated army or HN resources air forces must be able to mount credible ground defense operations outside the base perimeter within the critical standoff weapons footprint.¹¹⁷ For example, US Joint Publication 3-10 provides deployed USAF commanders with the flexibility to negotiate air base boundaries with the joint force commander in order to adequately counter standoff weapon threats. This joint doctrine enables Air Force security forces operations in what the USAF

calls the “base security zone.”¹¹⁸ Similarly, the RAAF doctrinal construct provides for a “patrol and surveillance area,” extending at least 5 km and up to 40 km from the airfield. In higher-threat environments when sufficient army forces are not available, RAAF airfield defense squadron personnel aggressively patrol and monitor this area. The RAF Regiment also seeks to dominate what it calls the “ground defense area,” which routinely extends 10–15 km or more from the airfield. This is done through a combination of foot and vehicle patrolling, area surveillance, and the periodic occupation of key ground.

Trained, Organized, and Equipped to Fight

The allied air force ground defense organizations surveyed in this paper all have the requisite training, organization, and equipment to fight credibly in the defense of their air bases. All of these units are equipped with support weapons that provide integral direct fire and in some cases indirect fire capability (e.g., medium and heavy machine guns, sniper rifles, mortars, grenade launchers, and light anti-armor weapons). Some organizations, including the RAF Regiment, RAAF airfield defense guards, and USAF security forces have lightly armored vehicles for QRF, patrolling, and convoy escort duties. Essentially, all of these organizations represent an infantry capability integral to the air force. However, unlike army combat formations, the organization, training, and equipment of these air force units are specifically optimized for defensive FP operations rather than offensive combined arms operations.

A Third Option for Canada

Historically, the debate in Canada over responsibility for air base security and defense has played out between the RCAF police and CF military police on the one hand and the Canadian army and CF land component on the other. Little serious effort has been dedicated to exploring a third approach that a number of our closest allies have adopted: a dedicated air force ground defense occupation. Canada had already benefited from such forces in past conflicts. During the Second World War, the RAF Regiment bore the brunt of defending the RCAF’s tactical airfields in Europe after the Normandy landings. More recently, during the Kosovo air campaign, Canadian air forces operating from Aviano, Italy, were protected by a large number of USAF security forces. Until 2011, CF personnel operating from Kan-

dahar Airfield continued to benefit from the RAF Regiment's aggressive patrolling and surveillance activities around that base.

Given the CF's renewed interest in force protection, the shortcomings of past and current ad hoc approaches to ground defense, and the projected operating environment, the time is right for Canada to follow the lead of its principal allies and seriously explore the creation of a specialist air force ground defense occupation. Rather than investing further in an MP-centric "inside the wire" only solution or trying to rely on the army with its "on again, off again" attitude toward ABD, the air force should take control of its own destiny and create an organization to provide professional ground defense forces in higher-threat environments and to act as a specialist FP training cadre. With such an occupation, Canada's air force could finally rest assured that its bases would be adequately protected regardless of the availability and capability of the army or a host nation. Canada's air force could then become a net contributor to coalition ABD efforts, rather than having to cede all the "heavy lifting" of our FP to others.

Table 2.5 analyzes the size of allied air forces' security and defense occupations in comparison to overall military strength. Based on an average ratio of 3.8 percent, Canada should have approximately 646 troops dedicated to this role.

Mission and General Characteristics

The primary mission for an air force ground defense occupation should be to protect CF aerospace power from ground-based threats in order to support continued air operations. It should have no law enforcement role since this properly remains the responsibility of the military police occupation. A ground defense occupation should complement rather than compete with existing MP resources. MP personnel should remain the "force of choice" for domestic air base security and deployments in low-threat environments, whereas a new ground defense occupation should provide more robust FP capabilities for expeditionary operations in medium- to high-threat environments.

Table 2.5. Relative size of allied air force ground defense forces

| Air Force | AF Military Personnel | | | AF Ground Defense Forces | | | GDF as % of AF Total |
|---|-----------------------|----------------------|---------|--------------------------|--------------------|--------|----------------------|
| | Regular | Reserve | Total | Regular | Reserve | Total | |
| United States | 347,400 ^a | 285,555 ^a | 632,955 | 24,000 ^e | 9,000 ^e | 33,000 | 5.2 % |
| Germany | 51,400 ^a | 65,950 ^a | 117,350 | 1,800 ^d | 680 ^e | 2,480 | 2.1 % |
| United Kingdom | 50,010 ^a | 40,660 ^a | 90,670 | 2,500 ^f | 500 ^f | 3,000 | 3.3 % |
| France | 63,600 ^a | 4,300 ^a | 67,900 | 4,950 ^g | 595 ^g | 5,545 | 7.8 % |
| Italy | 44,000 ^a | 1,152 ^a | 45,152 | 350 ^h | u/k | 350 | .8 % |
| Canada | 14,500 ^a | 2,600 ^a | 17,000 | n/a | n/a | n/a | n/a |
| Netherlands | 11,050 ^a | 5,000 ^a | 16,050 | 400 ⁱ | 250 ⁱ | 650 | 4.1 % |
| Australia | 13,249 ^b | 2,400 ^b | 15,649 | 320 ⁱ | 200 ⁱ | 520 | 3.3 % |
| Average | | | | | | | 3.8 % |
| Notes | | | | | | | |
| ^a International Institute for Strategic Studies, <i>The Military Balance 2006</i> (London: Routledge, 2006), 28–29, 37, 68, 76, 84, 88, and 109. ^b Department of Defence, Government of Australia, <i>Portfolio Budget Statements 2006–07</i> (Canberra: Defence Publishing Service, 2006), 92, http://www.defence.gov.au/Budget/06-07/pbs/2006-2007_Defence_PBS_12_full.pdf . ^c Rebecca Grant, “The Security Forces Rewrite,” <i>Air Force Magazine</i> , January 2006, 58. Although USAF Security Forces personnel have a secondary law enforcement (MP) role, they are all trained and equipped for ground defense duties. ^d Interpolation from various sources. ^e Government of Germany, <i>Informationsdienst für Reservisten & Reservistinnen 2/2006</i> (Bonn: Führungsstab der Streitkräfte, 2006), 4. ^f Royal Air Force, Government of the United Kingdom, “RAF Regiment & RAF Reserves,” n.d., http://www.armedforces.co.uk/raf/listings/l0041.html . ^g Author’s correspondence with European Air Group. ^h Aeronautica Militare, Government of Italy, “Dopo Sessanta Anni I Nuovi Fucilieri Dell’Aria Dell’Aeronautica Militare,” http://www.aeronautica.difesa.it/SitoAM/Default.asp?idNot=11469&idente=13 . This number included three 100-man companies, plus an estimated 50 additional personnel for staff and training overhead. ⁱ Interpolation from various sources. This includes all KLu personnel involved primarily with security and ground defense functions (OGRV platoons, Bewaking personnel, dog handlers, and Stinger troops). ^j Author’s correspondence with RAAF GRDEF officer. Reserve total does not include the personnel of the Reserve Air Base Defence Protection Flights, but only ADG tradesmen and GRDEF officers. | | | | | | | |

A governance framework and detailed organizational construct for such an occupation is beyond the scope of this chapter. However, some general characteristics can be derived from the best practices of our allies. Therefore, the principal roles of this occupation should include

- conduct of airfield patrolling, screening, and area surveillance operations (including off-base operations within the standoff weapon footprint whenever army, coalition, or HN forces are insufficient to the task);
- provision of a local QRF to counter any actual or attempted ground attacks against the air base;
- point defense of vital point and critical assets, in conjunction with MP and auxiliary security forces;
- operation of high-risk vehicle checkpoints, in conjunction with MP and auxiliary security forces;
- provision of armed security escorts for high-risk off-base convoys;
- provision of countersniper operations;
- delivery of air force predeployment/readiness training (including ground combat skills, small arms, and CBRN defense); and
- provision of FP and ground defense advice to commanders.

Possible secondary roles for this occupation could include assisting MP and auxiliary security forces with access control, base security, and vital point security during expanded domestic security postures, and the provision of light infantry-type forces in support of domestic operations (e.g., aid to civil power, homeland security operations, etc.).

General Capabilities

In keeping with the lessons and best practices of our allies, a specialist ground defense occupation must be properly trained, armed, and equipped to deal with both asymmetric and conventional military threats. In order to effectively find, fix, deter, delay, and ultimately defeat these ground threats, the following general capabilities would be required:

- **Mobility.** A high degree of mobility is essential to successfully conduct ground defense operations within and around air bases.

Contemporary threats require that the vehicle fleet include light armored vehicles mounting automatic weapons for QRF, convoy escort, and external patrolling duties in high-risk areas. More heavily armored vehicles can actually be counterproductive, isolating ground defense personnel from the indigenous populations surrounding air bases and interfering with “hearts and minds” activities.

- **Fire support.** Ground defense forces must have sufficient organic direct fire support to defeat or delay robust ground threats until heavier HN or army QRF/RAS forces can engage them. Heavy machine guns and area suppression weapons (such as automatic grenade launchers) are particularly useful in this role.
- **ISTAR.** Intelligence, surveillance, target acquisition, and reconnaissance capabilities are all critical enablers of ABD. Ground defense forces must have sufficient organic surveillance and target acquisition equipment to be able to detect and engage ground threats in day and night conditions. Strong links must be made with integral, adjacent, and higher formation ISTAR elements in order to provide a complete operating picture and facilitate intelligence-driven operations.
- **Military working dogs.** Patrol dogs and explosives detection dogs are a critical force multiplier that can also provide a strong psychological deterrent against certain threats. Given the absence of a well-developed military police MWD capability in Canada, a ground defense occupation would be a logical place to develop such a program.

A new specialist air force ground defense occupation would have a number of useful side effects. For example, this trade could considerably broaden the pool of air force candidates for special operations units—Joint Task Force 2, the Canadian Special Operations Regiment, and the Canadian Joint Incident Response Unit (CBRN)—enhancing the joint nature of these units. Ground defense personnel would return to the air force after serving with these organizations with a greatly increased depth of FP knowledge. This occupation would be an ideal choice to provide ground extraction teams if Canada’s air force ever decides to create an indigenous combat search and rescue capability. Finally, personnel who later decide to remuster from this occupation to other air force trades would bring with them

knowledge and skills that could greatly benefit unit-level FP activities and programs.

Conclusion

In the future, Canada's air force will operate in an environment increasingly characterized by volatility, uncertainty, complexity, and ambiguity. The air force will deploy more frequently into dangerous and unpredictable areas in order to conduct a wide range of expeditionary operations, ranging from humanitarian assistance and peace enforcement to COIN operations and coalition war fighting. Across the operational spectrum, ground threats will not always be fully defined, but adversaries will almost certainly seek an asymmetric advantage in order to counter the technological superiority of Western air forces. This, combined with the inherent fragility and vulnerability of air forces on the ground, will ensure that air bases remain targets of choice for conventional military forces as well as combative nonstate actors.

From the Second World War to the present, Canada has adopted a number of ad hoc solutions to air base security and ground defense to address its specific short-term needs, frequently assuming that the army or its allies will do the heavy lifting when more robust ABD forces are required. Despite occasional bursts of interest from the army, Canada's long-term commitment to air base ground defense has been lacking. On the other hand, while air force MPs have often been used successfully to counter the "traditional" security threats of criminality, espionage, subversion, and low-level sabotage, they have generally proven to be insufficiently trained, ill-equipped, and under-resourced to carry out the wider air base ground defense mission.

A survey of our principal allies shows that Canada is out of step in the important area of air base ground defense. The air forces of Britain, France, Germany, Australia, the Netherlands, Italy, and the United States have all created dedicated security and defense occupations and associated expeditionary units in order to provide robust organic force protection during operations. Most of these career fields also act as an air force readiness cadre, responsible for CBRN defense, small arms, and combat skills training.

Canada's contemporary air force expeditionary plans continue to be based on an MP/ASF model for inside the wire security, supple-

mented by army forces for external air base ground defense in higher-threat environments. However, the necessary increase to MP squadron manning establishments, in order to make the ASF concept fully viable, is unlikely to materialize. For its part, the army has been slow to embrace the formalization of the ABD mission and has still not included it in land force doctrine. Furthermore, the high operational tempo of combat arms units on other high-priority missions calls into question the likelihood that adequate army forces will be available for the ABD role when they are needed most.

Given the CF's current focus on force protection, considering the limitations of past approaches to air base ground defense, and looking at the best practices of our allies, the time is right for Canada's air force leadership to embrace the creation of an organic ground defense occupation. An air-minded ground defense trade, trained and equipped as specialist light infantry and capable of operating both inside and outside the base perimeter against contemporary threats, would greatly help to mitigate the risks posed to air bases, air assets, and air force personnel during expeditionary operations. Air base ground defense is a critical enabling capability that requires a specialized military occupation to ensure sufficient operational readiness, deployability, and sustainment. Ad hoc is no longer good enough.

Notes

1. Peter Gizewski, "The Future Security Environment: Threats, Risks and Responses," *International Security Series*, March 2007, 2–3, 7, accessed 16 January 2013, <http://www.opencanada.org/wp-content/uploads/2011/05/ISS-Future-Security-Environment.pdf>.

2. National Intelligence Council, *Global Trends 2015: A Dialogue about the Future with Nongovernmental Experts* (Washington, DC: DI Design Center, 2000), 49.

3. Gizewski, "Future Security Environment," 3–5.

4. Rick Hillier, "NATO Transformation: Canada's Contribution," *On Track* 10, no. 4 (Winter 2005): 6–8, accessed 13 April 2007, <http://www.cda-cdai.ca/cdai/images/ontrack10n4.pdf>.

5. Patrick Henrichon, "Protecting the Canadian Forces against Asymmetric Threats," *Canadian Military Journal* 3, no. 4 (Winter 2002–2003): 11.

6. National Defense University, US Department of Defense, "Strategic Leadership and Decision Making: Preparing Senior Executives for the 21st Century," accessed 28 April 2007, <http://www.au.af.mil/au/awc/awcgate/ndu/strat-ldr-dm/cont.html>.

7. Ibid.

8. Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4 (1973): 155–69, accessed 29 April 2007, http://www.uctc.net/mwebber/Rittel+Webber+Dilemmas+General_Theory_of_Planning.pdf.

9. National Defense University, "Strategic Leadership."

10. In CF parlance "full spectrum operations" is synonymous with the "three block war" concept first espoused by Gen Charles C. Krulak while he was commandant of the United States Marine Corps.

11. Chief of Defence Staff, Department of National Defence, Government of Canada, *CDS Planning Guidance – CF Transformation* (Ottawa, Ontario: National Defence Headquarters, October 2005), 2.

12. Chief of Defence Staff, Department of National Defence, Government of Canada, A-GA-007-000/AF-004, *Strategic Vectors: The Air Force Transformation Vision* (Ottawa, Ontario: National Defence Headquarters, 2004), 2.

13. Department of National Defence, Government of Canada, B-GA-400-000/FP-000, *Canadian Forces Aerospace Doctrine* (Trenton, Ontario: Canadian Forces Aerospace Warfare Centre, 2010).

14. Department of National Defence, Government of Canada, "Air Force Expeditionary Capability (AFExC): Concept of Operations" (draft paper, Canadian Forces Aerospace Warfare Centre, Trenton, Ontario, 21 March 2007), 3.

15. Department of National Defence, Government of Canada, *Air Force Expeditionary Capability Concept of Operations*, Revision 1, January 2012 (Winnipeg, Manitoba: 1 Canadian Air Division, 1, 6).

16. Department of National Defence, *Canadian Forces Aerospace Doctrine*, 27–28.

17. Giulio Douhet, *The Command of the Air*, translated by Dino Ferrari (New York: Coward-McCann, Inc., 1921), 53–54.

18. Sal Sidoti, *Airbase Operability: A Study in Airbase Survivability and Post-attack Recovery*, 2nd ed. (Canberra, Australia: Aerospace Centre, 2001), 2–3.

19. Notwithstanding the unlikely scenario of nonstate groups operating military aircraft, determined terrorists groups could conduct air attacks using improvised civilian technology. For example, the Liberation Tigers of Tamil Eelam conducted two air attacks on Sri Lankan government air bases using commercial light aircraft modified to drop small bombs during the final year of the Sri Lankan Civil War. Similarly, Hezbollah operates Iranian-supplied remotely piloted vehicles (RPV). During the summer of 2006, a Hezbollah RPV with an improvised explosive warhead was successfully flown into an Israeli warship off the Lebanese coast, severely damaging the ship.

20. David A. Shlapak and Alan Vick, "Check Six Begins on the Ground": *Responding to the Evolving Ground Threat to U.S. Air Bases* (Santa Monica, CA: RAND, 1995), 15–19.

21. Sidoti, *Airbase Operability*, 99–104.

22. Alan Vick, *Snakes in the Eagles Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND, 1995), 9–14. Notable exceptions to this rule are the Soviet capture of the Kabul airport (1979) and the US capture of airports in Grenada (1983) and Panama (1989) for use as airheads. Also, North Korean guerrillas prevented the United States from using the Kunsan airfield for several months during the Korean War.

23. Vick, *Snakes in the Eagle's Nest*, 107.

24. Robert H. Holmes, Bradley D. Spacey, John M. Busch, and Gregory J. Reese, "The Air Force's New Ground War: Ensuring Projection of Air and Space Power through Expeditionary Security Operations," *Air & Space Power Journal* 20, no. 3 (Fall 2006): 42–43.

25. Ministry of Defence, United Kingdom, "Kandahar Air Base: Keeping It Safe (Part 1 of 3)," *Defence News*, 6 Mar 2007, accessed 13 Apr 2007, <http://web.archive.org/web/20080213203257/http://www.mod.uk/DefenceInternet/DefenceNews/PeopleInDefence/KandaharAirBaseKeepingItSafePart1Of3.htm>.

26. Vick, *Snakes in the Eagle's Nest*, 114–57.

27. Christopher Bolkcom, Bartholomew Elias, and Andrew Feickert, "MANPADs Threat to Commercial Aviation" (Washington, DC: Congressional Research Service, March 2004), accessed 14 April 2007, <http://www.ifri.org/files/CFE/CFEBolkcom.pdf>.

28. Christopher Bolkcom, Bartholomew Elias, and Andrew Feickert, *Homeland Security: Protecting Airliners from Terrorist Missiles* (Washington, DC: Congressional Research Service, November 2003), accessed 14 April 2007, <http://fpc.state.gov/documents/organization/26580.pdf>.

29. Chief of the Air Staff, *Chief of the Air Staff Level 1 Strategic Assessment FY 06/07* (Ottawa, Ontario: Chief of the Air Staff, November 2005), 12.

30. *Ibid.*, 9.

31. Department of National Defence, *Army Historical Report No. 3: The Employment of Infantry in the Pacific Coast Defences (Aug 39 to Dec 43)* (Ottawa, Ontario: Canadian Army Headquarters, 1944), 3–4, accessed 17 January 2013, <http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/doc/ahqr-rqga/ahq003.pdf>.

32. Directorate of History, Department of National Defence and the Canadian Forces, Government of Canada, "File 79/429, vol 3: Secret Organization Order No. 3: R.C.A.F. Internal Security-Guards (S.7676)," 9 September 1940, 1.

33. Ronald J. Donovan and David V. McElrea, *A History of the Royal Canadian Air Force Police and Security Services* (Renfrew, Ontario: General Store Publishing House, 2008), 11–15.

34. General Staff, "Appendix 1: Extracts from Tactical Notes on the Defence of Aerodromes," in *Ground Defence of Aerodromes*, microfilm, reel C-5292, 28 March 1942, Army Headquarters Central Registry fonds, Library and Archives Canada.

35. Unfortunately, the reason for this decision is not clear from an analysis of available primary source documentation. The historical notes on the Air Member for Personnel Branch, *Chapter 22: R.C.A.F. Police and Security Services: 1939–1945*, microfilm, RG 74, reel C-421-100-S68, Army Headquarters Central Registry fonds, Library and Archives Canada makes no reference to any deliberations or specific rationales leading to this decision.

36. Department of National Defence, *Army Historical Report No. 3*, 21.

37. Chief of the Air Staff, Memorandum from Chief of the Air Staff to Chief of the General Staff (S.22-1-12 (AMAS)), microfilm, RG24-C-1, reel C-5292, file no. 8920, 7 May 1942, Army Headquarters Central Registry fonds, Library and Archives Canada.

38. G. T. Roach, *Attachment to 11th Group R.A.F. – 20th Apr. 42 to 25th Apr 42*, microfilm, RG24-C-1, reel C-5292, 7 July 1942, Army Headquarters Central Registry fonds, Library and Archives Canada; report on *Aerodrome Defence*, prepared by Lt Col G. H. Rogers, 16 July 1942.

39. Group Captain Sisley, RCAF director of Provost and Security Services, to Col H. G. Reynolds, US Army Air Corps provost marshal, letter, 9 July 1943, 3, RG 24, vol. 18179, file 997-0 pt.3, Air Force Police Activities, Library and Archives Canada.

40. G. F. Stubinski, "History of the RCAF Police and Security Services," in *On Guard for Thee: The Silver Anniversary of the Security Branch*, D. R. Johnson (Winnipeg, Canada: Jostens Canada, 1993), 28–29. In his letter to Col H. G. Reynolds, Group Captain Sisley suggests that a new policy may shortly "result in our being called upon to provide considerable larger numbers of both officers and men for overseas service." What drove this comment is unknown. Evidently it was premature, since the historical record shows that no large numbers of additional RCAF service police were ever sent to Europe.

41. *Allocation of R.A.F. Regiment to T.A.F.*, catalogue ref AIR 37/176, (B.J.28/D.O./D.D.G.D), 2 August 1943, Royal Air Force Operations Records, National Archives, United Kingdom.

42. Breton Greenhous, Stephen J. Harris, William C. Johnston, and William G. P. Rawling, *The Official History of the Royal Canadian Air Force*, vol. 3, *The Crucible of War, 1939–1945* (Toronto, Ontario: University of Toronto Press, 1994), 334.

43. *Ibid.*, 349.

44. John Blake, "Notes on the RCAF Ground Defence Branch" (RCAF Police and Security Historical Group, undated), 1.

45. *Ibid.*, 2.

46. In NATO terminology, active defense comprises any limited offensive action and counterattack necessary to deny a contested area or position to the enemy. Passive defense comprises those measures taken to reduce the probability and minimize the effects of damage caused by hostile action, but without any intention to take the offensive.

47. Royal Canadian Air Force, "Metz, France: 1957—Historical Record—National Archives of Canada: Historical Record 1 Air Division HQ," accessed 4 March 2007, <http://web.archive.org/web/20081201121358/http://www.pinetreeline.org/metz/otherm1/otherm1-13.html>.

48. John Clearwater, *Canada's Nuclear Weapons: The Untold Story of Canada's Cold War Arsenal* (Toronto, Ontario: Dundurn Press, 1998), 27–30. Canada did not own these weapons per se. Under a complicated arrangement the US retained custody of the warheads until the requisite US and Canadian authorities approved their use, at which time the US would transfer them to Canada for tactical employment.

49. *Ibid.*, 277.

50. R. J. Donovan, "Nuclear Security Operations," in *On Guard for Thee: The Silver Anniversary of the Security Branch*, D. R. Johnson (Winnipeg, Manitoba: Jostens Canada, 1993), 33–24.

51. W. H. Welsh, "A Canadian Air Force Regiment," *Canadian Defence Quarterly* 12, no. 1 (Summer 1982): 39.

52. The CIM-10 Bomarc warheads were also returned to the United States in 1972, although nuclear-tipped AIR-2 Genie air-to-air missiles continued to arm CF-101 Voodoo aircraft in Canada until 1984. MP nuclear security units were maintained in Canada until all of these weapons were repatriated to the United States.

53. Sean M. Maloney, *War without Borders: Canada's NATO Brigade in Germany, 1951–1993* (Toronto, Ontario: McGraw-Hill Ryerson, 1997), 288, 299.

54. H. W. Welsh, "The Canadian Forces and Airfield Defence," *Canadian Defence Quarterly* 9, no. 4 (Spring 1980): 19; Welsh, "A Canadian Air Force Regiment," 37–41; and H. W. Welsh, "Base Defence Forces: There Is Much Room for Improvement," *Canadian Defence Quarterly* 16, no. 2 (Autumn 1986): 36.
55. Welsh, "The Canadian Forces," 20.
56. Welsh, "Base Defence Forces," 38.
57. Jane's Information Group, "RAF Regiment Improvements," *International Defence Review* 12, no. 4 (1979): 482.
58. Greg Miller, "Mike' Company and the Persian Gulf," *The Regimental Website of the Royal Canadian Regiment*, accessed 7 March 2007, http://www.theroyalcanadianregiment.ca/history/1992-present/mike_coy_persian_gulf.html.
59. Ibid.
60. Ibid. Mike Company was commanded by the same officer who accompanied the CATGME recce party in October 1990.
61. Jean Morin and Richard H. Gimblett, *Operation Friction: The Canadian Forces in the Persian Gulf, 1990–1991* (Toronto, Ontario: Dundurn Press/DND, 1997), 108.
62. Ibid. The "neighbours" refers to a USAF security police squadron tasked with protecting a US F-16 squadron operating from the Doha airport. At the time, USAF security police were equipped only with unarmored vehicles. USAF security forces now routinely operate armored vehicles for air base ground defense missions.
63. David N. Deere, ed., *Desert Cats: The Canadian Fighter Squadron in the Gulf War* (Stoney Creek, Ontario: Fortress Publications, 1991), 111. The security threat in theater was rated as high based partially on Saddam Hussein's public pronouncement that terrorist groups sympathetic to Iraq would wreak havoc against the coalition nations arraying against him. See also Sean M. Maloney, "'Missed Opportunity': Operation Broadsword, 4 Brigade and the Gulf War," *Canadian Military History* 4, no. 1 (Spring 1995): 38.
64. Morin and Gimblett, *The Canadian Forces and the Persian Gulf*, 155.
65. Maloney, "'Missed Opportunity,'" 39.
66. Department of National Defence, *AIRCOM Concept of Operations for 2 Contingency Support Wing* (Winnipeg, Manitoba: DCOS P&R/SO Con 3, May 1995), B-5/32.
67. Ibid., B-8/32.
68. Ibid., B-9/32.
69. Tony Battista et al., *Report on the Air Force Security/Resource (Force) Protection Review*, 1 Canadian Air Division Headquarters, 1 CAD/CANR HQ/A3 SAMP, 30 November 1999, file 2131-6, 39.
70. The author was deployed as the ASF flight commander for this operation and personally made the appeal to establish the local auxiliary security force as per the CONOP.
71. Department of National Defence, CF Lessons Learned Database (Knowledge Management System) [searches under Op Athena and Camp Mirage].
72. Kingsley M. Oliver, *Through Adversity: The History of the Royal Air Force Regiment, 1942–1992* (Rushden, Northhamptonshire, UK: Forces & Corporate Publishing, 1997), 29.

73. Winston Churchill, *The Grand Alliance*, Volume 3 (New York: RosettaBooks, 2010), 693.

74. Ministry of Defence, United Kingdom, *Delivering Security in a Changing World: Future Capabilities* (Norwich, UK: The Stationery Office, 2004), 9.

75. D. M. Watkins, "Airbase Defence—The Optimum Strategy to Counter Modern Threats to Joint Air Operations," *The Royal Air Force Air Power Review* 7, no. 3 (Autumn 2004): 88.

76. *International Defence Review* 4/1979, *RAF Regiment Improvements*, 482.

77. Oliver, *Through Adversity*, 23.

78. Vick, *Snakes in the Eagles Nest*, 114–26.

79. Pierre Lepine, "From Cold Warriors to Expeditionary Forces—The Current Challenges Facing the German Armed Forces," *Canadian Military Journal* 7, no. 3 (Autumn 2006): 43–44.

80. Klaus-Peter Stieglitz, "The Luftwaffe of Tomorrow," *NATO's Nations and Partners for Peace* 50 (2006): 94, 100.

81. Germany, Luftwaffe, "Das Objektschutzregiment der Luftwaffe, 'Friesland,'" 07 August 2012, accessed 7 February 2007, http://www.luftwaffe.de/portal/a/luftwaffe/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP3I5EyrpHK9nHK9_KJ0vfkykrGL9gmxHRQB9GD_G/.

82. Additional information on the *Objektschutzregiment der Luftwaffe "Friesland"* is available at <http://www.objektschutzregiment-friesland.de/index.htm>.

83. Australian War Memorial, "Remembering 1942: The Bombing of Darwin, 19 February 1942," accessed 15 April 2007, <http://www.awm.gov.au/atwar/remembering1942/darwin/transcript.htm>.

84. For the complete history of ADG operations in Vietnam, see Chris Coulthard-Clark, *The RAAF in Vietnam: Australian Air Involvement in the Vietnam War, 1962–1975* (St. Leonards, NSW, Australia: Allen & Unwin, 1995), 217–42.

85. Royal Australian Air Force, "Airfield Defence Guard—Role—Tasks—Quick Reaction," 2007, accessed 18 January 2007, <http://web.archive.org/web/20080509024737/http://www.defence.gov.au/RAAF/adg/tasks/qrf.htm>.

86. In 1940, Dutch air assets were split between the army and a small naval air arm. The KLu was not formed as a separate service until after the war.

87. Many Western sources refer to this organization by its English translation: Royal Netherlands Air Force (RNLAf).

88. Ministry of Defence, Government of the Netherlands, "The Netherlands Ministry of Defence: Facts and Figures on Dutch Security Policy and the Armed Forces," July 2004, accessed 20 February 2007, http://web.archive.org/web/20061110233529/http://www.mindef.nl/binaries/Facts%20and%20figures_tcm15-46659.pdf.

89. Ministry of Defence, Government of the Netherlands, "Moties bij de Defensiebegroting 2003," 14 February 2003, accessed 20 February 2007, <http://www.nieuwsbank.nl/inp/2003/02/14/T037.htm>.

90. Aeronautica Militare, Government of Italy, "16° Stormo—Reparto Protezione delle Forze," n.d., accessed 21 February 2007, <http://www.aeronautica.difesa.it/Organizzazione/Reparti/Unit%C3%A0CompositaProiezione/Pagine/16StormoRepartoProtezionedelleForze.aspx>.

91. Aeronautica Militare, Government of Italy, “Dopo Sessanta Anni I Nuovi Fucilieri Dell’Aria Dell’Aeronautica Militare,” <http://www.aeronautica.difesa.it/SitoAM/Default.asp?idNot=11469&tidente=1398>; Internet; accesses 21 February 2007.

92. Aeronautica Militare, “16° Stormo.”

93. Ibid., and Italy, Aeronautica Militare, Government of Italy, “Dopo Sessanta Anni I Nuovi Fucilieri Dell’Aria Dell’Aeronautica Militare.”

94. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961–1973* (Washington DC: Office of Air Force History, 1979), 5.

95. Ibid., 6.

96. Raymond E. Bell, Jr., “To Protect an Air Base. . .,” *Airpower Journal* 3, no. 3 (Fall 1989), accessed 22 February 2007, <http://www.airpower.au.af.mil/airchronicles/apj/apj89/fall89.html>.

97. Vick, *Snakes in the Eagles Nest*, 73.

98. Bell, “To Protect an Air Base.”

99. Vick, *Snakes in the Eagles Nest*, 68–69.

100. Herbert T. Brown, “Current Air Base Ground Defence Doctrine: Are We Postured to Meet the Expectations of the AEF?” (Maxwell AFB, AL: Air Command and Staff College, 2001), 12–13, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA407118>.

101. Ibid., 13.

102. 10th Security Forces Squadron, USAF Academy, “Security Forces History,” 8 January 2009, accessed 22 February 2007, <http://web.archive.org/web/20090109041759/http://www.usafa.af.mil/10abw/10msg/sfs/history.cfm?catname=10SFS>.

103. Department of National Defence, *Air Force Expeditionary Capability Concept of Operations*, Revision 1, 7.

104. Ibid., 11.

105. United States Air Force, United States, *Security Forces Transformation Strategic Plan* (Washington, DC: HQ USAF/A7S, 2006), 12.

106. J. G. Simpson, *Briefing Note for CAS – Status of Security/Resource (Force) Protection Review* (1 Canadian Air Division Headquarters Winnipeg, 23 February 2001); and Lt Col J. G. Savard, *Briefing Note for the Comd – Ground Security Support to Air Operations – Deficiencies* (1 Canadian Air Division Headquarters Winnipeg: file 2100-8 [1 CAD PM], 12 November 2002).

107. Office of the 1 Canadian Air Division Provost Marshal/Force Protection Officer, *Air Expeditionary Capability* (PowerPoint presentation, 1 Canadian Air Division Headquarters Winnipeg, 8 December 2006). 1 Cdn Air Div PM/FPO staff had determined that 572 MP/ASF positions would be required to implement Air Force plans to create 11 operational support squadrons and support two concurrent expeditionary lines of operation. The current AEFC CONOP calls for only seven operational support elements and only one standing ASF squad as a subelement of 2 Air Expeditionary Support Squadron. All remaining ASF squads will now be generated from MOB MP squadrons under the AEFC managed readiness plan.

108. Department of National Defence, Government of Canada, “Military Police Functional Review—Signing the Route to Relevance” (report, October 2005), under cover of Captain (N) S. M. Moore, *Military Police (MP) Branch Functional Review* (NDHQ Ottawa: file 1901-1 [EA CFPM], November 2005).

109. Savard, *Briefing Note for the Comd*.

110. Canadian Forces Aerospace Warfare Centre, “Wolf Safari 06 - CFAWC Findings” (PowerPoint presentation), accessed 18 January 2007, http://trenton.mil.ca/lodger/CFAWC/A&LL/Wolf_Safari/Wolf_Safari_e.asp; Department of National Defence, Government of Canada, Defence Wide Area Network (DWAN), password-protected intranet.

111. Department of National Defence, Government of Canada, B-GL-394-002/FP-001, *Reconnaissance and Surveillance Operations (Interim)* (Ottawa, Ontario: DND Canada, 2004), 97. Although not explicitly stated in Canada’s land force doctrine, the “rear area” in a joint context would include those in-theater air bases supporting CF air units.

112. *Ibid.*, 96.

113. *Ibid.*, 28.

114. John P. Jumper and Peter J. Schoomaker, *Abrogation of Joint Service Agreement 8: USA–USAF Agreement for the Ground Defence of Air Force Bases and Installations* (Washington, DC: Departments of the Army and Air Force, 2005).

115. Royal Air Force, Ministry of Defence, United Kingdom, AP 3241, *Force Protection Doctrine for Air Operations* (High Wycombe, UK: UK MOD, 2006), 1–2.

116. There has already been discussion within the air force community of the potential for a CBRN specialist occupation. See Lt Col W. B. MacLean and Major L. D. Taylor, *Record of Discussion (ROD) – Air Force CBRN Working Group (AF CBRN WG)* (Ottawa, Canada: Air Staff, NDHQ, 10 November 2006), file 2100-8 (D Air SP 4).

117. Doctrinal information was not readily available to confirm the exact extent to which the other allied air forces’ ground defense organizations operate within the standoff weapons footprint.

118. Joint Chiefs of Staff, Department of Defense, United States, Joint Publication 3-10, *Joint Security Operations in Theater* (Washington, DC: Department of Defense, 1 August 2006), IV-4 to IV-8. For a description of the Base Security Zone construct, see Holmes et al., “The Air Force’s New Ground War,” 44–45.

Chapter 3

Air Support for Base Defense

Lessons for the Noncontiguous Battlefield

Robert D. Sagraves

After we stood up 50 expeditionary bases in [Southwest Asia] and after we've had attacks on the bases, after we have had rockets and mortar attacks on the bases, after we've had aircraft hit on arrival and departure with surface-to-air missiles and small-arms fire, and after we've looked at what does it take to secure an airfield in an expeditionary sense, this security forces business takes on a whole different light.

—Gen T. Michael Moseley
Chief of Staff, USAF

For many historians, political commentators, and foreign policy pundits, the collapse of the Soviet Union in 1991 signified the end of the Cold War and, with it, nearly 50 years of geopolitical machinations between the two nuclear-armed superpowers. As the specter of a potential military confrontation between the Warsaw Pact and North Atlantic Treaty Organization (NATO) recedes into the dim past, a new security environment has emerged. Strategic uncertainty, the proliferation of weapons of mass destruction to regimes and sub-national actors unfriendly to the United States and its allies, the emergence of transnational terrorism fueled by religious extremism, and the increased belligerence by so-called rogue states such as North Korea and Iran characterize this new environment.¹

The US military is adapting to this new and unpredictable security environment by becoming an increasingly expeditionary force.² During the Cold War, the Soviet military was a relatively well-known and quantifiable threat that US military strategists used as the basis for nearly all US war planning. The nature of the threat and the stakes of potential conflict had a determinant effect on US doctrine, training,

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acquisitions, and force structure. Furthermore, the Cold War strategy of containment pursued by the United States led it to establish large military garrisons and infrastructure in Europe and Asia in order to deter potential Soviet military adventurism. With the Cold War long over, the United States has closed or abandoned many of its overseas bases, and it relies much more heavily on land and air forces deployed from the continental United States (CONUS) to deal with overseas contingencies.

For the USAF, the drawdown of its forces based overseas and its subsequent transition to a largely CONUS-based expeditionary force has led to new operational concepts, including the air and space expeditionary force (AEF).³ The AEF concept is the USAF's overarching methodology for "organizing, training, equipping, and sustaining . . . air and space forces" to satisfy US defense strategy requirements and aligning its force structure closer with those of the other armed services.⁴ Under the AEF Presence Policy, the USAF presents forces through the commander, Air Force forces (COMAFFOR), to the combatant commander as task-organized air and space expeditionary task forces (AETF).⁵ AETFs are comprised of air expeditionary wings (AEW), groups, and squadrons and are sourced from both CONUS and rotational overseas units.

The Problem of Expeditionary Air Base Defense

In today's uncertain security environment, the USAF must be able to deploy AETFs worldwide in support of US national strategy. Recent USAF operations in Afghanistan and Iraq suggest a greater likelihood that the USAF will be called upon to deploy and conduct air operations from uncertain or even hostile environments in future conflicts.⁶ These conflicts also suggest that the traditional model of a linear and contiguous battlefield—with clearly drawn battle lines and a secure rear area—may not adequately characterize the battlefield of tomorrow. Future conflicts may instead resemble the fluid and nonlinear battlespace of Vietnam during the 1960s or Iraq and Afghanistan today. In such conflicts, the term *rear area*—with its implicit but misleading connotation of a secure zone far removed from the action—has little meaning, as hostile forces may lurk just beyond or even inside the air base perimeter. Ensuring air base operability in this type of environment places a premium on robust and effective

air base defense (ABD) to sustain asymmetric airpower advantage, once deployed.

Nearly all of the discussion since the end of the Cold War regarding improvements to the USAF's ABD capabilities has dealt largely with ground-based solutions to the expeditionary ABD problem.⁷ Very little attention has been devoted to air support for ABD, even within USAF circles. When air support for ABD has been mentioned—in either academic papers or in official doctrine—it is typically only in passing, amounting to little more than a simple acknowledgement that airpower indeed has a role in ABD but failing to detail how it should be conducted or why it may be necessary.

As the USAF is the Department of Defense's (DOD) proponent for air and space power, its continued failure to address air support for ABD in a serious and systematic manner is somewhat puzzling. In doing so, the USAF is overlooking a powerful and inherently organic capability to defend its expeditionary air bases. In particular, airpower can be effective against standoff attacks launched from outside the air base perimeter, which have been the most common form of ground attack against air bases historically.⁸ This study seeks to answer the question, what role should airpower play in the defense of expeditionary air bases against asymmetric ground attacks?

Noncontiguous Battlefield and the Implications for Expeditionary Air Base Defense

There is no rear area . . . particularly now as we see in Iraq, so it's not a matter of air bases will be in the rear area so therefore they're safe and sound . . . Air bases are on the front line. Our airmen, just in doing things in and around, outside the perimeter of the base, find that they're in a high-threat, high-risk area. So . . . the ballgame has changed.

—Brig Gen Robert H. Holmes
Director, Security Forces and Force Protection, USAF

For most Airmen, the lexicon and methodology of how the Army organizes the battlefield are dry and arcane subjects. However, understanding how the Army believes it will fight and arrange the battlespace is necessary to appreciate the impact of the noncontiguous battlefield on expeditionary ABD. Indeed, the USAF estimates that

contiguous and linear battlefields are a thing of the past unless the United States engages a “near peer” adversary.⁹ This chapter provides an overview of Army battlefield organization in order to characterize the environment where AETFs will likely deploy for future contingencies. The following discussion draws primarily on US Army doctrine to explain the basic features of contiguous and noncontiguous areas of operations.¹⁰

Battlefield Organization

The Army uses the term *concept of operations* (CONOPS) as “a statement that directs the manner in which subordinate units cooperate to accomplish the mission and establishes the sequence of actions the force will use to achieve the end state.”¹¹ The CONOPS is normally expressed in terms of decisive, shaping, and sustaining operations. The *decisive operation* is the “operation that directly accomplishes the mission” and “determines the outcome of a major operation, battle, or engagement.”¹² The decisive operation serves as the focal point around which Army commanders design the entire operation. *Shaping operations* are operations that create and preserve conditions for the success of the decisive operation.¹³ Finally, *sustaining operations* are operations that enable the decisive operation or shaping operations by generating and maintaining combat power. Compared to decisive and shaping operations, sustaining operations differ in that they are “focused internally (on friendly forces) rather than externally (on the enemy or environment).”¹⁴ Sustaining operations include activities such as force protection (FP) and the defense of fixed installations such as air bases.

Army commanders exercise procedural and positive control of subordinate forces through control measures. Control measures are essential to coordinating subordinates’ actions, and they can be permissive or restrictive.¹⁵ One of the most basic and important Army control measures is the *area of operations* (AO):

The Army or land force commander is the supported commander within that area of operations designated by the joint force commander for land operations. Within their areas of operations, commanders integrate and synchronize maneuver, fires, and interdiction. To facilitate this integration and synchronization, commanders have the authority to designate targeting priorities and timing of fires within their areas of operations. Commanders consider a unit’s area of influence when assigning it an area of operations. An area of operations should not be substantially larger than the unit’s area of influence.¹⁶

At the theater level, the Army component commander typically subdivides his AO by assigning portions of his AO to subordinate units. Subordinate unit AOs that share common boundaries represent a contiguous AO, whereas subordinate unit AOs that do not share boundaries and are geographically separated represent a noncontiguous AO. The intervening land area between noncontiguous AOs is referred to as an *unassigned area* and is the responsibility of the next-higher headquarters.¹⁷

An example of a contiguous AO is the Western European theater in World War II following the Allied invasion of Normandy: adjacent Allied ground units shared a common boundary, and the axis of advance was roughly linear as forces moved across France and into Germany. In contrast to a contiguous AO, the noncontiguous AO is exemplified by a division AO subdivided into two noncontiguous brigade combat team (BCT) AOs and a noncontiguous joint special operations area with little or no direct contact. As mentioned previously, the area between noncontiguous AOs is the responsibility of the next-higher echelon. In this case, any enemy units located between the two BCTs' AOs are the responsibility of the division since these enemy units are outside the BCTs' AO boundaries. This configuration conforms roughly to that of South Vietnam during the Vietnam War and the more recent battlespaces in Iraq and Afghanistan.

Relationship between Contiguous and Noncontiguous AOs

The relationship between operations in contiguous and noncontiguous AOs can be dynamic. For instance, to facilitate the seizure of key objectives, widely dispersed operations conducted in noncontiguous BCT AOs may occur across the depth of a division AO to disorganize the enemy and saturate its defenses. This can be followed with a consolidation of forces into a contiguous arrangement for follow-on operations if the situation requires. On the other hand, forces may start out in a contiguous arrangement and proceed along several different and geographically separate lines of operations against multiple objectives. It is important to reemphasize that doctrinally, the unassigned areas between noncontiguous AOs or beyond contiguous AOs are the responsibility of the higher headquarters.

In operations in a contiguous AO, a division may subdivide its entire AO and assign responsibility for it to its subordinate BCTs. Within their respective AOs, however, the subordinate BCTs may opt for a

noncontiguous arrangement for their subordinate units in order to best accomplish the mission. This battlefield arrangement is typical for stability operations such as those conducted by NATO forces in Bosnia and Kosovo. US Army and Army of the Republic of Vietnam (ARVN) combat operations in South Vietnam provide another example of this type of battlefield organization.

Conversely, for operations in a noncontiguous AO, operations at both the higher headquarters and subordinate unit level occur in noncontiguous AOs. Army stability and support operations in Somalia in 1992, which entailed operations in widely separated AOs, are an example of this type of battlefield design.

Implications for Expeditionary ABD

Ground defense of expeditionary air bases on a contiguous battlefield, provided such bases are located in a secure area, is a relatively straightforward task that poses few problems. The contiguous design of the battlefield means that friendly combat forces control the breadth and depth of the intervening area between enemy ground forces and friendly air bases. The contiguous arrangement of the AO means that there are no exploitable gaps between adjacent ground units, reducing the likelihood of an undetected penetration by infiltrating enemy forces. The chance of ground attack against an air base in this situation is exceedingly remote.

On the other hand, the security of expeditionary air bases on a noncontiguous battlefield is a much different matter. Entailing multiple geographic lines of operation aimed at separate decisive points within the AO, operations in noncontiguous AOs will lead to the formation of seams on the battlefield due to the disparate maneuvers of friendly ground forces. This in turn can create sizable areas within the AO that are relatively undefended and that are therefore vulnerable to enemy penetration. A perceptive and enterprising enemy can readily exploit these vulnerable areas to move within striking distance of friendly air bases. The susceptibility to infiltration by small assault units is particularly acute. Although it is true that responsibility for the area between noncontiguous AOs is vested with the higher headquarters, this does not necessarily mean that it has the capacity or intent to secure this area in its entirety. Indeed, there may be occasions where the extent of the area is simply too vast for the higher headquarters' reaction forces to provide adequate and effective security. This could

stem from either insufficient forces devoted to the task, lack of battlefield mobility, inadequate intelligence regarding enemy forces, or combinations of these factors.

Brig Gen Huba Wass de Czege, one of the primary architects of the Army's AirLand Battle doctrine and founder of the Army's School of Advanced Military Studies, is well aware of the FP dilemma posed by the noncontiguous battlefield. To quote the general at length from a 2001 article in *Army Magazine*,

During the Cold War, NATO commanders planned a defensive campaign and assumed a traditionally linear front. Host nations accepted responsibility for protecting the vital rear areas back to the Atlantic ports. . . . Commanders tasked combat units to prevent large penetrations of the front line that would threaten the rear, and selected units received "on order" missions to defeat the occasional ground penetration or vertical envelopment. . . . This system was sufficient for those conditions, and it was also adequate during the [1991] Persian Gulf War.

This approach is rapidly becoming outdated. In the coming environment, current methods will require too many personnel and other scarce resources and consequently will divert too much combat power away from achieving rapid and decisive victory. An army consumed with self-protection cannot harm the enemy. We must find new methods.

. . . Within the area of operations, the combination of improved intelligence and PGMs [precision-guided munitions] will compel greater unit and facility dispersion. These actions will complicate rear area protection because securing the greater spaces between tactical and support elements will be impractical. These unprotected spaces will provide access for infiltrating unconventional forces.

The most vulnerable force elements will be those that are most predictable, closest to the enemy, and either fixed or stationary for long periods of time.¹⁸

Senior USAF leaders have also recognized the potential threats to expeditionary air bases that exist on the noncontiguous battlefield. The USAF chief of staff issued a memorandum that briefly outlines the vision to transform USAF security forces (SF) into "highly trained and equipped joint warfighters, operating inside and outside the wire" in order to cope with the increasing threat to expeditionary air bases.¹⁹ Brig Gen Robert H. Holmes, the USAF's director of security forces and force protection, added,

Many future battlefields could look a lot like the early days of Afghanistan, with its multiple joint operating areas that did not touch geographically. USAF security forces must be ready to take an active defense or even offensive role centered on the air base, and the boundary of the operating area may expand. . . .

In the past . . . SF leaders thought this BCT [Army brigade combat team] or this MEU [Marine expeditionary unit] would handle a base's external threat because they were adjacent to the base. The fluid nonlinear battlespace erases the old lines. Now the base is an "autonomous joint operating area" and may not have joint ground forces linked to it.²⁰

One could easily replace "Afghanistan" with "Vietnam" in the preceding quote. The comments of General Holmes are remarkably similar to the concerns expressed by senior USAF leaders over 50 years ago when search-and-destroy operations by friendly ground forces often left US air bases exposed to enemy attack.²¹ This subject is examined in greater detail later. The next section continues the discussion of the expeditionary ABD problem, beginning with an examination of the various factors that make expeditionary air bases attractive targets for ground attack. Following this is a broad historical survey to assess the most likely threat to expeditionary air bases.

Ground Attacks against Air Bases: Why and How

Much of the enemy activity, therefore, has been directed against air bases, since they present to him a concentration of lucrative targets.

—Maj Richard R. Lee
"7AF Local Base Defense Operations"

Military installations operate under the constant threat of attack at a time and place of the enemy's choosing. The variety of strategies and tactics available to the enemy is limited only by the types and quantity of weapons at its disposal. It is inclined to select targets that provide the greatest payoff for the expenditures incurred.

Expeditionary air bases make an attractive target for ground attack. This estimation is based on a historical survey of three relevant examples of ground attacks that inflicted significant losses on air forces: raids by British special operations forces (SOF) in North Africa during World War II, Viet Cong (VC) and North Vietnamese Army (NVA) standoff attacks in Vietnam, and the mujahidin man-portable air defense system (MANPADS) attacks against aircraft landing and taking off from air bases in Afghanistan from 1986 to 1988. The following discussion answers three questions. First, what are the specific reasons that make expeditionary air bases such a lucrative target? Sec-

ond, what methods and means have adversaries employed in the past to attack air bases? Third, what methods and means might they reasonably use in the future? The section concludes by describing the difficulties of countering the ground threat to expeditionary air bases.

The Attractiveness of Ground Attacks against Air Bases

Expeditionary air bases make attractive targets for ground attack for three compelling reasons: the inherent vulnerability of expeditionary air bases, the increasing fragility of complex modern aircraft, and the potential payoff of a successful attack. The following section draws on the findings of various reports that have examined the future ground threat to US air bases in a general sense but not necessarily within the context of expeditionary air operations on a noncontiguous battlefield.²²

The very nature of expeditionary operations makes expeditionary air bases inherently vulnerable to ground attack for at least three reasons. First, unlike main operating bases (MOB) in Europe, Korea, and Japan, host nation (HN) military aviation facilities in many lesser-developed parts of the world are marginal at best in terms of air base security.²³ Security deficiencies include lack of hardened aircraft shelters, shortage of secure living quarters, and inadequate ramp space leading to overcrowded—and thus target rich—parking ramps.²⁴ Second, the increased use of insecure civilian airports for expeditionary air operations poses additional problems, such as vulnerabilities arising from aboveground storage of aviation fuel and poor access control.²⁵ Finally, circumstances will dictate that AETFs might operate out of countries with a high degree of internal instability.²⁶ In such situations, HN pledges to provide for the external defense of US air bases will likely compete with its preoccupation with suppressing internal threats in areas far removed from the environs of the air base. Internal disorder in weak and failing states also provides an ideal atmosphere for potential air base attackers, such as insurgents or terrorists, who often exploit the “noise level” of the surrounding unrest to hide their actions and prevent discovery.

The vulnerability of expeditionary air bases is not a new revelation. A 1966 study concerning air base security in Vietnam provides an apt description of the dangers posed by the expeditionary air base environment:

The general situation the USAF should expect to encounter in any future limited war is one not too unlike the situation that existed in Vietnam in 1965. The US will be aiding a faltering nation. Language barriers will exist and confusion among races will be encountered. At the onset of the conflict the existing airports of the nation will have to be used by the USAF. At such airports there will be inadequate facilities, intense congestion, hoards of on-base native laborers, and dense population areas closely crowding the base. . . . Guerilla action will characterize the enemy effort and with it will be the very significant threats that will challenge USAF security and defense efforts to the limit.²⁷

Beyond the inherent vulnerability and risk associated with expeditionary operations, the advent and proliferation of information-age technologies lend additional impetus for increased concern regarding the vulnerability of expeditionary air bases. The 24-hour cable news cycle and the pervasiveness of the Internet make it difficult for the United States to mask overseas deployments for very long. This means that strategic or even operational surprise may be difficult if not impossible to achieve in the future. With adequate warning, adversaries may surreptitiously position small teams close to those airfields most likely to be used as an expeditionary air base or aerial port of debarkation (APOD). By conducting standoff attacks using rocket artillery, mortars, or MANPADS, such teams could seriously disrupt the initial staging of forces in-theater by interfering with air operations. For expeditionary air bases that have been established in theater for some time, enemy mission planning and coordination for ground attacks against these static facilities are assisted by the combination of commercially available satellite imagery, mobile telecommunications, portable GPS receivers, and the Internet.²⁸ There is a sense of strategic irony in the fact that some of the very technologies that make the US military so dominant are also available commercially and may make future enemies more lethal.

The Fragility of Complex Modern Aircraft

Although the continual advancement of aviation technology has ensured the USAF's superiority in the air, "parked aircraft today are no sturdier in withstanding high explosives or shrapnel than were their predecessors 50 years ago. Indeed, the complexity and sophistication of modern aircraft may make them more vulnerable."²⁹ Consider, for example, the USAF's increased reliance on aircraft that incorporate low-observable technology. Today's generations of stealth aircraft, the Lockheed Martin F-22 Raptor and Northrop Grumman B-2 Spirit, are

crucial for initial air operations against adversaries with robust air defenses. The USAF's reliance on stealth will continue with the acquisition and fielding of the Lockheed Martin F-35 Lightning II.³⁰

Superficial shrapnel damage to the composite surface of any of these aircraft would likely increase its radar cross section (RCS), making it less stealthy and more susceptible to detection. Depending on the severity, such damage could seriously impair the aircraft's operational effectiveness, particularly in a robust radar threat environment. In addition, field-level repairs to the composite skin surface to restore the original RCS may prove difficult, especially at an austere expeditionary air base.³¹ Given that budgetary pressures have forced the USAF to accept substantially fewer numbers of F-22s and F-35s, even the temporary loss of just a few stealth aircraft to ground attack could have a major impact on air operations.³²

In addition to the USAF's dependency on stealth, its reliance on a small number of high-value aircraft such as the Boeing E-3A Sentry airborne warning and control system (AWACS), the Northrop Grumman E-8 joint surveillance target attack radar system (JSTARS), and the Boeing RC-135V/W Rivet Joint reconnaissance aircraft—combined with the tendency to concentrate these high-value aircraft at a relatively small number of bases for operational and logistical efficiency—exacerbates the USAF's susceptibility to debilitating ground attacks. For example, a few well-placed rounds from a sniper rifle could indefinitely ground one or more of these low-density/high-demand aircraft by causing substantial damage to sensitive electronics and other mission-related equipment. In a major conflict, the resultant impact on air operations could be significant. Although the USAF normally bases these high-value assets in well-protected locations far removed from the battlefield, this critical vulnerability cannot be completely discounted.

Risk versus Reward: The Payoff of Ground Attacks against Air Bases

In an operational military context, risk is usually associated with calculations dealing with the relative probabilities of victory or defeat. However, risk can also refer to the opportunity cost a nation incurs when it chooses to devote scarce resources to develop and fund one particular type of force structure over another. As pointed out in the introduction, one of the assumptions of this study is that future

adversaries, having witnessed the burgeoning dominance of US airpower since Desert Storm, will eschew the fiscal burden of fielding air forces capable of seriously threatening US aerial supremacy. It is more likely that future adversaries will seek to stymie US airpower through more inexpensive asymmetric means. This view was put forth in a 1995 RAND report:

Having an intellectual grasp of the capabilities of modern airpower is one thing; knowing how to defeat them is something else again. With the collapse of the Soviet Union, no power in the world seems capable of defeating American forces *in the air*. No other air force today appears to field the combination of platforms, weapons, and personnel—either in quantity or quality—that would be needed to defeat the USAF nose-to-nose at 35,000 feet.

Instead, shrewd future opponents will attempt to counter U.S. airpower in other ways, rigging the game in their favor by exploiting those vulnerabilities that do exist.³³ (emphasis in original)

In other words, future adversaries are likely to conclude that the most efficient way to hinder US airpower is to attack it where it is most vulnerable—on the ground. Air Staff planners have reached much the same conclusion, as their CONOPS for base defense suggests:

The upward shift in the lethality of international and domestic threats dictates the Air Force take strong actions to protect our personnel and installations, both overseas and at home. The dominance of American airpower and the potential for adversaries to counter with an “asymmetric” warfare strategy make our air bases and geographically separated units attractive targets. Our adversaries know they can’t compete against USAF assets in the skies, so a logical alternative is to destroy air and space assets on the ground, where their lethality is negated. Today, our high value air and space systems are vital to our national defense. The loss of one system could severely impact operational capability and erode public confidence in our ability to protect vital national security resources and people.³⁴

Many benefits accrue to the adversary who seeks to attack US airpower on the ground. First, a ground attack allows an adversary to attrite US airpower in a cost-effective way that does not require the substantial resources involved in fielding and maintaining a modern air force. Nearly all major powers have armies and SOFs or similarly trained units that could be utilized for small-scale raids against air bases.³⁵ Enabled by information-age technology and operating stealthily on a porous nonlinear battlefield, an attack by enemy SOFs traveling long distances to strike against US expeditionary air bases is not beyond conception. In fact, there is a historical precedent for such raids.

During World War II in North Africa, the British Long Range Desert Group (LRDG) and Special Air Service (SAS) attacked German and Italian air bases over 50 times from October 1940 to July 1943, destroying nearly 370 aircraft, numerous aircraft repair facilities, ammunition dumps, and fuel stores.³⁶ These raids cost the British relatively little in manpower or materiel, whereas the loss to Axis air forces was substantial, especially in light of Germany's precarious logistical situation in North Africa.³⁷ As an interesting aside, the British LRDG and SAS teams, usually no larger than a platoon-size force, conducted these raids across hundreds of miles of barren desert. Their achievements challenge the notion that the desert environment affords air bases with a natural defense against long-range overland attacks by small units.³⁸

A second benefit of conducting ground attacks against air bases is that it provides an adversary with a relatively inexpensive and low-risk way to hamper US air operations. Modern air operations require the detailed integration of strike aircraft with a host of supporting assets, including electronic jammers, escort fighters, and high-value command and control (C2) and intelligence, surveillance, and reconnaissance aircraft.³⁹ The destruction of just a few of these mission-essential aircraft at a critical point in a conflict could seriously impair US air operations. US ground-force operations are likely to be affected as well, given the increasing substitution of airpower for organic heavy artillery.⁴⁰ Therefore, an adversary cognizant of airpower's critical role in the conduct of joint war fighting may see ground attacks against air bases as perhaps the most expeditious way to frustrate US and coalition operations. The evolution of the United States' shrinking industrial base also plays a role. Unlike in previous industrial-age conflicts, when aircraft were much less complex and replacements rolled off the assembly line as a matter of course, the rapid tempo of modern information-age warfare now means the USAF goes to war with only those aircraft already in the inventory at the commencement of hostilities. Restarting the production line to replace the loss of today's complex and expensive aircraft is not an option, at least not in time to have an impact during a major conflict.⁴¹

Finally, adversaries may reason that a successful ground attack on a US air base could have second-order strategic effects entirely out of proportion to the actual physical damage inflicted. In the past 25 years, the US military has been the target of a number of such "strategic events": the 1983 bombing of the Marine barracks in Beirut, the

bloodying of Task Force Ranger in Somalia in 1993, the 1996 bombing of the USAF's Khobar Towers complex in Saudi Arabia, and the 2000 attack against the USS *Cole* in Yemen.⁴² Although these tragic and unfortunate incidents cannot be classified as a "defeat" in a purely military sense, almost all served as catalysts for changes in existing US policy. Should the USAF suffer a dramatic ground attack on one of its expeditionary air bases, the reality of today's round-the-clock global news coverage, disseminated worldwide via television and the Internet, ensures the attack would receive almost instant media focus. The ensuing media coverage could test the resolve of the US public or that of the leadership, particularly for a conflict that does not enjoy broad political support. In the face of mounting political pressure, senior US decision makers might be faced with no other option but to reverse policy course—a potentially humiliating defeat.⁴³

The Ground Threat to Expeditionary Air Bases

The study thus far has investigated two aspects of the expeditionary ABD problem: first, that expeditionary air bases face an increased risk of ground attack given the fluidity of the noncontiguous battlefield; and second, that there are several compelling reasons why ground attack is an appealing option for adversaries who seek an asymmetric means to blunt US airpower. The third and final piece of the ABD puzzle is to gain an appreciation of the likely ground-attack methods future adversaries may adopt, which is the purpose of this section. To this end, the following discussion briefly reviews the historical record of ground attacks against air bases and proceeds under the assumption that past trends can be used as an indicator of the threats most likely to confront air base defenders in the future.

Historical Review

Given the vulnerability of aircraft to ground attack, it is surprising that historically there are not more examples. Some of this can be attributed to combating airpower with airpower. In addition, the history of airpower only spans a century. During the twentieth century, two examples of asymmetric ground attack campaigns versus airpower stand out: the British attacks against Axis airfields in North Africa during World War II and the VC and NVA attacks against US air bases during the Vietnam War. A study by the RAND Corporation recorded

that between 1940 and 1992, air bases have been the deliberate target of ground attack at least 645 times.⁴⁴ Of these attacks, the British SAS/LRDG and the VC/NVA are responsible for 528 (82 percent). During World War II, the British conducted 53 raids against Axis airfields in Egypt and Libya, destroying at least 367 aircraft, while the number of aircraft damaged in these raids remains unclear.⁴⁵ This equates to nearly seven aircraft destroyed per attack. In Vietnam, VC/NVA forces attacked US main operating bases 475 times, destroying 100 aircraft and damaging another 1,203.⁴⁶ This corresponds to 2.5 aircraft damaged per attack and one aircraft destroyed every five attacks.

Going beyond these statistics, a closer look at the British and VC/NVA air base attacks highlights two points that are relevant to the discussion. The first deals with the size and composition of the attack force. For both the British and the VC/NVA, the attack force was usually no larger than a company. Recall that the British normally employed a platoon-sized force, separating into task-organized assault teams of approximately five men upon nearing the intended target or targets.⁴⁷ Large teams were rare, with the exact size being a function of the scale of the raid. Like the British, the VC/NVA also relied on small units for air base attacks.

An important distinction, however, is that the VC/NVA had separate units that specialized in a particular attack method, whereas the SAS/LRDG tended to be generalists. For standoff attacks, the VC/NVA utilized one to three mortar, recoilless rifle, or rocket companies.⁴⁸ Sapper attacks were conducted by specially trained sapper raiding parties with a company-size force consisting of approximately 50–70 men. These units were organized into an assault element, a security element, a fire support element, and sometimes a reserve element.⁴⁹ Only once, during the 1968 Tet offensive, did the VC/NVA carry out battalion-size attacks against US air bases, assailing Tan Son Nhut with one VC sapper battalion and six VC/NVA infantry battalions and Bien Hoa with two VC infantry battalions.⁵⁰

The second important feature of the SAS/LRDG and VC/NVA attacks is the distinction between each force's primary attack method. In the case of the SAS/LRDG, all 53 attacks against Axis airfields involved penetration of the base perimeter.⁵¹ Axis airfields had generally poor defenses, which greatly facilitated the assault teams' ability to get inside the air bases. Although the Germans eventually took steps to bolster the defense of their airfields, these efforts were in the end largely "ad hoc, purely reactive, and lack[ing] integration."⁵² Thus,

the British had little need or incentive to make major adjustments to their attack methods. In contrast to the British, the VC/NVA conducted very few penetrating attacks. During the course of the war, the VC/NVA conducted only 16 sapper attacks—plus an additional eight combination sapper-standoff attacks—against the USAF's main operating bases in South Vietnam.⁵³ The relatively low number of penetration attacks is largely attributable to the USAF's concerted efforts to strengthen the perimeter defenses of its air bases.⁵⁴ In contrast to the experience of the SAS/LRDG two decades earlier, VC/NVA sapper teams had to contend with base defenses that incorporated minefields, fencings, guard towers, sentry dogs, and searchlights.⁵⁵ As a result, the VC/NVA relied much more heavily on standoff attacks, employing this attack method 447 times, which accounted for 94 percent of all air base attacks against USAF main operating bases in Vietnam.⁵⁶ As the next section will demonstrate, VC/NVA standoff attacks varied in character and proved very difficult to counter.

Before closing this brief review of the history of ground attacks against air bases, I must mention the Soviet air force's experience with air base attacks during the Soviet Union's occupation of Afghanistan in the 1980s. Although the Soviet experience in Afghanistan is not an example of ground attacks against air bases per se, it nevertheless provides interesting insights into how airpower can be countered from the ground asymmetrically. Unfortunately, the history of air base attacks in the Soviet-Afghan conflict is much less complete than the well-documented experiences of the Axis air forces in North Africa and the USAF in Vietnam. However, enough details are known to warrant a brief mention about specific attacks and their impact. The Soviet case is important because it represents the first extensive use of MANPADS to attack aircraft taking off or landing at air bases.

Beginning in 1982, the United States and Great Britain initiated a covert program to supply the Afghan mujahidin guerillas with MANPADS in order to counter Soviet control of the skies.⁵⁷ Initially, the mujahidin received Soviet-built SA-7 Grail systems to maintain plausible deniability. However, starting in 1986, much more capable missiles such as the British Blowpipe and the US-made Stinger were provided to the guerillas.⁵⁸ The impact of these advanced Western weapons on the conflict was immediately apparent. On 26 September 1986, in one of the first reported uses of the Stinger, the mujahidin shot down three Soviet helicopters in a flight of four while they were landing at the Jalalabad airport.⁵⁹ In a subsequent attack on the Soviet air base at

Qandahar, a mujahidin Stinger team “set up shop not far from the end of the runway, blasted a few Soviet planes as they tried to take off laden with fuel and ammunition, then melted into the hills.”⁶⁰ These attacks were typical, as it was a “fairly standard practice” for the mujahidin to establish MANPADS ambush sites near major Soviet air bases in order to attack arriving and departing aircraft.⁶¹ Major air bases were not the only target, however. At many smaller airfields and forward operating locations, the MANPADS threat was so severe that the Soviets were forced to suspend air operations completely.⁶²

The MANPADS threat near the airfields had a significant impact on Soviet activities by forcing them to develop tactical workarounds and countermeasures that “severely curtailed the flexibility in . . . air operations.”⁶³ In response to the threat, the Soviets established extensive perimeter defenses at major air bases in an attempt to push the MANPADS threat as far away from the runway as possible. In addition, procedures were changed. Landing aircraft had to expend pre-emptive flares and make spiral landing approaches for protection.⁶⁴ No data are available regarding the overall number of aircraft destroyed or damaged due to MANPADS attacks at airfields; some reports claim that after the introduction of the Blowpipe and the Stinger in 1986, the Soviets lost an average of 450 aircraft per year to MANPADS in all air operations.⁶⁵ This compares with an estimate compiled by the US Army stating that the mujahidin scored 269 hits out of 340 Stinger firings during the conflict.⁶⁶ In the end, the number of Soviet aircraft lost due to MANPADS ambush attacks near airfields will probably never be known, but the challenge they posed to the Soviet air force affected the conduct of ground operations in a noncontiguous battlespace environment.

Estimating the Threat to Expeditionary Air Bases

Looking at the historical record of SAS/LRDG, VC/NVA, and mujahidin attacks against air bases, one can extrapolate how asymmetric advantages are utilized to attack air bases from the ground now and in the future. First, the success of these forces demonstrates that small, specially trained units are quite capable of carrying out highly destructive attacks against air bases. A large assault force is not necessary, particularly if the goal of the attack is simply to destroy aircraft or to harass the air base. Indeed, these two objectives account for 87 percent of all air base attacks in the RAND study. Denying the use of

the air base or capturing it outright was the objective only 13 percent of the time; these cases involved sizable airborne assault forces or large conventional maneuver units.⁶⁷ Since the demise of the Soviet Union, very few nations—besides the United States—have the capability to conduct large-scale assaults to seize or incapacitate an air base. As the author of the RAND study aptly surmised, the likelihood of a large-scale airfield assault “is more of a prospect for adversaries of the United States than for the United States.”⁶⁸

Second, the history of these attacks seems to confirm the commonsense notion that where perimeter defenses are weak, penetrating attacks remain a viable threat. British SOFs exploited the ineffectual perimeter defenses of German and Italian forces in North Africa, enabling them to conduct highly destructive airfield raids for nearly three years. This experience stands in stark contrast with that of the VC/NVA, which had to rely much more heavily on standoff attacks due to the strength of perimeter defenses at US air bases. In the case of the mujahidin, there is very little documentation regarding their attempts at sapper attacks against Soviet air bases. It appears that if sapper raids did in fact occur, they were insignificant compared to the large number of MANPADS attacks near the air bases. Indeed, because they benefited from a steady supply of advanced MANPADS from the United States and Great Britain, the mujahidin had little incentive to attempt risky sapper raids.

Standoff attacks are attractive to most asymmetric adversaries for several reasons. First, they are generally easier to accomplish and involve much less risk to attacking forces than penetrating attacks, as forces do not need to come in close proximity to the perimeter defenses. Second, standoff weapons that incorporate delay timers or remote firing devices allow attackers to be a considerable distance from the actual firing position. These considerations give the standoff attacker a degree of surprise and survivability not afforded to the sapper. Third, the existence of large numbers of rockets and mortars left over from surplus Soviet stockpiles means that these weapons are relatively easy to obtain. Fourth, standoff weapons tend to be the weapons of choice for some asymmetric adversaries—witness Hezbollah’s long-running campaign of rocket and mortar attacks against Israel.

Looking toward the future, the incorporation of precision guidance technology into the design of mortars and rockets will make standoff attacks with these weapons even more lethal; mortar systems in particular have seen significant advances in range, precision, and

lethality within the last decade.⁶⁹ As opposed to the present reliance on mass barrages (and a degree of luck) to score a hit, precision standoff weaponry would allow attackers to select specific aim points on the air base, requiring the expenditure of only a few rounds to hit the intended targets.⁷⁰

Finally, as evinced by the Soviet experience in Afghanistan, the advent and proliferation of advanced shoulder-launched MANPADS add another dimension to the standoff threat. By concealing themselves below the approach corridors to Soviet air bases, the mujahidin demonstrated that it can be a relatively simple matter for MANPADS teams to shoot down or cripple arriving and departing aircraft. Indeed, a series of MANPADS attacks against civilian and military aircraft at Baghdad International Airport in 2003 conducted by Iraqi insurgents halted virtually all civilian air traffic into that airport.⁷¹

The Difficulty of Countering the Standoff Threat

The USAF recognizes the serious danger posed by standoff weapons, stating in Air Force Instruction (AFI) 31-101, *Integrated Defense*, that “adversary acquisition of technologically advanced equipment, such as portable surface-to-air missiles, guided mortar munitions and night vision devices increases the difficulty to detect or neutralize threats to air bases.”⁷² Unfortunately, these attacks are also the most difficult threat to counter, requiring air base defenders to control several square kilometers outside the air base perimeter—the so-called standoff footprint—in order to detect and neutralize this threat. AFI 31-301, *Air Base Defense*, which was superseded by AFI 31-101, highlighted this problem, stating that “the range of rockets, mortars, shoulder launched anti-aircraft weapons, and large caliber machine guns offer the potential adversary a large area beyond the perimeter fence from which to attack an air base, to include departing and recovering aircraft.”⁷³ To assist base commanders in mitigating the standoff threat, the USAF has codified an Air Force–unique planning term and concept, the base security zone (BSZ), which denotes “the area outside the base perimeter from which the base may be vulnerable from standoff threats (e.g., mortars, rockets, man-portable air defense systems).”⁷⁴

To gain an appreciation of the difficulty in securing the standoff footprint, it is important to review the notional standoff ranges of various indirect and direct fire weapons. In a hypothetical scenario

of an air base under the threat of 120 mm mortar fire—assuming a 7,000-meter range and the potential for an attack from any direction around the air base—the standoff footprint equals approximately 150 sq. km (58 sq. mi.). To control an area of this extent requires a significant investment in manpower, which is normally provided by the Army.

Tasked with fighting and winning the nation's wars, the Army views offensive operations as the “decisive element of full-spectrum operations.”⁷⁵ Offensive forces seize and retain the initiative during campaigns and force their adversaries to remit. Therefore, it is reasonable to assume that the bulk of Army combat power in-theater will be devoted to decisive operations against the enemy. In fact, US Army Field Manual (FM) 3-0, *Operations*, explicitly states that Army commanders should “allocate minimum essential combat power to secondary efforts” such as “shaping and sustaining operations so they can mass combat power for the decisive operation.”⁷⁶ Sustaining operations such as FP and the defense of fixed installations such as air bases will be accorded a lower priority in the allocation of Army combat forces in the area of operations. Thus, only a small portion of the Army's total combat power will normally be made available for duties such as area security and the external defense of air bases. This is especially significant for noncontiguous AOs during stability or security operations in a hostile or nonpermissive environment.

The implications that arise from the Army's offensive mind-set are significant for ABD and controlling the standoff footprint. Given that the Army will allocate most of its combat power to decisive operations, an Army unit assigned to defend an air base will most likely not be large enough for the task. Consequently, the Army unit commander responsible for the external defense of a base, upon conducting his or her mission, enemy, terrain and weather, troops and support available–time available and civil considerations (METT-TC analysis), will likely determine that the only way to secure the area encompassing the standoff footprint is to conduct mobile defensive operations.⁷⁷ Indeed, with an insufficient number of soldiers to occupy the vast area surrounding the air base, the commander will likely have no alternative. Unfortunately, large seams can develop between units as they conduct a mobile defense—seams that are vulnerable to enemy exploitation. Army doctrine even states, “An area of operations should not be substantially larger than the [assigned] unit's area of influence. Ideally, the entire area of operations is encompassed by the

area of influence. An area of operations that is too large for a unit to control can allow sanctuaries for enemy forces.⁷⁸

The destruction wrought by the SAS/LRDG, VC/NVA, and mujahidin aptly demonstrates what can happen when confronted by an adversary that is willing and capable of exploiting undefended gaps. Thus, as an essential part of ABD, controlling the standoff footprint centers on the issue of how to cover these gaps in an air base's external defense. USAF security forces are not currently organized, trained, or equipped for such a task, as noted in the USAF's SF transformation plan:

Recent experiences in both the Iraq and Afghanistan theaters have taught us many lessons. For years, SF members were taught (ABD Enlisted & Officer courses, Command Course) to expect and be able to operate outside the wire, running convoys and proactive security patrols of the perimeter and MANPAD footprints, but this was never trained for or exercised adequately. Now faced with the reality of "Opening Bases" in occupied territory, the need for better capabilities here is apparent, as is the importance of being able to conduct joint combat ops with other units. . . . We are faced with a dynamic force protection environment and must stay ahead of the curve regarding how we respond to it.⁷⁹

Summary: The Expeditionary ABD Problem

Expeditionary air bases are a particularly attractive target for ground attack. The inherent vulnerability of expeditionary operations, the fragility of modern aircraft, and the potential payoff of a successful attack all combine to make air bases highly lucrative targets. The challenges confronting air base defenders are significant, requiring difficult choices in organization, operating concepts, C2, and resource allocation. To gain insight into these challenges, the next section will examine how the USAF dealt with the standoff threat in Vietnam by relying on airpower to bolster the external defense of its air bases.

Case Study: Air Support for Air Base Defense in Vietnam

In considering the functions which must be accomplished by USAF CSPF [Combat Security Police Forces] forces [sic], i.e., detection, interception and neutralization, it is evident that the flexibility, quick reaction capability, and firepower of aircraft can materially enhance the accomplishment of these functions.

Moreover, if future wars involve interservice questions of roles and missions such as exist in Vietnam today, which prevent security force ground response to mortar, artillery, or rocket attacks from off-base positions, aircraft may represent the USAF's only response capability to this type of attack.

—HQ Air Force, Directorate of Security Police

The ever-changing context of war—including the nature of the participants and their specific political objectives, the characteristics of the theater of operations, the qualities of the opposing military forces, the technologies available, and a myriad other variables—ensures that no two conflicts are alike. One must therefore approach a specific case study, in this case Vietnam, with caution when attempting to derive insights for today's problems. Yet there is a striking parallel between the problems of ABD in South Vietnam and those faced by air base commanders now and in the future. This stems from the nonlinear nature of the ground war in South Vietnam. During the Vietnam conflict, nonlinear operations by friendly ground forces and the incompetence of HN forces in providing effective external defense drove USAF commanders to rely heavily on air support for ABD. For this reason, a judicious examination of the US experience with ABD in South Vietnam has significant relevance to the problems facing the expeditionary USAF.

In Vietnam the USAF was the target of a sustained effort by a determined and resourceful adversary to destroy its aircraft on the ground. As mentioned in the preceding section, the principal threat to US air bases came from VC/NVA standoff attacks launched from well outside the air base perimeter. Although the US Army, Marine Corps, ARVN, and other Free World Military Forces provided external ground defense of US air bases at various times and places throughout the war, this section will demonstrate that such measures resulted more by happenstance than by design.⁸⁰ Given the difficulties associated with engaging an elusive enemy in a nonlinear battlespace, the focus of friendly ground forces was on bringing that enemy to bear. Friendly ground forces provided external ABD only when their scheme of maneuver brought them in close proximity to an air base.

Consequently, external ground defense was carried out not because of a deliberate theaterwide plan but as the result of ad hoc ar-

rangements made between local air base commanders and whatever friendly ground units happened to be nearby.⁸¹ Of the USAF's 10 main operating bases in Vietnam, Da Nang had the only concerted joint effort to secure the area beyond the air base perimeter.⁸² Indeed, according to the official USAF history of ABD in Vietnam, the remaining MOBs were "for the most part unprotected by any external defense forces, so that the VC/NVA were largely free to mount attacks at times and locations of their choice."⁸³ Because the USAF steadfastly eschewed any responsibility for the external ground defense of its air bases, the service increasingly relied on the one means at its disposal, airpower, to counter the incessant standoff attacks against air bases.

To gain a greater understanding for the role of airpower in the defense of air bases, this section examines the evolution of air support for ABD in South Vietnam. This section surveys that evolution chronologically in four distinct periods of the war: the advisory period from 1961 to 1964, Americanization and escalation of the war from 1965 to 1968, the 1968 Tet offensive and the period immediately thereafter, and Vietnamization of the war and drawdown of US ground forces.

1961–64: ABD during the Advisory Years

The USAF's long-term involvement in Vietnam began with the deployment of Detachment 2, 4400th Combat Crew Training Squadron, to South Vietnam in November 1961.⁸⁴ This training and advisory unit, code-named "Farm Gate," was based at Bien Hoa Air Base (AB) outside Saigon and was the first major USAF flying unit to be stationed in the country. Over the next three years, the USAF's presence in South Vietnam expanded to include flight operations at two other Vietnamese Air Force (VNAF) bases: Da Nang AB, with a mix of North American F-100 Super Sabre fighters, Convair F-102 Delta Dagger interceptors, and Fairchild C-123 Provider transports; and Tan Son Nhut AB, also outside Saigon, which hosted a force that consisted of C-123s, Martin RB-57F Canberra and McDonnell RF-101 Voodoo reconnaissance aircrafts, and F-102s.⁸⁵

Since the USAF was a tenant at these bases, responsibility for ABD rested with the HN military forces of the Republic of Vietnam (RVN). The ARVN was in charge of perimeter and external ABD, whereas the role of internal security fell to VNAF military police. Reflecting the deficiencies of the RVN military as a whole, its base

defense forces were, in the words of one author, “As a rule under-strength, ill-trained, undisciplined, and poorly motivated.”⁸⁶ In addition, political infighting between senior leaders in the ARVN and the VNAF greatly hindered tactical-level cooperation between the two services for internal and external ABD. For their part, senior USAF leaders were apparently unconcerned regarding the vulnerability of US aircraft to VC/NVA attack; they preferred instead to focus on close-in internal security measures. Largely for these reasons, defenses at Da Nang, Tan Son Nhut, and Bien Hoa exhibited serious shortcomings in the early 1960s. The fact that the VC/NVA left these air bases unmolested during the United States’ early involvement in Vietnam meant that “base defense capabilities were untested, their weaknesses hidden, and the importance of the ABD mission obscured from US civil and military authorities.”⁸⁷

This situation changed abruptly with the events of the summer of 1964. The North Vietnamese navy’s attack on the USS *Maddox* and USS *Turner Joy* in the Gulf of Tonkin in August 1964 prompted retaliatory air strikes by the United States.⁸⁸ To support the RVN, and partially as a demonstration of resolve, Pres. Lyndon B. Johnson also dispatched additional USAF aircraft.⁸⁹ The subsequent arrival of large numbers of aircraft and personnel greatly increased the value of US air bases as targets to the VC. This point was not lost on US military leaders at a number of levels. For example, senior US commanders in the chain of command from the 2nd Air Division (the USAF component of Military Assistance Command, Vietnam [MACV]) to the Joint Chiefs of Staff (JCS) expressed a newfound concern for protecting US air bases from potential VC/NVA reprisal attacks.⁹⁰ The JCS concluded in September, however, that recent RVN efforts to strengthen the defenses of US air bases were satisfactory, and US ground forces were not needed for base defense.⁹¹ This opinion was shared by the commander, US Military Assistance Command, Vietnam (COMUSMACV), Gen William C. Westmoreland, and the commander in chief, Pacific Command (CINCPAC), Adm Ulysses S. Grant Sharp. As a result, the only defensive measures taken were the precautionary evacuation of one squadron of B-57s from Bien Hoa AB to the Philippines and the stationing of US Marines off the coast of Da Nang in case the security situation in South Vietnam deteriorated.⁹²

In October 1964, and notwithstanding the considered opinion of senior leaders regarding the adequacy of ABDs in South Vietnam, the commander of the 2nd Air Division complained to the commander

of Pacific Air Forces (PACAF) that ground defenses at Bien Hoa and Tan Son Nhut were still unsatisfactory.⁹³ Little more than a week after this complaint, a VC mortar company shelled Bien Hoa AB shortly after midnight on 1 November 1964. The attack destroyed five B-57s and severely damaged eight more. Four USAF Kaman H-43 Huskie helicopters and three VNAF Douglas A-1H Skyraider attack aircraft were also damaged in the attack.⁹⁴ A subsequent assessment concluded that a major contributing factor to the success of the attack was ambiguity regarding VNAF and ARVN defensive responsibilities for the area from which the mortar attack was launched. The Bien Hoa attack also prompted the first explicit directive concerning air support for ABD: one of the defensive measures directed by the COMUSMACV was the establishment of aircraft reaction forces—primarily A-1s and helicopters—at Bien Hoa and Tan Son Nhut that could respond in the event of repeated attacks.⁹⁵

In the wake of the Bien Hoa attack, General Westmoreland urged the RVN to redouble its efforts to strengthen the external defenses of US air bases. The RVN responded by increasing patrols and stationing more troops in and around the main bases. Even so, Gen Hunter Harris, commander in chief, Pacific Air Forces (CINCPACAF), continued to express grave doubts to the USAF chief of staff (CSAF), Gen Curtis LeMay, regarding the ARVN's ability to protect USAF air bases. Echoing the misgivings of senior USAF leaders in Vietnam who collectively felt that external defenses were inadequate, General Harris made renewed calls for the deployment of US ground forces to "secure and control about an 8,000-meter area around Da Nang, Bien Hoa, and Tan Son Nhut."⁹⁶ General Westmoreland, who was no doubt influenced by President Johnson's reluctance to escalate US involvement on the ground, denied Harris's request, claiming that the presence of US ground forces would cause the RVN to lose interest in protecting its own bases. The only concession made by General Westmoreland was the deployment of an additional 300 USAF security police to bolster internal air base security.⁹⁷

By the end of 1964, as the advisory phase of the war slowly gave way to more direct US involvement, external and internal base defense was still largely the responsibility of the RVN. This is all the more remarkable given the growing awareness, especially in USAF circles, of increasing evidence of the incompetence of the ARVN and VNAF in protecting USAF assets. Political sensitivities toward the HN precluded more active ABD measures involving US forces. Appeals made

by the 2nd Air Division and PACAF for additional US ground forces for ABD were repeatedly denied, even after the mortar attack on Bien Hoa. As the following material demonstrates, events in 1965 would significantly change the US approach to ABD in South Vietnam.

Escalation, 1965–68: Air Support for ABD Expands

President Johnson's reluctance to expand US involvement in Vietnam largely dissolved following a VC/NVA attack on a US Army detachment at Pleiku in February 1965 that killed eight soldiers and wounded 104.⁹⁸ The VC/NVA, having destroyed a South Vietnamese marine battalion and two ARVN Ranger companies at Bien Gia the previous December, were displaying greater aggressiveness and a growing ability to defeat frontline ARVN units in more conventional battles.⁹⁹ Concerned US officials increasingly doubted the ability of the politically and militarily feeble government of South Vietnam to stem further VC/NVA advances. Thus, in an attempt to compel the North Vietnamese government to stop its support for the VC insurgency in South Vietnam, President Johnson authorized Operation Rolling Thunder. This inconsistent program of carefully graduated air strikes against the North, which were designed to send unequivocal messages to the North Vietnamese leadership, would last until 1968.¹⁰⁰ More importantly, JCS restrictions prohibiting the use of jet fighters and bombers in South Vietnam were removed in March 1965, giving General Westmoreland almost unlimited authority to use them to fight the "in-country" war.¹⁰¹

Escalation of the Ground War

Concurrent with the escalation of the air war, the United States also began the rapid expansion of its involvement on the ground. The rationale for additional US ground forces was in large part based on the perceived need to protect US air bases being used for the Rolling Thunder air strikes from VC/NVA reprisal attacks. The first major ground combat force to land in South Vietnam was the 9th Marine Expeditionary Brigade (MEB), which came ashore at Da Nang in March 1965.¹⁰² Their stated mission was to "occupy and defend critical terrain features in order to secure the [Da Nang] airfield and . . . other US installations in the area against attack."¹⁰³ The JCS explicitly stated to the CINCPAC that the Marines were not to "engage in day to day actions against the Viet Cong."¹⁰⁴ The Marine landing was fol-

lowed in May by the deployment of the US Army's 173rd Airborne Brigade (ABN BDE) to secure Bien Hoa AB outside Saigon.

In July General Westmoreland proposed to Robert McNamara, secretary of defense, that 44 additional battalions be deployed to South Vietnam. The battalions had the primary purpose of securing US installations throughout the country:

The initial mission of these forces is to secure the base and its internal LOCs [lines of communication] through a combination of static defense and vigorous patrolling. After security has been established . . . those forces not required for base security will conduct offensive operations in the immediate vicinity to expand the Tactical Area of Responsibility (TAOR) around each base area. . . . As the base becomes more secure through the foregoing actions, the forces (over and above those required for security of the base) will be available to conduct offensive missions from the base area.¹⁰⁵

President Johnson approved Westmoreland's 44-battalion proposal in late July, emphasizing to the public that the primary mission of these forces was to protect US bases, not to engage in offensive operations against the VC/NVA. Echoing the sentiments of the president, the COMUSMACV's subsequent concept of operations for the rapidly expanding ground force in Vietnam listed the security of US bases as the primary task.¹⁰⁶

Despite public and private assurances throughout the first half of 1965 that US ground forces were to be used for strictly defensive purposes to protect US installations, events later in the year would draw US ground forces away from the defense of air bases and into more offensive roles. Rolling Thunder air strikes had at this time failed to deter Hanoi from actively supporting the VC insurgency in South Vietnam. In addition, a series of VC/NVA victories in the central highlands threatened to cut the country in two.¹⁰⁷ Westmoreland, therefore, asked for and received broad authority from President Johnson to launch US ground offensives independently of RVN forces in order to shore up the country's faltering defenses and to halt further VC/NVA advances. The original "enclave strategy" that focused on the protection of US air bases and other major installations was supplanted by what was to become a strategy of sustained search-and-destroy operations against VC/NVA units throughout the country.¹⁰⁸ In a USAF study conducted later in the war that examined the effectiveness of ABD from 1965 to 1968, the significance of this decision on ABD was noted:

A related air base defense problem was the unreliability or at least lack of responsiveness on the part of friendly forces responsible for the TAOR in which each base is located. In many instances, defensive units were removed from the local area without coordination with base defense forces. It appears that US ground forces often failed to completely understand the extreme differences in the vulnerability of airpower resources, as opposed to resources located at ground force installations. They were, therefore, less than responsive to Air Force needs. This shortcoming was compounded by US Army doctrines of land warfare which place emphasis on offensive operations while accepting a calculated risk in the protection of rear area installations.¹⁰⁹

MACV Policy on Air Base Defense and the USAF's Response

Westmoreland's shift in strategy from defense to offense left US air bases dangerously exposed to VC/NVA attacks. Early in August 1965, Westmoreland sent the 173rd ABN BDE, which was assigned to Bien Hoa AB for external defense, to the central highlands region on a four-week deployment to conduct offensive operations against the enemy. Taking advantage of the unit's extended absence, the VC launched a mortar attack against the base in late August that damaged six A-1Es, three Cessna O-1 Bird Dog liaison and observation aircraft, one F-100, and one Helio U-10 Courier light utility aircraft.¹¹⁰ The Bien Hoa attack was an ominous sign that US air bases would remain vulnerable to ground attack unless ABD was accorded its initial high priority. In response to a USAF inquiry conducted shortly after the attack seeking clarification of MACV's policy for base defense, the deputy COMUSMACV, Lt Gen John Throckmorton, reaffirmed MACV's stance that the ARVN and VNAF, not the US Army, had primary responsibility for installation security.¹¹¹ He also stated that major bases indeed had priority for defense but only against "strong VC mass attack."¹¹² Saying that MACV was "obviously . . . concerned about a mass attack, but not about a sneak attack," he confirmed that there were "no plans to tie down US troops to defend US air bases against mortar and sneak attack" because it "costs too much in troops."¹¹³

Westmoreland echoed the views of his deputy in a December memorandum to the 2nd Air Division commander, Lt Gen Joseph H. Moore, which emphasized the importance of MACV's offensive strategy and called upon the USAF to shoulder greater responsibility for local external ABD:

Of increasing concern . . . is the problem of the security of headquarters, logistics and communications installations, and airfields and helicopter staging

areas in a war with no front lines. In order to provide a high level of security to these installations, it would be necessary to deploy all US infantry elements in a defensive role. Obviously, this cannot be done and at the same time go over to the offensive and destroy the VC. Therefore, we must call for a greater level of participation in self-defense by every element . . . of this command. . . . I expect that our combat battalions will be used primarily to go after the VC and that we will not be forced to expend our capabilities simply to protect ourselves in this environment. This would be a vicious circle from which we could never emerge. Obviously, therefore, we must call upon all of our troops to perform not only a defensive role around their installations, but also they must take certain additional measures which we all know to be essential in achieving real security. I have in mind the necessity for patrolling, for outposts and for reaction forces. . . . I desire that all service units and all forces of whatever service who find themselves operating without infantry protection . . . will be organized, trained and exercised to perform the defensive and security functions which I have just discussed.¹¹⁴

In response to Westmoreland's letter, General Moore directed his air base commanders to strengthen perimeter and internal security measures but made no references to Westmoreland's call for external patrols, outposts, or reaction forces. General Moore's position can be interpreted as a reflection of the USAF's long-held belief that its responsibilities for base defense stopped at the base perimeter. This position unfortunately formed the basis of official USAF ABD policy in South Vietnam for the remainder of the war. Local external defense thus became a gray area for which neither the USAF nor the Army claimed any responsibility, leaving the approaches to US air bases vulnerable to infiltration by the VC/NVA.¹¹⁵

1966: Air Support for ABD Gets off the Ground

The USAF's ABD requirements grew considerably in 1966 as additional air bases opened up to support the influx of new aircraft. With expanded deployments to existing VNAF bases and the construction of new bases exclusively for the use of US forces, the USAF was operating out of five additional MOBs by mid-1966: Binh Thuy, Cam Ranh Bay, Nha Trang, Phan Rang, and Pleiku. USAF operations at Phu Cat and Tuy Hoa would commence early in the following year, bringing the total number of USAF MOBs in South Vietnam to 10.¹¹⁶ Due to its greatly increased operational responsibility, the 2nd Air Division was elevated to the status of a numbered air force, becoming the Seventh Air Force in April 1966; the new numbered air force re-

ceived a new commander, Lt Gen William M. Momyer, in July of that same year.¹¹⁷

MACV policy regarding service responsibilities for external base defense, as well as the USAF's subsequent refusal to take any action on the ground beyond the base perimeter, drove USAF leaders to look increasingly at airpower as a way to defend the approaches to its air bases. Since the vast majority of VC/NVA attacks against US air bases occurred at night, the way in which airpower was first used was flare illumination by C-123 and Douglas C-47 Skytrain flareships. This practice had been in place for the defense of hamlets and outposts since September 1962.¹¹⁸ Flares were used to provide illumination for ground defense forces as well as night strike aircraft. In some instances, flares alone were sufficient to halt an attack that was already in progress, as the VC/NVA soon learned that the dropping of flares normally signified an impending air strike.¹¹⁹ However, the use of C-123 transports for flare operations was discontinued in July 1966 as the demand for intratheater airlift skyrocketed.¹²⁰ This resulted in an acute shortage of flareships, which were increasingly being used to support Army and ARVN ground offensives and often left US air bases without illumination coverage for several days at a time.¹²¹

The development and fielding of the side-firing Douglas AC-47 Spooky gunship occurred at a time when the USAF was beginning to realize the gravity of its growing ABD problem.¹²² A modified version of the venerable C-47 cargo plane, the AC-47 was equipped with three rigidly mounted 7.62 mm miniguns mounted laterally in the cargo compartment and aimed out of the left side of the aircraft. It carried 21,000 rounds of ammunition and up to 56 illumination flares and had a flight endurance of over seven hours.¹²³ First tested in combat as part of an interim operational evaluation in December 1964, the AC-47 quickly proved its effectiveness in defending friendly ground forces against VC/NVA attacks.¹²⁴ Although the AC-47 was designed primarily for night close-air support of isolated outposts and hamlets, its utility for ABD soon became apparent. According to the authors of an analysis of fixed-wing gunship operations in Southeast Asia in 1971,

The aircraft was extremely effective in its assigned roles, but it soon became apparent that it could perform a variety of other tasks as well. The AC-47 was well-suited [sic] for air base defense against rocket, mortar, and ground assaults. The extended loiter capability of the AC-47 enabled two aircraft flying consecutive combat patrols to maintain an airborne alert over a base from sundown to sunrise. The presence of the AC-47 probably deterred many attacks, and the

aircraft's quick response and devastating firepower were instrumental in breaking off many attacks when they did occur.¹²⁵

After an 11-month development and training effort, the 4th Air Commando Squadron (ACS) became the first operational AC-47 unit in South Vietnam, arriving in November 1965.¹²⁶ To minimize response time to outposts and hamlets under attack, elements of the 4th ACS were dispersed to each of the four corps tactical zones (CTZ) in South Vietnam. Tan Son Nhut became the 4th ACS headquarters and main operating base (III CTZ), with forward operating locations (FOL) at Da Nang (I CTZ), Pleiku (II CTZ), Nha Trang (II CTZ), and Binh Thuy (IV CTZ).¹²⁷ To alleviate overcrowding at Tan Son Nhut, the 4th ACS headquarters was transferred to Nha Trang AB in May 1966, collocating with its parent unit, the 14th Air Commando Wing (ACW).¹²⁸ To fill the gap left in III CTZ, a flight of AC-47s was moved to Bien Hoa.¹²⁹

Shortly after the unit's arrival in South Vietnam, ABD became one of the 4th ACS's primary missions. On 20 February 1966, the VC launched a mortar attack on Binh Thuy AB, damaging one aircraft.¹³⁰ An AC-47 on ground alert launched immediately, located the enemy mortar position, and silenced it.¹³¹ Two months later, on 22 April, timely action by an AC-47 broke a mortar attack against Pleiku AB that destroyed two aircraft. On 8 July, the VC again mortared Binh Thuy, destroying one aircraft; two AC 47s arrived within three minutes and halted the attack.¹³² In December, the 4th ACS responded twice in defense of US bases. On 4 December, a combined mortar and sapper attack on Tan Son Nhut was defeated by a mixed force of AC-47s, A-1Es, and helicopter gunships.¹³³ Due to the enemy's close proximity to friendly ground forces, the AC-47s were limited strictly to flare illumination during the attack. As a result, the VC successfully damaged 21 aircraft.¹³⁴ A recoilless rifle attack against Binh Thuy on Christmas Eve was stopped by the immediate response of AC-47s in conjunction with USAF and Army ground units. The Binh Thuy base commander credited the action of the AC-47s, which were flying seven sorties during the night, with preventing major damage to the base.¹³⁵

Quickly realizing the value of AC-47s in the base defense role, the Seventh Air Force commander approved a gunship alert plan developed by Col Gordon Bradburn, 14th ACW commander. Under this plan, which was implemented in July 1966, one AC-47 flew airborne

alert from a half-hour before sunset to a half-hour after sunrise overhead of each of the main bases in the four CTZs. One additional AC-47 was placed on 15-minute ground alert at each base for additional firepower or if the airborne gunship was diverted away from the base on a higher priority mission. This alert plan formed the basis of gunship operations for the remainder of the war.

Air support for ABD was not the exclusive domain of the USAF. US Army aviation also played a significant role in defending US air bases beginning early in the war. On 13 April 1966, Tan Son Nhut became the target of a heavy mortar and recoilless rifle attack that destroyed two VNAF aircraft and damaged 62 USAF aircraft. Two Army Bell UH-1 Iroquois (Huey) helicopters launched 20 minutes after the attack was initiated, providing fire support, illumination, and surveillance of potential enemy withdrawal routes. One of the significant lessons learned from the attack was the inadequacy of existing ground alert measures in responding with immediate suppressive fire on enemy mortar positions. As an interim measure, MACV ordered the Army to place two armed UH-1s on airborne alert over Tan Son Nhut on the night of 13 and 14 April, but the Army maintained that the helicopters were incapable of staying aloft for such extended periods.

As the AC-47 alert plan would not go into effect for another three months, no gunship was overhead the base on the night of the attack. This fact was duly highlighted by base security officials:

Security . . . officials had suggested the maintenance of an airborne-alert firepower capability over the base during prime attack hours. On the other hand, Tactical Air Control Center [TACC, Seventh Air Force's command and control center] officials advised that it would be futile to place an AC 47 over the station since the aircraft could not fire until clearance had been granted by CMR [Capital Military Region, the military command element in charge of the defense of the Saigon capital area] through TACC. It was indicated that the delays inherent in this procedure, as compared with the expected short duration of an attack, did not warrant keeping an armed aircraft over the base. However, the Deputy Senior Advisor, CMR, stated that an airborne-alert aircraft could communicate directly with the JOC [Joint Operations Center] at CMR and request permission to fire from the US Duty Officer. This officer then would clear this request with his counterpart at the JOC. . . . Such clearance should normally take a moment or two only.¹³⁶

The issue of receiving timely clearance to fire would be a recurrent problem for AC-47 ABD operations. This problem, unfortunately, would never be satisfactorily resolved throughout the war. This di-

lemma was first noted in an early PACAF report that recapped the USAF's operations in Southeast Asia during 1966. Although the problem was identified, no solution was offered:

Attacks on bases had consisted of standoff mortar/recoilless rifle fire, the so-called "suicide/commando" raid [e.g., sapper attacks], or a combination of both. The rapidity with which the attacks were executed called for the consideration of several areas. . . . Methods and procedures for coordination of firepower support, to include authority to fire or otherwise engage hostile forces by airborne aircraft, security forces, and defending ground forces when the base was under actual attack, were complicated by split jurisdiction over the areas within and adjacent to certain air bases. This matter had to be resolved if the full weight of the defense was to be employed rapidly and decisively.¹³⁷

Early Assessments of Air Support for ABD

Throughout 1966 and into the first months of 1967, various agencies looked into the growing problem of base defense in South Vietnam. One of the first studies that looked into the role of airpower in external base defense was conducted in January 1966 by PACAF's Limited War Security Study Group. The group envisioned a primary external defense zone encircling the base that extended outwards 4,000 yards beyond the air base perimeter. This distance was chosen because it was considered large enough to encompass the range of 60 mm and 81 mm mortars used by the enemy. Aerial reconnaissance and air strikes were considered key elements in securing this zone.¹³⁸

The study group therefore strongly recommended the organization and employment of an ABD "air reconnaissance/strike force" to provide "essential air reconnaissance coverage and air strike capability in support of the security/defense forces."¹³⁹ Not yet aware of the AC-47's burgeoning role in ABD, the group recommended a light, multi-purpose utility aircraft that was capable of day and night reconnaissance, flare illumination, and fire support. Other desired attributes included the ability to operate out of a dirt airstrip, a short takeoff and landing (STOL) capability, and an unrefueled loiter time of at least five hours. Two aircraft considered by the group were the Helio HST-550 Stallion and the U-10D Super Courier.¹⁴⁰

A second study, conducted by RAND in December 1966, looked at base defense "best practices" in South Vietnam for their potential applicability to US air bases in Thailand. Citing the AC-47 specifically, the report determined that the experience thus far in Vietnam demonstrated that an airborne patrol in the immediate vicinity of the air

base, especially during the hours of darkness, could satisfy several mission requirements, including deterring potential attackers, assisting in detecting enemy forces that threatened the base, and providing immediate firepower in support of base defense forces in the external and perimeter defense zones. The report listed several functions that patrol aircraft could provide: surveillance and detection of enemy activity, identification of enemy positions, control and direction of other aircraft or ground forces for reactive strikes, flare illumination, and firepower. The report also emphasized the importance of irregular flight patterns and varying patrol timing to avoid predictability. The report also noted the utility of ground alert helicopters for base defense, crediting them with the capability to provide the quickest response to enemy attacks.¹⁴¹

In the third assessment of ABD during this time, the USAF inspector general submitted a required operational capability (ROC) document to the Air Staff in January 1967 that called for an “airborne vehicle” for base defense in “contingency and limited war operations.”¹⁴² Citing the USAF’s experience in Vietnam thus far, the ROC began by critiquing the external ground defense of air bases:

Security for air bases within hostile environments cannot be limited to the confines of installation perimeters. Our people, aircraft and equipment, and facilities must be defended from all enemy ground threats, including those directed from beyond installation perimeters. It is recognized that ground forces are responsible for external defense of our air bases. However, they may not always be available to provide the degree of defense required for continued air operations. Instances have occurred and may occur again where ground forces are diverted from static defense to offensive operations.¹⁴³

The ROC also stated that because of “political limitations and . . . roles and missions considerations,” the USAF should not assume that air base commanders would have the authority to deploy base defense personnel and equipment into the land area beyond the base perimeter.¹⁴⁴ The ROC concluded, therefore, that an “airborne air base defense system” was needed to assist base defense forces in countering threats from enemy infiltration, assault by small groups, and standoff attacks.¹⁴⁵ Accordingly, the ROC stated that such a system would need to be capable of surveillance, detection, and identification of personnel and vehicles out to 10,000 meters from the base perimeter and be able to engage those forces identified as hostile. The ROC also stipulated that the system should be air transportable for

rapid deployment and that it should be assigned to “each tactical unit deployed.”¹⁴⁶

By the end of 1966, several operating concepts were developed that would shape ABD operations for the remainder of the war. The airborne alert plan for AC-47s, the use of flareships, and the helicopter’s versatility for base defense would remain central aspects of the US effort to defend its air bases in South Vietnam.

1967: The Standoff Threat to Air Bases Increases

The tempo and scale of air support for base defense picked up significantly in 1967. On 7 January 1967, the 4th ACS again rose to the defense of Pleiku AB when it came under a combined mortar and sapper attack. AC-47s provided flare illumination for the defending ground forces, who credited the AC-47’s illumination support as a crucial factor in preventing the enemy from penetrating the air base perimeter.¹⁴⁷ At Binh Thuy, USAF intelligence officials concluded that the combined action of AC-47s and ground reaction forces had prevented at least seven attempts to bombard the base during the first quarter of 1967.¹⁴⁸ However, the most significant incident during the first part of 1967 was the standoff rocket attack against Da Nang on 27 February, which damaged 17 USAF and Marine Corps aircraft.¹⁴⁹ An AC-47 located the rocket launch positions and laid down fire, but the response was not quick enough to avert significant damage to the base. AC-47 response to a subsequent rocket attack on Da Nang on 15 March that damaged seven US aircraft was hampered because the base security plan did not include procedures for gunship employment in the event of an attack; this oversight was eventually rectified.¹⁵⁰

The February rocket attack on Da Nang was an ominous sign of the increasing threat to US air bases. This attack consisted of the first known use of the spin-stabilized Soviet 140 mm rocket in South Vietnam. After the Da Nang attack, the VC/NVA made increasing use of Soviet 122 mm/140 mm and Chinese 102 mm rockets to attack US air bases. Compared to mortar shells, the new rocket artillery caused much greater damage because of the tremendous amount of shrapnel released on detonation.¹⁵¹ In addition, these weapons had an effective range of between 8,000 and 11,000 meters. This far exceeded the 5,700-meter range of the 120 mm mortar, which heretofore had been the longest-range weapon in the VC/NVA inventory.¹⁵² As could be expected, this new capability, with its increased standoff range, greatly

exacerbated the problem of detecting and reacting to enemy standoff attacks.

The increasing incidence of VC/NVA rocket attacks against US air bases prompted Seventh Air Force to take a number of steps. Concerned with the upswing in VC/NVA standoff attacks, the Seventh Air Force's director of security police concluded that "at the present time and in the foreseeable future, the AC-47 is the best deterrent we have to attack by mortar, recoilless rifle, or rocket. . . . It is apparent that we can achieve considerably greater success if we keep an AC-47 airborne over each base during the critical hours each night."¹⁵³ Accordingly, one of the first steps taken by the USAF was a reappraisal of the minimum number of AC-47s needed to cover all 10 MOBs during the vulnerable night hours. In an urgent message to the CINCPACAF in March, the Seventh Air Force commander, General Momyer, requested 10 additional AC-47s for the 4th ACS and warned,

Night attacks on SVN [South Vietnam] air bases and military complexes are becoming increasingly more frequent and aggressive. The recent attack on Da Nang with 140 mm rockets exemplifies the enemy's capability to mount an attack from beyond what was previously considered an effective range. To adequately deter, detect, and destroy these night attacks requires additional night airborne illumination and fire support acft [*sic*]. The AC-47 has continually proved an effective weapon system in combating night attacks but the present force of 22 AC-47s is insufficient to provide all-night airborne alert over major US military air bases. . . . Lack of sufficient AC-47s precludes all-night coverage at more than half the major bases.¹⁵⁴

The CINCPACAF forwarded General Momyer's request to the CSAF in April, adding that the air base security situation was critical and that additional AC-47s were a priority matter. However, because of USAF and DOD indecision regarding the design of the follow-on gunship to the AC-47, as well as a manpower ceiling that limited additional deployments to Vietnam, it would not be until August that the secretary of defense authorized the additional AC-47s.¹⁵⁵ In addition to the request for more gunships, Seventh Air Force also took immediate steps to increase its night illumination capability. The Seventh Air Force commander felt that more persistent night illumination could deter potential attackers and increase the chances of detecting enemy attack preparations, such as the setting up of mortar and rocket firing sites and the transportation of weapons and artillery rounds. Beginning in late March, psychological warfare C-47s were pressed into the flareship role, augmenting the existing small fleet of

VNAF and USAF C-47 flareships (call sign “Moonshine”). The expanded flareship operations included a program of nightly random flare drops around Pleiku, Nha Trang, and Bien Hoa and continuous flare illumination of a six-to-nine-mile-wide belt (the so-called rocket belt) surrounding Da Nang.¹⁵⁶

Air support measures for base defense were also undertaken at the local level. To provide greater warning, USAF security police started flying as airborne observers on helicopter reconnaissance flights at some air bases in an attempt to discover evidence of enemy site preparations for standoff mortar and rocket attacks.¹⁵⁷ Use was also made of forward air controllers (FAC) for visual reconnaissance (VR) where available. FACs were normally assigned to a specific geographic area and thus became thoroughly familiar with their local environment. This was deemed an essential aspect of VR since an observer who was attuned to the pattern of life in a given area was more likely to discern anomalous activity that could indicate possible enemy activity.¹⁵⁸

More significant steps were being taken in the IV CTZ, where the air base at Binh Thuy had been attacked by mortar or recoilless rifle on five separate occasions between December 1966 and May 1967.¹⁵⁹ In response to the repeated attacks against the base, which housed a detachment of AC-47s and UH-1Fs, the 14th ACW in May began putting two armed UH-1Fs from the 20th Helicopter Squadron (HS) on a two-minute ground alert to supplement the nightly AC-47 combat air patrol (CAP).¹⁶⁰ According to the 14th ACW, the impetus for the ground alert helicopter program at Binh Thuy stemmed from the fact that the CAP AC-47 was often called away to support higher-priority missions such as troops-in-contact and that furthermore, during an attack, ground alert fixed-wing aircraft could not launch in sufficient time to locate and engage enemy attackers.¹⁶¹ To minimize response time, the 14th ACW commander granted launch decision authority to the helicopter aircraft commander:

The armed UH-1F helicopter, hereafter referred to as Green Hornet, will be launched during any attack on the base. Blanket authority to launch has been provided the aircraft commander by the Commander, 14th ACW. No written authority or frag system is in effect. Normally, the first notification of attack will be when the first round impacts on the base. The crew will proceed to the cocked aircraft, launch with or without tower contact and attempt to determine the position of the attacking forces. If detection is successful, Green Hornet will direct all available firepower against the positions in an attempt to suppress the attack and destroy the hostile forces.¹⁶²

The 14th ACW's helicopter alert program quickly gained the attention of Seventh Air Force. In a 24 May meeting chaired by Seventh Air Force's director of security police, several of the attendees suggested that the helicopter alert program at Binh Thuy be evaluated for expanded applicability throughout Vietnam.¹⁶³ It was proposed that the first phase of the evaluation be limited to Binh Thuy, since it was currently the sole operating location for the USAF's small but growing inventory of armed UH-1Fs. Furthermore, since Binh Thuy was also home to the FAC theater indoctrination school and the 22nd Tactical Air Support Squadron (TASS), it was decided that the evaluation would incorporate night VR missions by O-1s and Cessna O-2A Skymaster FAC aircraft.¹⁶⁴ Nightly VR missions by USAF FACs equipped with light intensification devices such as the Starlight Scope, a first-generation night vision device, could help pinpoint enemy activity outside the air base. Once suspicious personnel were positively identified as hostile, the ground alert UH-1Fs or friendly artillery fire could be called in response.¹⁶⁵ The base defense test plan for Binh Thuy was approved in June with the concurrence of General Momyer.¹⁶⁶

The MACV Command-Wide Base Defense Seminar

As Seventh Air Force's request for additional gunships wound its way up the chain of command through the staffs of PACAF, the CINCPAC, and the JCS, VC and NVA attacks against air bases continued unabated. On 7 May, a recoilless rifle attack on Binh Thuy AB destroyed four VNAF A-1s and two Sikorsky H-34 Choctaw helicopters; 19 other aircraft received damage.¹⁶⁷ An AC-47 on CAP overhead the base responded with gunfire and illumination to help friendly ground forces break up the attack.¹⁶⁸ Five days later, on 12 May, three AC-47s were called in to defend Bien Hoa against a combined rocket, mortar, and recoilless rifle attack that destroyed four aircraft and damaged 32.¹⁶⁹

Due to the unrelenting attacks on US bases, MACV convened a command-wide base defense seminar on 12 June 1967 so that base defense experiences and lessons learned could be shared across the command. Seminar participants reviewed current base defense practices and procedures and identified several areas for improvement. Attendees were unanimous in praising the effectiveness of the AC-47 for base defense and concluded that additional gunships were needed to

cover expanding base defense requirements. In the words of the III Marine Amphibious Force (MAF) representative from the I CTZ, the AC-47 was “excellent for detecting as well as for enforcing against intrusion or attack.”¹⁷⁰

Seminar participants also noted the need for additional helicopters for base defense, envisioning three distinct missions for them. The first mission, which was along the lines of the Seventh Air Force test plan at Binh Thuy, consisted of armed helicopters on ground alert that would act as an immediate reaction force to counter enemy attacks and supplement the existing AC-47 CAP. For the second mission, helicopters would be used to provide immediate airlift for quick reaction ground forces. Airmobile or mechanized reaction forces, explained the II Field Force Vietnam (FFV) representative, provided the only means of actually catching the enemy force, since the VC/NVA withdrew almost immediately after launching a standoff attack. Finally, helicopters would be used for night illumination for other armed aircraft or friendly ground forces. A tactical innovation with helicopter illumination in the IV CTZ had proven to be very effective in stemming VC/NVA standoff attacks. Called the “Firefly” system, one helicopter lightship mounting an airborne searchlight was paired with two armed helicopters and conducted nightly air patrols beyond the air base perimeter out to the effective range of enemy mortar (bases in the IV CTZ had not yet come under attack from long-range rocket artillery). According to the IV CTZ representative, the Firefly system was a valuable deterrent, and that “experience with fireflies over critical areas has definitely shown that Viet Cong attacks drop off drastically when these are flown for extended periods of time.”¹⁷¹

The IV FFV representative, echoing the sentiment of the other participants, concluded that active defense measures were the best means of defense. In his opinion, this involved ground patrols and ambushes out to effective mortar range, as well as the use of “real and dummy [helicopter] flights, especially after dark,” because the VC, “not knowing which is which, must react as if each flight was an active mission.”¹⁷² In his closing remarks to the seminar chairman, an Army representative aptly summed up the prevailing view of his fellow attendees:

This is a combat situation; the enemy is dedicated to harassing our rear areas. There is no way in which we can assure a perfect defense against all types of attack. . . . Even with optimum fencing, lighting and clearing, and the use of combat forces equipped with the latest in detection and night fighting devices, the enemy can mortar or attack at will. . . . We must insure that the cost of his

attack is maximized. If we can make it prohibitive, we will have established a deterrent. The establishment of this deterrent should be our objective rather than striving for impregnable defenses with what we have available.¹⁷³

On 15 July, little more than one month after the MACV base defense seminar, a major VC/NVA rocket attack on Da Nang killed eight personnel and wounded 175. The attack also destroyed 10 USAF and Marine Corps aircraft and damaged another 49.¹⁷⁴ Although friendly artillery and five AC-47s responded with suppressive fire, the attack lasted for nearly 20 minutes.¹⁷⁵ The need for an effective deterrent became more apparent with each increasingly destructive attack on US air bases.

Additional AC-47s Arrive

On 15 August 1967, Secretary of Defense McNamara finally acceded to Seventh Air Force's request for more gunships and authorized 10 additional AC-47s for Vietnam.¹⁷⁶ To prepare for the arrival of the additional gunships, the USAF activated a new squadron under the 14th ACW, the 14th ACS, with an authorization of 16 AC-47s.¹⁷⁷ To fill out the new squadron, Seventh Air Force transferred six gunships from the 4th ACS to the 14th ACS, thus giving each squadron 16 aircraft. Additionally, in light of the increased flexibility derived from the additional aircraft and crews, Seventh Air Force and the 14th ACW developed a new basing scheme in September to optimize AC-47 support for base defense.¹⁷⁸ In this plan, the 4th ACS, with its headquarters remaining at Nha Trang, became responsible for fire support in the I and II CTZs, with FOLs at Da Nang, Pleiku, and Phu Cat. The 14th ACS, also headquartered at Nha Trang, had responsibility for support in the III and IV CTZs, with FOLs at Phan Rang, Bien Hoa, and Binh Thuy.¹⁷⁹

The new basing plan, as well as the larger gunship force, prompted Seventh Air Force to refine its procedures for C2 of the AC-47 fleet. Seventh Air Force exercised control over in-country air operations through the TACC at Tan Son Nhut AB. By the end of 1967, gunship operations were centrally tasked by the TACC's Psychological Warfare and Herbicide Plans Branch in Combat Plans.¹⁸⁰ This branch published the gunship alert "frag" (i.e., the fragmentary order that specified gunship mission taskings) on a periodic basis; a daily frag was unnecessary since the AC-47 mission schedule did not vary significantly from one night to the next. The alert frag was sent to all

ground units and included the location of all AC-47s in the four CTZs, the call signs of each aircraft, the type of alert being performed (e.g., airborne alert or ground alert), and the start and end time of each alert window.¹⁸¹

Generally, each gunship FOL and MOB had two or three AC-47s listed on the frag.¹⁸² The typical arrangement was for one AC-47 to cover the airborne alert for the first half of the night, with the second gunship taking off sometime after midnight to cover the remainder. The third aircraft was normally placed on a 15-minute ground alert in case the airborne gunship aborted or was diverted to another mission.¹⁸³ Under this alert plan, at least nine gunships were on airborne alert each night at any given time; during periods of overlap from one alert window to the next, up to 12 gunships might be aloft.¹⁸⁴ The alert frag was easily modified by publishing a revision showing only the changed items, although the TACC maintained close coordination with the 14th ACW if significant changes needed to be made.¹⁸⁵

Although gunship operations were centrally planned and tasked by the TACC at Tan Son Nhut, nightly execution was largely delegated to the various direct air support centers (DASC) in each CTZ.¹⁸⁶ All gunship airborne alerts and fragged missions in a given CTZ were controlled by that zone's respective DASC, which had divert authority for airborne alerts in order to facilitate quick responses to immediate requests.¹⁸⁷ An exception was made for the last available gunship on airborne alert, which could be diverted only with the TACC's approval. The TACC also retained approval authority for scrambles from ground alert, intercorps diversions, and extensions of crew time beyond the time specified in the frag.¹⁸⁸ In all circumstances, the TACC's combat operations center retained ultimate veto power over the DASCs.¹⁸⁹

The Safe Side Report

In October 1967 the USAF inspector general published a functional study that sought to determine the USAF's security capability requirements for protecting air bases located in hostile environments.¹⁹⁰ Containing an entire section devoted to the subject of air support, the study maintained that the primary purpose of air support was to extend the surveillance and early warning capability of base security forces; fire support was viewed as a secondary function. The study also concluded that air support, being an integral part of the base defense system, "should be provided for each air base located in a hostile envi-

ronment” and be locally “controlled through the base defense command/control system,” not through some faraway command center.¹⁹¹

Regarding helicopters, the study echoed many of the findings of the MACV base defense seminar and earlier reports, stating that the “takeoff, hovering and landing characteristics of helicopters make them ideally suited for airborne security operations.”¹⁹² In particular, the study emphasized the importance of troop-carrying helicopters, given their ability to transport security forces to intercept, ambush, or pursue unidentified personnel. Helicopter air mobility was seen as especially useful in situations where an air base was located in a densely populated area and, therefore, required security personnel to conduct close-quarters interceptions to discern hostile from friendly.¹⁹³

For environments in which the danger from enemy small arms and antiaircraft fire were unacceptably high, the study suggested the use of the remotely piloted Gyrodyne QH-50 drone helicopter, which could carry over a thousand pounds of electronic surveillance equipment or ordnance and had an operational radius of 23 miles.¹⁹⁴ Just as novel was the study’s consideration of a motorized sailplane for base defense. Aimed at tackling the problem of enemy infiltrators being forewarned of an impending aerial surveillance sweep because of the sound of an aircraft’s engine, the study conjectured that a motorized sailplane, operating in glider mode with the engine off, could catch enemy forces unawares.¹⁹⁵ These concepts proved to be ahead of their time, as the state of technology in the 1960s was not yet mature enough to bring these ideas to fruition.

Tet, 1968: Air Support for ABD Put to the Test

The year 1968 began much like the previous. On 3 January, Da Nang was again rocketed by enemy forces. During a barrage of 122 mm rockets that lasted nearly 10 minutes, one aircraft was destroyed and 20 received damage.¹⁹⁶ An AC-47 flying CAP spotted the launch sites and began firing on the enemy positions. Quick action by the gunship crew was credited with shortening the attack and preventing further damage. Twelve days later, on 15 January, the 14th ACS finally became operational with responsibility for fire support and base defense in the III and IV CTZs.¹⁹⁷ Significantly, in two short weeks, the Seventh Air Force’s newest gunship squadron would be thrust directly into the midst of one of the largest enemy offensives of the war.

The Tet Offensive

On 30 January, coincident with the Vietnamese Lunar New Year holiday known as Tet, VC and NVA forces launched a nationwide offensive against most major urban centers, provincial capitals, and military installations in South Vietnam. Hoping to catch RVN and MACV forces off guard and expecting the population of South Vietnam to welcome them as liberators, the enemy had infiltrated arms and personnel into the South during the preceding weeks.¹⁹⁸ Although the offensive achieved a degree of operational and strategic surprise, its course was halted by mid-February, with sporadic fighting continuing well into March.

During the Tet offensive, air bases were a prime target, with every major USAF and VNAF installation coming under attack. From Da Nang to Binh Thuy, mortar, rocket, and recoilless rifle rounds rocked air bases. In the case of Tan Son Nhut and Bien Hoa, multibattalion VC/NVA ground attacks added to the mayhem. On 30 January, mortars and 122 mm rocket artillery shelled Da Nang, resulting in the destruction of five aircraft and damage to an additional 25.¹⁹⁹ On 31 January, Pleiku received harassment fire, while a light ground probe tested Binh Thuy.²⁰⁰ The day's most significant attacks, however, were the multibattalion assaults against Bien Hoa and Tan Son Nhut, which were eventually turned back at the cost of 27 US personnel killed and 112 wounded. Afterwards, Bien Hoa continued to receive enemy rocket fire, with attacks on 9, 11, and 13 February.²⁰¹ Da Nang was rocketed again on 1 and 3 February, and from 3 to 16 February, nine separate mortar and recoilless rifle attacks bombarded Binh Thuy. The toll on the USAF was heavy. By the middle of February, the USAF had suffered 14 aircraft destroyed and 95 damaged due to enemy ground attacks.²⁰²

Because these attacks occurred nearly simultaneously and spanned the entire length and breadth of South Vietnam, the Tet offensive was the most serious test of in-country air support for base defense to date. Support from AC-47s, C-47 fleaships, and Army UH-1 light fire teams (LFT) proved to be critical for base defense. In addition, the chronically overworked and undermanned O-1 and O-2 FACs flew missions that were essential: conducting day and night VR missions to locate enemy rocket positions and weapons caches, adjusting counter-artillery fire to knock out VC/NVA rocket launch sites, and controlling air strikes in support of air base security forces.²⁰³

In the aftermath of the Tet offensive, several problems were identified with ABD, although none of them were particularly surprising or even new. The first was the shortage of AC-47s and flareships. Although the gunship fleet had expanded by 30 percent with the establishment of the 14th ACS and the psychological warfare C-47s were now flying secondary duty as flareships, these forces were insufficient to keep up with the greatly increased demand for air support for base defense. This was not due to a lack of effort but spoke instead to the limits of human and mechanical endurance. For example, the 14th ACS, with only 13 assigned aircraft, averaged 11 missions and 168,000 rounds expended every night during the entire month of February.²⁰⁴ Other organizational restrictions limited the effectiveness of the gunships. The problem of receiving clearance to strike enemy positions, even in cases where the FAC had directly observed an enemy mortar or rocket attack that was in progress, was a significant operational impediment. According to the Seventh Air Force rules of engagement (ROE) that were in effect at the time, all targets selected for an air strike required the HN approval of the province chief or “higher ARVN authority.”²⁰⁵

The inherent delays in this process unfortunately favored the enemy, whose standoff attacks often lasted less than 10 minutes. In one instance, clearance to strike an enemy mortar position near Saigon took three days to process. The difficulties with strike clearances were similar elsewhere. In the IV CTZ south of Saigon, delays of up to one hour were not uncommon. Some of the attempted fixes for the problem involved the following: getting the necessary political clearance in the planning process (which only worked for preplanned strikes), implementing precleared free-fire zones that were valid for certain time periods, and imposing nightly curfews—with any movement after the curfew assumed to be enemy.²⁰⁶

Other difficulties plagued the C2 of airborne ABD, including the ability to communicate. Citing deficiencies with their standard-issue radios, USAF security police identified a need for more powerful and portable radio systems that could communicate directly with support aircraft.²⁰⁷ According to one post-Tet assessment, “Direct communications with supporting units (LFTs, AC-47s, flareships) was considered an immediate requirement. Time-lags in requests made the supporting fire less effective during the attack.”²⁰⁸ Another problem indirectly related to C2 was the perennial issue of the continued heavy reliance on RVN forces for base defense.²⁰⁹

One positive air support lesson that emerged out of Tet was that Army LFTs proved to be highly effective in the base defense role, particularly when they were under the control of a FAC. Filling the support gaps that resulted from the overstretched AC-47 fleet, an LFT paired with a FAC proved to be a potent combination. Army commanders were highly supportive of this tactic, since the FAC was able to employ the LFTs very effectively. The effectiveness of the FACs was based on their knowledge of the total air picture and their familiarity with the local terrain. For their part, FACs valued the responsiveness of the LFTs, considering the LFTs “more important to them in this type of situation [ABD] than tactical fighters, particularly because of their almost immediate response time. In some cases, during enemy attacks, the LFTs beat the FACs off the ground.”²¹⁰

Another positive development was that by this point in the war, formal acknowledgement of air support's critical role in base defense was appearing in official regulations. PACAF released a new air base security manual shortly after the Tet offensive that emphasized the importance of air support in external defense:

The overall defense system of any major fixed installation must encompass an area extending beyond the maximum range of the standoff weaponry possessed by the enemy forces. Although USAF security forces are normally restricted from deploying beyond the base perimeter, other USAF resources must be utilized as an integral part of any total area defense system. Certain aircraft, in conjunction with armed helicopters, perform a vital airborne reaction/punitive role, while Forward Air Controllers, photo reconnaissance, infrared reconnaissance and electronic surveillance aircraft are capable of providing advanced warning of enemy buildup and attack. USAF commanders must insure that the maximum possible use, limited only by primary mission requirements, is made of such resources.²¹¹

This guidance was repeated when the PACAF manual was revised in 1971.²¹² It is clear that at least for PACAF, the USAF's experience in Vietnam had validated airpower's role in base defense.

Rocket Watch and the Controversy over ROE

The VC/NVA made increasing use of rocket assaults against air bases as part of the next phase of its 1968 campaign.²¹³ From 18 February to 1 March, Tan Son Nhut AB was rocketed six times; seven aircraft were destroyed and 75 were damaged.²¹⁴ Just as before, the cumbersome approval process for obtaining clearance to fire hampered the ability to counter these attacks with immediate air strikes.

Consequently, on 24 February, Seventh Air Force relaxed the ROE for O-1 FACs and AC-47s operating within 25 km of Tan Son Nhut and Bien Hoa air bases, implementing a policy of “returning fire with fire”; this program was dubbed the Rocket Watch.²¹⁵ Invoking the “authority of a commander to defend his forces from enemy attack,” General Momyer authorized FACs and AC-47s to “initiate fire on enemy rocket positions which are in the process of firing against friendly forces and installations.”²¹⁶ General Momyer decided that stopping enemy rocket attacks on friendly troops and bases warranted the slight additional risk to US and RVN ground forces. However, an essential part of the relaxed ROE was that FACs and AC-47 aircraft commanders were required to fly with the latest information on friendly troop positions to minimize the risk of fratricide.²¹⁷

On 1 March, Seventh Air Force again modified the ROE, extending the application of Rocket Watch procedures beyond Tan Son Nhut and Bien Hoa to all of South Vietnam. AC-47 crews were now “authorized to initiate fire on enemy rocket/mortar positions which are in the process of firing against friendly forces and installations” in all four CTZs.²¹⁸ On 26 April, in a further relaxation of the Rocket Watch ROE, Seventh Air Force approved a proposal by III DASC authorizing Cessna A-37 Dragonfly light attack aircraft with a qualified FAC in the right seat to deliver ordnance on enemy rocket positions that were in the process of firing on friendly forces or bases.²¹⁹

Shortly thereafter, on 2 May, the COMUSMACV expressed concern that Seventh Air Force’s relaxed ROE had the potential for “unacceptable casualties to friendly ground forces.”²²⁰ General Westmoreland was not convinced that the FACs and gunship crews could keep “thoroughly abreast of exact locations of friendly units and personnel” due to the “fluid tactical situation” on the ground.²²¹ Consequently, General Westmoreland requested that Seventh Air Force rescind the broadened authority that was granted to FACs and gunship crews back in February. However, for reasons unknown, General Momyer construed the COMUSMACV’s request to apply only to A-37s; thus, he withdrew the 26 April authorization for A-37s to return fire with fire, while leaving in place the relaxed ROE for AC-47s and FACs.²²² Soon afterwards, a series of discussions ensued between the Seventh Air Force’s TACC director and the MACV staff that were prompted by a message from the commanding general, II FFV, to General Momyer requesting that the relaxed ROE for gunships and FACs be rescinded. In the end, Seventh Air Force was directed by the

COMUSMACV on 28 May to withdraw all authorizations for any aircraft to strike enemy rocket positions without first obtaining clearance to fire from the appropriate ground commander.²²³

On 30 May, in accordance with the COMUSMACV's directive, General Momyer issued a message revoking the 24 February authorization that granted AC-47s and FACs permission to fire on enemy rocket positions without clearance.²²⁴ In a separate letter to the COMUSMACV, General Momyer stated that he strongly disagreed with the decision:

In compliance with your directive I have temporarily withdrawn the authorization for Spookies [AC-47s] and FACs to fire on rocket positions. However, I request reconsideration of your decision. I strongly believe that Spooky on station and authorized to immediately fire upon positively identified rocket sites in the process of launching rockets upon Bien Hoa and/or Tan Son Nhut air bases complements the ground forces [*sic*] action to prevent such type attacks. If permission for Spooky to fire must be withheld until the ground force commander can approve, the effect of Spooky fire has been negated since either additional rockets have been launched and/or the VC have withdrawn with their equipment. This exposes two of the largest bases in Vietnam with eighteen thousand people and 500 million dollars of equipment to additional rocket fire. I feel this is a far greater risk than the possibility of injury to friendly patrols.²²⁵

The III DASC at Bien Hoa, which was responsible for air support in the III CTZ, including the Saigon area, agreed with General Momyer, concluding that the Rocket Watch concept, "more than any other, has kept the enemy at bay" and that the relaxed ROE should be reinstated.²²⁶ The III DASC officials cited the fact that after implementation of the Rocket Watch patrols, the frequency of rocket attacks decreased sharply and that the few attacks that did occur were "small and ineffective."²²⁷ Enemy rocket attacks did in fact drop following the Rocket Watch patrols. Tan Son Nhut experienced its last rocket attack of the year on 14 June, while Bien Hoa came under fire only five more times through December.²²⁸ However, some observers at the time admitted that the sharp decrease in rocket attacks was probably not solely or even largely attributable to the Rocket Watch patrols.²²⁹ Large-scale ground sweeps of the surrounding countryside, implemented shortly after the Tet offensive, kept the remaining VC/NVA in the area off balance. Furthermore, following the February rocket barrages, the discovery and capture of large caches of rockets and mortars also degraded the enemy's ability to strike at the air bases. Finally, some officials suggested that

the enemy might have simply changed its strategy, preserving its strength for future operations.

Regardless of the perceived value of Seventh Air Force's now-defunct policy of returning fire with fire, strict ROEs were soon implemented governing all air-delivered and artillery fires in the Saigon Capital Military District (CMD). Following the COMUSMACV's intervention that led to the repeal of Seventh Air Force's relaxed ROE, the clearance authority for all air strikes, helicopter fires, and artillery in the built-up area surrounding Saigon, Bien Hoa, and Tan Son Nhut was vested in the commanding general, Capital Military Assistance Command (CMAC).²³⁰ On 11 June, with the new ROE restrictions in place, CMAC formalized the Rocket Watch program by establishing four patrol sectors around Saigon, encompassing the air bases at Tan Son Nhut and Bien Hoa.²³¹

Nightly Rocket Watch patrol duty in each sector was divided between Army helicopter gunships, O-1 and O-2 FACs, and AC-47s from the 3rd ACS (on 1 May, the 14th ACS was redesignated as the 3rd ACS).²³² Furthermore, unlike the pre-June Rocket Watch patrols, these missions were centrally controlled at CMAC. The helicopter gunship duty officer at CMAC was vested with overall responsibility for decisions affecting the Rocket Watch areas, as well as any required coordination between ground units and Rocket Watch aircraft.²³³ This program, with slight modifications, remained in effect through 1970.

PACAF Helicopter Gunship Required Operational Capability

Although the Rocket Watch patrols may have helped seal one seam in Seventh Air Force's air base defenses, a need for immediate fire support remained. Citing the critical role of the Army's LFTs during the Tet offensive, PACAF submitted a ROC to the Air Staff on 7 April 1969, claiming that the USAF needed its own helicopter gunships for base defense.²³⁴ PACAF claimed that a minimum of two helicopter gunships on 24-hour alert was required at each base in Southeast Asia. In the ROC, PACAF proposed that a helicopter gunship, similar to those used by the Army, could be used for ABD:

The helicopter can be used in direct support of air base defense forces including those actually inside the perimeter of a base, and against stand-off mortar/rocket attacks. . . . The helicopter can be used for visual reconnaissance, flare support, [and] fast ammunition and personnel transport. . . . In view of the general all-around capabilities of the helicopter relative to base defense, and the

need in SEA [Southeast Asia] to develop strong point-defense capabilities at USAF bases, Air Force owned and operated helicopter gunships are an essential ingredient for an effective air base defense system.²³⁵

When the PACAF ROC reached Tactical Air Command (TAC) for comment, concerns were immediately raised over fundamental issues regarding roles and missions for ABD. TAC's deputy chief of staff for plans stated that the issue of procuring USAF helicopter gunships hinged on "whether or not the Army intends to provide area defense for USAF installations" and that no action should be taken until that question was answered.²³⁶ In a follow-up message in December to the CSAF, PACAF stated that the requirement for helicopter gunships was "even more urgent in view of [the] withdrawal of many ground forces from SVN."²³⁷ However, citing budgetary constraints as well as the continuing Vietnamization of the war, the Air Staff responded to PACAF in June 1971 stating that no further action on the ROC would be taken.²³⁸

1969–1973: Vietnamization of the War

After the turmoil of 1968, the effectiveness of the enemy's air base attacks fell precipitously. Compared to the three-year period from 1966 to 1968, the period from 1969 to 1971 witnessed an 85 percent drop in the number of aircraft destroyed by VC/NVA ground attacks, while the number of aircraft damaged declined by nearly 80 percent.²³⁹ This was in large part due to the VC's seriously weakened condition following the Tet offensive, although the cumulative effect of Seventh Air Force's active and passive ABD measures had a significant impact as well. Indeed, one of the most effective countermeasures was the construction of covered aircraft shelters, called "wonder shelters," that were specifically designed to protect aircraft against rocket artillery and mortars.²⁴⁰

As a result of the declining effectiveness of enemy attacks, there was little impetus to modify air support operations for base defense. The Rocket Watch patrols protecting the Saigon CMD and the nightly gunship CAPs over major air bases remained largely unchanged. Where available, Army helicopter gunships were incorporated into local base defense plans. The only significant adjustments arose from Seventh Air Force's phaseout of the AC-47 in favor of the new Fairchild AC-119 gunships and Pres. Richard Nixon's Vietnamization policy,

which gradually turned over responsibility for air support for base defense to the VNAF.

Arriving in South Vietnam in December 1968, the new AC-119G Shadow gunships of the 71st Special Operations Squadron (SOS) began gradually assuming the in-country air support and base defense mission that had been performed by AC-47s since 1965.²⁴¹ Because it was manned mostly with reservists, the 71st SOS returned to the United States in June 1969 and turned over its aircraft to the newly activated 17th SOS.²⁴² A few months later, the first elements of the 18th SOS, flying the AC-119K Stinger, began arriving and started flying combat missions in November.²⁴³ Unlike the AC-119G, the AC-119K possessed a significant truck-killing capability, owing to its advanced night sensors and twin 20 mm cannons. As a result, the 18th SOS soon joined the 16th SOS and its Lockheed AC-130 Spectre gunships in interdiction missions over the Ho Chi Minh Trail in Laos and Cambodia. Consequently, the 18th SOS played almost no role in ABD.²⁴⁴

Coincident with the arrival of the new AC-119s, all Seventh Air Force AC-47s were transferred to the VNAF and the Royal Laotian Air Force. By the end of 1969, this transfer was complete, resulting in the deactivation of the 3rd and 4th SOSs.²⁴⁵ By December the VNAF was responsible for all gunship support in the IV CTZ and had flown nearly 30 percent of the total in-country gunship effort for the year. In 1970 the VNAF expanded its AC-47 operations into all four CTZs, sharing base defense duties with the 17th SOS. As Vietnamization continued apace, however, this shared responsibility soon changed; on 24 September 1971, the last of the 17th SOS's AC-119Gs were turned over to the VNAF.²⁴⁶ With this transfer, Seventh Air Force's responsibility for the ABD mission ended.

Summary

This section has traced the evolution of air support for ABD during the Vietnam War. The USAF's unyielding stance that its responsibility for air base ground defense ended at the base perimeter—combined with the ARVN's poor ability in providing effective external defense and the US Army's single-minded emphasis on offensive search-and-destroy operations—left US air bases vulnerable to VC/NVA standoff attacks throughout the war. This situation led

the USAF to rely increasingly on airpower to guard the approaches to its bases.

Various air support solutions were applied to the problem of external ABD. These measures ranged from makeshift efforts by air base commanders enlisting USAF and Army helicopter gunships for base defense to the more systematic theaterwide approach reflected in the TACC's standardized gunship alert frag. Issues regarding ROE and clearance to fire loomed large, becoming most evident in Seventh Air Force's response to the 1968 Tet offensive. According to the USAF, overly strict ROE unnecessarily delayed air support's responsiveness to standoff attacks, thus limiting its effectiveness. Ground commanders, on the other hand, naturally felt that stringent ROEs were necessary to prevent fratricide. For the USAF, the ROE issue was never wholly resolved to its satisfaction.

In the various studies and after-action reports regarding ABD that were conducted during the war, most were unanimous in citing airpower's capacity for extending the surveillance and early warning capability of air base security forces. Air support's important role in providing illumination and fire support received equal emphasis. Repeated mention was made regarding the versatility of the helicopter for ABD, with PACAF even submitting a request suggesting the USAF consider fielding its own helicopter gunship.

The next section examines the USAF's current thinking and practice for air support for expeditionary ABD to see the degree to which the experiences from Vietnam are captured in existing doctrine and operating concepts. In addition, it examines ABD in the joint arena in an attempt to ascertain service responsibilities for the external defense of air bases.

Current Thinking and Practice for Air Support for Air Base Defense

Doctrine shapes the manner in which the Air Force organizes, trains, equips, and sustains its forces. . . . If we ignore the reality that adaptive, thinking adversaries will seek asymmetric strategies, antiaccess capabilities, and favorable arenas within which to influence and engage us, we risk catastrophic surprise.

—Air Force Doctrine Document 1, *Air Force Basic Doctrine*

The USAF demonstrated great flexibility in thought and practice regarding air support for ABD. Confronted with a competent and determined adversary who readily exploited the seams that were an inherent part of Vietnam's nonlinear battlefield, the USAF amassed a wealth of experience on how best to leverage the unique capabilities of airpower to defend its air bases from standoff attacks. Much of this experience was gained through trial and error, tactical innovation, and ad hoc arrangements made by local air base commanders. Given the service's decade-long ABD experience in Vietnam, one would expect that these hard-won lessons would be incorporated in doctrine. An examination of current ABD doctrine and practice, however, indicates that there is presently little recognition or acknowledgement of the unique ABD challenges the nonlinear battlefield poses. It is, therefore, not surprising that current doctrine is likewise mostly silent in discussing the utility of air support for ABD. Indeed, it seems that, as with so many other lessons that emerged out of Vietnam, the USAF was quick to forget the ABD experience it had bought so dearly in lives and materiel as it rushed to exorcise the demons of an unhappy war.

This section briefly reviews current USAF thinking and practice regarding air support for ABD. Existing doctrinal solutions to the ABD problem are almost exclusively ground-centric, with little regard for the unique problems of ABD on a nonlinear battlefield, the role of airpower, or its integration into an overall concept for ABD to counter standoff threats. The seam in ABD is wider now than the 1985 ABD joint service agreement between the USAF and the Army has been annulled. This doctrinal gap has serious implications for ABD.

ABD at the Operational Level: A Subset of Force Protection or Security?

USAF leaders are beginning to recognize again the difficult problem of defending expeditionary air bases on the nonlinear battlefield. Yet the USAF's current efforts to cope with this problem are complicated by how the service views ABD generally. Instead of treating ABD as a distinct mission set, the USAF places ABD under the larger umbrella of force protection in its operational-level doctrine. Air Force Doctrine Document (AFDD) 3-10, *Force Protection*, defines FP as the "process of detecting threats and hazards to the Air Force and its mission, and applying measures to deter, pre-empt, negate or mit-

igate them based on an acceptable level of risk.”²⁴⁷ Under the USAF construct, ABD is a subset of FP and is placed on equal footing with such things as force health protection, disease and accident prevention, law enforcement, physical security, and disaster response. Although ABD may indeed be a component of FP from a conceptual standpoint, lumping it together with these other routine but essential activities masks the critical importance and unique challenges of this union, particularly when the difficulties of expeditionary air operations are taken into consideration.

The joint definition of FP differs significantly from and is more narrowly focused than the USAF definition. Joint doctrine defines FP as “preventive measures taken to mitigate hostile actions against Department of Defense personnel (to include family members), resources, facilities, and critical information.”²⁴⁸ Joint Publication (JP) 3-10, *Joint Security Operations in Theater*, further elaborates that force protection “does not include actions to defeat the enemy or protect against accidents, weather, or disease.”²⁴⁹ Since the joint definition of FP is expressly limited to “preventative measures” and specifically excludes “actions to defeat the enemy,” it may be argued that ABD should not be categorized as an FP function, at least from the joint perspective.

Despite the evident disparity between the USAF and the joint community on whether ABD is or is not an FP function, some clarity in fact can be found in joint doctrine. JP 3-10 categorizes ABD not as a *force protection* function but as a *security/combat* function.²⁵⁰ Joint doctrine defines *security* as “measures taken by a military unit, activity, or installation to protect itself against all acts designed to, or which may, impair its effectiveness.”²⁵¹ In fact, JP 3-10 devotes an entire chapter to security and base defense; regarding the threat of standoff attacks, JP 3-10 states,

Standoff attackers are a fleeting target. Level I [enemy agents and terrorists] and II [less than company-sized equivalent irregular forces] threats depend on blending in with the legitimate populace and only reveal themselves as combatants when they engage in a hostile act. It is not feasible to catch every terrorist or guerilla before they act, so the best practice is to shape the base security environment with robust defense operations within the base boundary.

(a) These proactive combat operations deny the enemy key terrain; disrupt enemy planning, reconnaissance, and organization; detect the enemy as they move into position; and posture forces to quickly neutralize detected forces.

(b) Robust tactical real-time ISR assets, to include HUMINT [human intelligence], within the base boundary can also act as a force multiplier to cue joint fires and forces. Some of these tactical ISR assets may also need to be located outside of the base boundary to provide early warning of threats and request area commander combat power to counter threats.²⁵²

At the beginning of a detailed four-page discussion devoted specifically to ABD, JP 3-10 further states that

base commanders of any Service, who command installations with active airfields, must identify considerations for planning and securing air operations at airfields subject to threat systems. This should include approach and departure corridors used by the aircraft. They must also determine the best tactics, techniques, and procedures to counter and/or neutralize the surface-to-air threat, and identify seams within the joint force as they relate to securing aircraft arrivals and departures against surface-to-air threats. Threats to aircraft may be launched from a considerable distance from the air base. In the ideal case the base commander has sufficient forces attached and an appropriately sized base boundary to counter these threats.²⁵³

Curiously, there is precious little discussion of ABD in AFDD 3-10. This doctrinal divide between the USAF's and the joint community's conception of ABD—for example, an FP function versus a security/combat function—is problematic because it fosters two distinct mind-sets and encourages separate responses to the threat depending on which doctrinal definition is adopted. Moreover, the dichotomy between what the USAF perceives as a strictly FP concern and what the joint community considers as belonging to the realm of security and combat operations is at the root of the USAF's failure to consider the role of airpower in ABD. In an expeditionary environment, the line between combat and security operations and ABD, as conceived under the USAF's FP rubric, may not be as distinct. Indeed, as illustrated by the previous section, effective ABD in Vietnam required the melding of traditional ground-based ABD efforts with extensive air support in order to counter VC/NVA standoff attacks.

A final complication is that in viewing ABD solely through the FP lens, USAF leaders severely marginalize the role of airpower in ABD. Dealing with the expeditionary ABD problem requires an approach that necessarily and properly begins on the ground—recall the success of the SAS/LRDG against porous German airfield defenses in North Africa. However, as the USAF's experience in Vietnam demonstrates, airpower has great utility in defending air bases against standoff attacks. Nonetheless, the USAF largely omits air support from

the current ABD discussion. For instance, AFDD 3-10 calls for a cross-functional approach to FP, including expertise from fields as diverse as logistics, explosives ordnance disposal, communications, and medicine.²⁵⁴ However, it fails to mention the need for air support expertise as part of the cross-functional process.

“Integrated” Defense: Only a Partial Solution

Nowhere is the omission of air support more apparent than in the USAF’s concept for protecting expeditionary air bases: integrated defense (ID). The USAF defines ID as “the integration of multidisciplinary active and passive, offensive and defensive capabilities, employed to mitigate potential risks and defeat adversary threats to Air Force operations.”²⁵⁵ However, one of the key base-level organizations established under the ID concept, the integrated defense working group, does not include personnel with air support expertise as part of its membership.²⁵⁶ The exclusion of air support in the ID concept (except for a single sentence that mentions unmanned aerial vehicles [UAV] as a means to cope with penetrating attacks) reveals a parochial ground-centric view of ABD.²⁵⁷ By largely neglecting the USAF’s organic airpower capabilities for functions such as reconnaissance, long-dwell surveillance, air mobility, and responsive fire support, the ID concept overlooks an essential tool for assisting ground ABD forces in securing the standoff footprint.

In failing to explicitly consider air support for base defense, the ID concept is only a partial solution to the expeditionary ABD problem. This stems from the fact that although the ID concept calls on base commanders to dominate the base security zone, which includes the area beyond the air base perimeter comprising the standoff footprint, it ignores the practical difficulties of this task:

The BSZ is the area outside the base perimeter from which the base may be vulnerable from standoff threats (e.g., mortars, rockets, man portable aerial defense systems [MANPADS]). The Installation Commander should identify the BSZ and coordinate via their operational chain of command with . . . [the] host nation or area commander (OCONUS) for the BSZ to be identified as the Base Boundary. If the Base Boundary does not include all of the terrain of the BSZ, the Installation Commander is still responsible for either mitigating (through coordination with . . . the area commander or host nation (OCO-NUS)) or accepting the risks of enemy attack from the terrain outside the Base Boundary.²⁵⁸

When one accounts for the geographic realities of the size of the BSZ, the scope of the problem becomes evident. As outlined earlier, the commander's required area of influence could be as large as 60 sq. mi., depending on the specific range of the enemy's standoff weaponry. Controlling an area of this extent is well beyond the organic capability of USAF security forces. To address this dilemma, the ID concept calls on air base commanders to coordinate with other friendly forces to assist in securing the BSZ.²⁵⁹

However, the ID concept fails to consider the distinct possibility that friendly forces may not be adjacent to the air base, as was the case so many times in Vietnam and more recently in Iraq and Afghanistan. Even if friendly combat forces are nearby, they may be unavailable for ABD due to their commitment to higher-priority decisive or shaping operations. In a replay of the same shortsightedness exhibited by the USAF during Vietnam, ID doctrine simply assumes that capable friendly forces will be nearby and available to provide for external defense. In addition, the ID concept does not take into account the manner in which friendly forces conduct their defensive operations. As mentioned earlier, installation security is considered a sustaining operation and is thus an economy-of-force measure. This implies that only the bare minimum combat power will be allocated to ABD, meaning that an Army unit tasked to defend the exterior of an air base will most likely have to rely on a highly mobile defense. This creates seams that can be exploited by small enemy units and increases the risk of attack.²⁶⁰

As evidenced in Vietnam, airpower is by no means a panacea for these shortcomings. Nor can airpower serve as a one-for-one substitute for well-trained ABD ground forces. However, considering the extensive area that must be controlled, airpower offers an effective economy-of-force measure that can greatly aid air base defenders in controlling the standoff footprint. Indeed, when used in conjunction with ground ABD forces as part of an integrated plan, airpower can be a valuable tool for detecting, preventing, and deterring standoff attacks. It is thus unfortunate that the ID concept—exhibiting an overwhelming focus on defensive activities inside the wire—concentrates almost solely on ground-based solutions to the ABD problem. With little thought devoted to the integration of the USAF's organic airpower capabilities to assist in controlling the standoff footprint, this aspect of the ID concept is troubling. Certainly, no air base com-

mander in Vietnam would have called a base defense plan “integrated” if it failed to incorporate air support.

The Practice of Air Base Defense at the Tactical Level

The USAF’s failure to fully address the difficulties of ABD on the noncontiguous battlefield and the explicit omission of airpower’s role in ABD in its operational-level doctrine are partially addressed at the tactical level in the various policies and Air Force instructions that govern ABD operations and tactics, techniques, and procedures. The USAF implements ABD in accordance with Air Force Policy Directive (AFPD) 31-1, *Integrated Defense*. Mirroring the USAF’s stance on ABD in Vietnam, AFPD 31-1 essentially limits the USAF’s responsibility for ABD to the base boundary (BB), stating that “installation commanders will . . . minimize mission degradation from threat activity within the BB and coordinate necessary support within the BSZ when the BSZ is not congruent with the BB.”²⁶¹ Air Force Tactics, Techniques, and Procedures (AFTTP) 3-10.1, *Integrated Base Defense*, further states that

commanders should strive to ensure that their area of influence coincides with the area from which an enemy can impact operations through the use of standoff weapons such as MANPADS, mortars and rockets. . . . Depending upon the theater and the prevailing circumstances, it may not be possible for a commander to physically dominate the IBD [integrated base defense] battlespace with forces directly under their command. . . . Commanders must liaise with other forces and agencies (to include host nation forces) to ensure that as much of the battlespace as possible is dominated.²⁶²

The USAF therefore places the onus for ABD beyond the base boundary on the US Army, Marine Corps, or HN forces, assuming that these forces will in fact be there, are available for tasking, and will possess the requisite capability to defend the base. Moreover, as the implementing instruction for ABD is silent regarding air support, absent is any consideration for utilizing the USAF’s organic airpower capabilities to help counter the standoff threat.²⁶³ Thus, rather than help itself, the USAF intends to rely on other friendly forces to ensure the security of its air bases beyond the base boundary.

The absence of consideration for air support is further manifested in the AFIs that govern SF training, organization, and equipment. In short, SFs have no organic capability for integrating airpower into ABD operations. To begin with, the AFI that establishes the guidelines for SF training does not devote a single hour of instruction for discussing the integration of air support for ABD.²⁶⁴ Furthermore,

the SF's only resident expertise on fire support is the fire direction center (FDC) team, a five-person deployment module that accompanies some SF deployments with the sole function of directing the fire of the SF's 81 mm mortars.²⁶⁵ In the performance of its duties, the FDC team "plots and monitors information on weather conditions, fire missions, registrations points, defensive targets, air traffic, and friendly forces."²⁶⁶ Yet it is not trained to integrate or control aircraft to support ABD ground forces. Finally, regarding equipment, the Scope Shield II radio system used by SFs to conduct base defense lacks the capability to communicate with most USAF aircraft.²⁶⁷

The USAF does reference the potential need for air support expertise in AFTTP 3-10.2, *Integrated Base Defense Command and Control*, specifically with regard to the organization and capabilities of the base defense operation center (BDOC). AFTTP 3-10.2 states that "the presence of more robust threats could require additive modules" to the BDOC "such as the capability to facilitate organic and sister Service indirect fires [and] facilitate close air support."²⁶⁸ It mentions that a fire support element (FSE) could be added to the BDOC to provide the capability to incorporate joint and coalition indirect fires and CAS in support of base defense.²⁶⁹

The only other direct mention of air support in doctrine can be found in two references in a tactical training handbook that covers ABD collective skills. The first reference is in a section that discusses other USAF assets that may be available to support ABD, while the second is in the section on fire support:

If available, AF [Air Force] AC-130A/H Spectre aircraft provide ABD forces with a wide range of capabilities, such as battlefield illumination, surveillance, reconnaissance, and close air support. AF tactical aircraft (as well as from other services and nations) may also be available for close air support. Requests for this capability should be pre-coordinated, if possible. Control of execution should be carried out only by qualified personnel.

. . . Numerous AF and non-AF assets may also be available to ABD forces. Close air support assets could include the AC-130A/H Spectre aircraft, US Army helicopter gunships, and other fixed wing assets. Control of execution should be carried out only by qualified personnel.²⁷⁰

As the USAF's only explicit treatments of air support for ABD reside in two tactical-level documents, important operational-level considerations are masked. For example, unless the BDOC is augmented with an FSE, the issue of who the "qualified personnel" are for controlling air support and where they come from is not addressed.

Given that SFs have no in-house expertise to control aircraft, it is highly likely that the integration of air support for ABD will be ad hoc. Also unanswered is the issue of precoordination, specifically the allocation and apportionment of air support for the ABD mission. This is an operational-level matter, not a tactical one. Yet it remains unaddressed in the USAF's operational-level doctrine. Finally, given the limited number of AC-130s in the USAF inventory, reliance on AC-130s for ABD can be problematic. More critical, however, is the fact that AC-130s are typically under the operational control of the joint forces special operation component commander, not the joint force air component commander or COMAFFOR and will normally be tasked to support special operations missions.

Attempt at Codifying Responsibilities for ABD: Joint Service Agreement 8

In 1985 the USAF and the Army signed Joint Service Agreement (JSA) 8, spelling out each service's responsibilities for ABD. The agreement acknowledged the "Army's fundamental role in land combat and the need to protect the USAF's ability to generate and sustain airpower for joint airland combat operations."²⁷¹ The overarching purpose of JSA 8 was to "develop combat forces for ABGD [air base ground defense] to ensure Air Force sortie generation . . . capability."²⁷²

Importantly, USAF base commanders retained overall responsibility for the internal and external ground defense of their base.²⁷³ According to the agreement, the Army's role was mainly as a force provider, having "responsibility . . . for the provision of forces for ABGD operations outside the designated Air Force base or installation boundaries."²⁷⁴ Consequently, when Army ABGD forces were assigned to a base to counter level I and level II threats, they would be under the operational control of the USAF air base commander.²⁷⁵ The agreement also stipulated that the Army would initiate requests for HN ABGD support for external defense "where feasible."²⁷⁶

The USAF was responsible for providing the necessary command, control, and communications systems to facilitate operational control of assigned ABGD forces, although both services shared responsibility for ensuring that these systems were interoperable. Finally, the agreement also allowed the USAF to conduct operations beyond the base perimeter. JSA 8 stated that depending on the "threat, environment, and availability of Army or host nation forces provided for ex-

ternal defense,” the USAF could “employ external safeguards to provide early warning and detection of, and reaction to, enemy threats” to the air base as long as such actions were coordinated with local ground force commanders.²⁷⁷

JSA 8 was significant in that it clearly and concisely laid out each service’s role in ABD. Unfortunately, JSA 8 was allowed to lapse, never being fully implemented or developed beyond the basic concept. Thus in 1995, owing more to apathy than malfeasance, the Army and the USAF abrogated JSA 8 by mutual agreement.²⁷⁸

Joint doctrine has partially filled the void created by the revocation of JSA 8 in the form of JP 3-10. This publication devotes an entire chapter to the issue of base defense, to include tactics to defend against penetrating and standoff attacks.²⁷⁹ It also includes operational-level considerations for fire support, close air support, manned and unmanned airborne ISR, air mobility of security forces, aerial resupply, and personnel evacuation.²⁸⁰ It is notable, however, that there is no corresponding discussion of air support for ABD in any operational-level USAF doctrine.

Summary

This section has documented the USAF’s and the joint community’s difficulty in comprehending the complexities of ABD on the non-contiguous battlefield and the USAF’s neglect of airpower’s role in countering the standoff threat to expeditionary air bases. Exhibiting the same dogmatic thinking of USAF leaders in Vietnam, current USAF FP doctrine unwisely assumes that capable ground forces—US or HN—will be on hand for the external defense of expeditionary air bases. Furthermore, despite undeniable historical evidence indicating that penetrating attacks and sabotage account for only one-quarter of the attacks on air bases, the USAF’s current thinking and practice for ABD primarily focus on bolstering perimeter defenses to prevent penetrating attacks and enhancing internal security to prevent acts of sabotage. For the USAF, these doctrinal and conceptual flaws have resulted in a largely two-dimensional, ground-centric approach to base defense, with almost no thought or effort devoted to air support for countering the standoff threat to air bases. Perhaps surprisingly, joint thinking regarding ABD is ahead of the USAF’s in the form of JP 3-10.

To defend its air bases, the USAF has adopted the concept of ID. As has been shown, the ID concept fails to fully consider the challenges of ABD on the noncontiguous battlefield, and it largely ignores the capabilities of airpower in the local external defense of expeditionary air bases. This, coupled with the disconnect between the USAF's view that ABD is a subset of force protection and the joint community's conception of base defense as a security and combat function, has resulted in a doctrinal divergence that may leave expeditionary air bases dangerously vulnerable on the nonlinear battlefield.

Conclusion

This work has examined the utility of airpower for ABD. However, the issue of air support and its role in ABD speaks to much more than tactical considerations of loiter time, responsiveness, or weapons accuracy. Indeed, the USAF's experiment with air support for ABD in Vietnam highlighted much deeper issues associated with airpower. The service's air support experience in that conflict brings to light several fundamental tensions that lie at the heart of airpower theory in particular but also of strategy in general.

The first tension that emerges from this study is one of risk, involving the choice commanders must make regarding investments in active versus passive defensive measures. Expeditionary air operations are inherently risky, requiring commanders to make tough choices between tying operational resources to security or freeing up these resources for combat operations against the enemy. At the early stages of an expeditionary mission, the needs of security will likely demand that a large portion of operational assets be used for active defense. As this study demonstrated, air support for base defense is a key active defense measure. As a theater matures, however, passive measures such as perimeter security and hardened aircraft shelters can partially obviate the need for active measures.

A second tension demonstrated by air support for ABD in Vietnam is the difficulty involved in determining the proper mix between the offensive and defensive use of airpower. It is widely accepted that airpower is an inherently offensive weapon, best utilized to take the fight to the enemy. However, the case of air support for ABD in Vietnam demonstrates that the defensive use of airpower—best exemplified by the nightly gunship CAP overhead the USAF's main bases and the Rocket Watch program—can be a critical enabler for offensive air op-

erations. Without a concerted air support effort to stem enemy attacks on its airfields, Seventh Air Force's offensive air operations could have been seriously jeopardized. The case of the Soviet air force in Afghanistan is instructive. In that conflict, the Soviet Union's failure to provide an adequate defense for its air bases critically hindered not only offensive air operations but also ground operations as well.

The final tension is that between centralized and decentralized control of airpower. One of the key tenets of airpower, centralized control aims at the efficient utilization of scarce airpower resources. The argument for centralized control contends that airpower, being a finite resource, requires central management to ensure that it is not squandered by piecemeal application. Seventh Air Force's centralized control of the fixed-wing gunship fleet in Vietnam is an example of this concept in practice. However, at what level should centralized control reside? For instance, once airborne, the nightly gunship CAPs were controlled not by the TACC at Tan Son Nhut but by the various DASCs located in each CTZ. Although the TACC could override the decisions of the DASCs, this seldom occurred. Senior commanders felt that this bifurcated arrangement proved to be an effective method of controlling the gunship fleet. One could therefore argue that the delegation of control down to the DASCs demonstrates that decentralized control can be advantageous when tactical considerations, such as response time, outweigh considerations of efficiency. Seventh Air Force's decision to divide the management of the gunship fleet shows that it is indeed possible to strike an appropriate balance between efficiency and effectiveness, even when control of airpower resources is partially decentralized.

There is another aspect of the tension between centralized versus decentralized control. Oftentimes, the DASC called away gunships on CAP overhead air bases for other higher-priority missions. Although this may have been a proper and efficient use of fixed-wing gunships, it created inefficiencies at echelons. The high number of instances where gunships were diverted from ABD had a trickle-down effect, as it drove the development of tactical workarounds such as ground alert helicopters.

Analysis

Units conducting operations along multiple geographic lines of operation characterize the noncontiguous battlefield. Units are distrib-

uted throughout the battlefield and maneuver without regard to securing their flanks or maintaining contact with adjacent friendly units. Consequently, seams develop—seams that are susceptible to penetration by enemy forces. This description of the noncontiguous battlefield from FM 3-0 proves to be an apt characterization of the ground war in Vietnam, particularly before the policy of Vietnamization went into effect under Gen Creighton Abrams, General Westmoreland's successor following the Tet offensive.²⁸¹

Westmoreland's large-scale search-and-destroy operations often left large areas of the countryside unsecured. Furthermore, the advent of the helicopter led to widespread use of airmobile tactics, allowing US ground forces to maneuver without regard to terrestrial lines of communication. The seams that developed due to the nonlinear maneuvers of US ground forces were constantly exploited by the VC/NVA, allowing them to infiltrate small teams and even multibattalion formations to attack US and RVN installations.

Air bases were a favorite target for the enemy for a variety of reasons. To begin with, the USAF's MOBs in South Vietnam were exceedingly soft targets. Large concentrations of aircraft packed together on overcrowded parking ramps, shortages of aircraft revetments and covered shelters until late in the war, proximity to large urban areas, and porous external ground defenses made air bases highly vulnerable to enemy attacks throughout the war. In addition, from a purely cost/benefit standpoint, ground attacks made perfect sense for the enemy, given the relative inferiority of North Vietnam's air force.

Simply put, it was much easier and less costly for the enemy to damage or destroy US and VNAF aircraft on the ground than in the air. Particularly telling in this regard is the fact that enemy ground action destroyed more US aircraft than were downed by enemy aircraft (75 versus 62).²⁸² Furthermore, attacking US aircraft on the ground proved to be an efficient means for the enemy to pressure US airpower, as the incessant attacks required the United States and the VNAF to divert significant air resources to keep air bases operating. The constant vigilance necessitated by the enemy's persistent standoff attacks was a continual drain on air assets, particularly fixed-wing gunships and FACs. Air assets devoted to ABD were unavailable for other critical missions, such as air support for allied ground offensives or the air interdiction campaign in neighboring Laos and Cambodia. Finally, the second-order strategic effects of the large-scale attacks on Tan Son Nhut AB and Bien Hoa AB during the Tet offensive,

although a failure militarily, contributed to the overall impact of Tet on American public opinion and the subsequent erosion of popular support for the war.

For the USAF, the ceaseless enemy attacks against its air bases called into question the ability and willingness of the HN RVN military forces charged with their defense. The USAF therefore sought alternative means to protect its personnel and resources. Because the USAF eschewed any responsibility for the external ground defense of its air bases, it turned increasingly to airpower, which proved to be the service's sole contribution to local external defense. Many problems ensued, however. A chronic shortage of gunships, flareships, and FACs was a perennial problem, at least until 1969 when the effectiveness of enemy air base attacks had begun to dwindle. Furthermore, a dilemma that was never resolved, at least in the eyes of the USAF, was the issue of receiving timely clearance to engage enemy rocket and mortar positions that were firing on an air base. Sensitive to the concerns of the South Vietnamese government and unwilling to accept a slight additional risk to friendly ground forces, the COMUSMACV forbade Seventh Air Force from engaging enemy units firing on its air bases without first obtaining political clearance from the province chief and military clearance through ARVN or MACV channels.

Another problem was that in the majority of cases, the integration of air support for base defense was a product of makeshift efforts taken at the local level, not as part of an overarching theaterwide concept or plan. The one exception was the centralized control of fixed-wing gunships by Seventh Air Force via the TACC at Tan Son Nhut. Otherwise, air support for ABD was largely ad hoc. This led to complications such as base security forces not having the necessary radios to communicate directly with support aircraft, air support measures not being fully incorporated into local base defense plans or deconflicted from friendly counterbattery fire, lack of standardized air support tactics and procedures across the theater, and the sometimes convoluted command arrangements that arose for requesting and controlling helicopter support for ABD from the Army.

Findings

The value of air support for ABD is directly linked to its role in controlling the standoff footprint. As was the case in Vietnam, stand-off attacks today pose the most likely threat to expeditionary air bases.

Thus, much as it was nearly 50 years ago, the major problem facing the USAF in defending its expeditionary air bases is the need to control the standoff footprint surrounding the base. Securing an area of 60 sq. mi. or greater, depending on the range of the standoff weapon, is simply not feasible by sole reliance on ground forces. Air base defenders in Vietnam were acutely aware of this dilemma and therefore made use of the unique capabilities of airpower to help thwart standoff attacks.

Unfortunately, however, assessing the effectiveness of air support for base defense in Vietnam is not an easy matter. The first complication arises from the obvious interconnectedness of air support with the ground aspect of ABD, making a stand-alone appraisal of airpower problematic. For example, a decrease in the number of enemy standoff attacks against an air base during a given period could be attributed to a host of factors, including a simple change in enemy strategy that had nothing to do with the presence or absence of air support, enemy resource constraints in personnel or weapons, increased effectiveness of passive defense, or an increase in friendly patrols surrounding the air base. Another thorny issue is the difficulty of establishing appropriate measures of merit for grading the performance of air support, which necessarily precludes any sort of meaningful quantitative analysis. In the end, no matter how biased or flawed, the qualitative assessments of those who were on the receiving end of the enemy's rockets, mortars, and recoilless rifle fire must suffice as the best guide to judging the effectiveness of airpower for base defense.

Given that the vast majority of enemy attacks occurred at night, one of the first uses of air support in Vietnam was flare illumination. By lighting up the surrounding countryside, air base security forces had a much better chance of visually detecting enemy activity near the air base. Flare illumination was also essential for night strike aircraft, and because flare drops normally signaled an impending air strike, flare illumination alone was sometimes sufficient to stop an enemy attack. For air base defenders, flare illumination thus had value as a deterrent as well as an aid for spotting enemy forces at night.

A second use of air support that was deemed vital for base defense was aerial surveillance of the area surrounding the air base. Simply put, aerial surveillance provided the only effective method of surveying the entire standoff footprint in a systematic and regular manner. Constant surveillance was necessary to detect enemy attack prepara-

tions and to provide advance warning of an impending attack. An essential aspect of aerial surveillance was the strong belief that it was most effective when the same pilots and observers conducted it, day in and day out, gaining an intimate familiarity with the terrain and patterns of the surrounding area. For example, a change in the local environment, such as the sudden cessation of civilian road traffic, could be a possible sign of enemy activity. It was felt that an aerial observer who was not attuned to the intricacies of the local area may not discern the significance of such events.

Third, air support was used extensively to provide fire support for base defense, supplied primarily by AC-47 and AC-119 gunships. To shorten response time and act as an ever-present deterrent, gunships were placed in a CAP overhead most MOBs each night. Although control and planning were centralized at TACC, daily execution authority was delegated to the DASCs in each ARVN corps. One of the most significant fire support issues that arose was the fact that the gunships were often diverted from their CAPs to support more urgent missions such as troops-in-contact, thereby leaving the base uncovered. One common workaround was the use of helicopter gunships placed on ground alert to cover gaps in AC-47/AC-119 coverage. Another major problem, mentioned above, was the delay associated with receiving clearance to fire. Depending on the base and the tactical situation, these delays were sometimes either a minor nuisance or a substantial impediment.

In addition to the three specific functions just outlined, several broader aspects of air support in Vietnam bear mentioning. The first of these is the shared belief in the inherent deterrent effect that ensued from the mere presence of an aircraft flying around the base, whether it was a gunship on CAP, an O-1 Rocket Watch patrol, or a helicopter Firefly team. Many reports from the war claimed that air support deterred many VC/NVA attacks, although this is difficult to prove conclusively. Second, it is important to note the various aircraft types that were recommended for air support in the assorted reports and studies that examined ABD. These ran the gamut from light multi-purpose utility airplanes with a STOL capability to motor gliders and remotely piloted helicopters. In all cases, the studies concluded that the optimal solution was an aircraft that was purpose-built for ABD. The study that mentioned the remotely piloted helicopter was particularly prescient, foreshadowing the widespread use of remotely piloted vehicles (RPV) today.

A third and final point of emphasis is the broad consensus that emerged early in the war regarding the versatility and effectiveness of the helicopter for base defense. Commanders at all levels claimed that the helicopter's quick reaction capability and its ability to serve in a variety of roles—such as reconnaissance, fire support, illumination, and transport for base security forces—made it an ideal aircraft for base defense and an essential element in any base security plan.

In sum, the USAF's ABD experience in Vietnam indicates that air support can indeed be an important, if not essential, ingredient in defending expeditionary air bases against standoff attacks. The capability of airpower for wide area surveillance, rapid and responsive fire support, and mobility, and the deterrent effect that arises from its mere presence over the battlefield, suggest that future ABD efforts are incomplete if they do not incorporate air support to counter the threat from standoff weapons. One note of caution, however, is that the capabilities that make air support so valuable for ABD are the very same capabilities that make it such a crucial asset for ground forces. In the battle between the competing demands for ABD and supporting troops-in-contact, difficult decisions will need to be made regarding the proper allocation of airpower.

Recommendations

Viewing contemporary expeditionary operations through the lens of Vietnam requires a degree of caution, since Vietnam may well represent a "worst-case scenario" for ABD. To begin with, the VC and NVA were very experienced fighters, with many officers and men having successfully fought against the French following World War II when that country attempted (and failed) to reclaim its possessions in Indochina. Furthermore, the political goal of the North Vietnamese government was nothing less than the overthrow of the illegitimate (in Hanoi's eyes) government in Saigon, followed by the unification of the North and South. This made the conflict against South Vietnam and the United States a total war from the enemy's point of view, resulting in a correspondingly high level of effort and sacrifice on its part that the United States was simply unwilling to match. In addition, the enemy had a significant amount of external support from the Soviet Union and China. The widespread rocket attacks that began in 1967 and proved to be so disruptive to air base operations would not have been possible without a steady supply of rockets from North Viet-

nam's communist benefactors. Added to this, the enemy had use of relatively secure sanctuaries and logistical supply lines in Laos and Cambodia, which facilitated the sustainment of the recurring attacks against air bases in South Vietnam. Finally, the landscape of South Vietnam, with its thick vegetation, mountainous regions, and numerous interior waterways, especially in the Mekong Delta, was a near-ideal environment for the small-scale hit-and-run attacks of the VC and NVA.

With these considerations in mind, the USAF's ABD experience in Vietnam has several implications for today. First, because the USAF still relies on the Army for external defense of its bases, the COMAFFOR and his or her expeditionary air base commanders must be thoroughly attuned to the Army's ground scheme of maneuver. Although the nonlinear search-and-destroy operations of General Westmoreland are not directly analogous to the Army's modern war-fighting concepts, they are similar in one important respect: mobile defensive operations in noncontiguous AOs create undefended seams on the battlefield, leaving fixed installations such as air bases susceptible to ground attack. USAF commanders must therefore be alert to this aspect of defensive operations in noncontiguous AOs and the increased risk it poses to expeditionary air bases.

A second implication is that because of the apparent utility of helicopters in support of base defense during Vietnam, the USAF may need to establish a formal support agreement with the Army along the lines of JSA 8 to provide helicopter support for expeditionary ABD. This in turn would require the development of new operating concepts and procedures, peacetime joint training programs, and a clear and unambiguous delineation of each service's authorities and responsibilities. Alternatively, although it would be a much more expensive prospect, the USAF could develop its own organic helicopter capability for base defense. A possible solution would be the conversion of a portion of the USAF's UH-1N fleet—currently used by USAF Space Command for missile site support—into base defense helicopters.²⁸³ These helicopters would need to be armed, be configured to carry various types of surveillance equipment, and be designed for rapid transportability. Reflecting on the Soviet Union's failure to mitigate the MANPADS threat to its aircraft in Afghanistan during the 1980s, one draws the conclusion that these helicopters would also need to be outfitted with a robust self-protection suite to defend against MANPADS. In garrison, this capability could be centralized

in one squadron under Air Combat Command, with elements deploying as needed when new expeditionary bases are opened. At the deployed location, these helicopters would be under the operational control of the base's defense force commander. As it is the inherent right of every service to defend its personnel and resources, the USAF's development of a base defense helicopter should not pose any issues regarding roles and missions. Rather, the largest impediment to developing a base defense helicopter is whether the USAF deems that the vulnerability of expeditionary air bases warrants the expenditure of resources to field such a capability.

Third, the USAF should continue to emphasize the use of RPVs for surveillance of the standoff footprint surrounding its expeditionary air bases. The RQ-11B Raven mini-RPV, which replaced the older, less-capable Desert Hawk RPV as part of the Force Protection Airborne Surveillance System (FPASS) program, has proved to be very versatile in monitoring the standoff footprint outside the base boundary.²⁸⁴ Future base defense RPVs should be equipped with a rapidly reconfigurable surveillance package and have even greater loiter capability and range. Consideration should also be made for future ABD RPVs to carry lethal and nonlethal weapons for fire support.

Fourth, addressing the issue of service doctrine, the USAF should make a clear doctrinal distinction between force protection and expeditionary ABD. Properly categorizing expeditionary ABD as a security and combat function, and not as a combat support function, would bring USAF doctrine in line with joint doctrine. Doing this would go a long way toward breaking down the artificial dichotomy between ABD and combat operations and is a key step for reemphasizing the expeditionary nature of today's USAF.

Fifth, consideration should be given to transferring the responsibility for ABD from the expeditionary support group to the operations group, separating ABD from other security forces functions such as law enforcement and physical security. This may warrant the establishment of a separate organization devoted solely to ABD modeled along the lines of the British Royal Air Force Regiment. Combined, these steps would reinforce the service's continuing transformation into a truly expeditionary force.

Sixth, to fix the lack of airpower expertise in security forces, the USAF should assign joint terminal air controllers (JTAC) to deploying security forces units, much like it assigns tactical air control parties to Army maneuver units on the battlefield. Attaching an FSE to

the BDOC, as mentioned in AFTTP 3-10.2, is a promising start. The incorporation of JTACs into SF ABD units would give SFs instant air support expertise and a direct tie-in to the theater air-ground system for requesting air support. An additional benefit is that the influence of JTACs should serve to pull the SF community out of its two-dimensional inside-the-wire focus. SF training should also be modified to incorporate familiarization training on air support tactics, techniques, and procedures.

Seventh, the USAF should consider establishing an ABD cell in the air operations center (AOC). Residing primarily in the combat plans division of the AOC, such a cell would take in requests for air support and plan ABD missions for inclusion in the daily air tasking order. The ABD cell would also have a presence in combat operations where it would constantly monitor the defense status of all air bases in the theater and be able to quickly reassign aircraft to support base defense.

Eighth, the issue of expeditionary ABD must be addressed in the joint and coalition arena in order to put doctrine into practice. In a case of past as prologue, current trends indicate that the US military may be setting itself up for a repeat of the costly ABD experience of Vietnam. Although joint doctrine has matured regarding service responsibilities for expeditionary ABD and has acknowledged the challenges of ABD on the noncontiguous battlefield, it is not yet clear that such thinking has been put into action on the battlefield. Witness the September 2012 Taliban attack on Camp Bastion in Afghanistan, which resulted in the destruction of six USMC AV-8B Harriers and the severe damaging of two more.²⁸⁵ Taking place at “one of the largest and best-defended posts in Afghanistan,” the nearly five-hour attack that occurred during the night of 14 September 2012 by 15 Taliban insurgents also resulted in two US Marines killed and nine coalition personnel wounded.²⁸⁶ Elements of 51 Squadron RAF Regiment responded to the attack, supported by an RAF MQ-9 Reaper and a British AH-64 Apache gunship.²⁸⁷ This successful attack represents the worst loss of US airpower in a single incident since the Vietnam War.²⁸⁸

Finally, the services’ shared assumption that HN forces will be able to provide adequate external defense is problematic. The quality of these forces can be highly variable from one country to the next, and the policies and whims of the HN government largely dictate how these forces are used or misused. Language and cultural barriers, as well as incompatible doctrines and operating concepts, compound

the difficulties in relying on HN forces to protect US personnel and resources. Together, these contemporary trends bear more than a loose similarity to the factors and issues that shaped the USAF's ABD experience in Vietnam.

Conclusion

In closing, this chapter has largely examined the questions of why and how regarding air support for ABD: Why is air support an essential part of expeditionary ABD? And how can airpower best be utilized in this role? The much larger issue regarding whether airpower should be used to support ABD is highly contextual, as attested to by the evolution of air support for ABD during the Vietnam War. The decision to allocate scarce airpower resources for ABD, or for any other mission, is fundamentally an issue of matching ends, ways, and means and lies at the heart of airpower strategy.

Notes

1. Department of Defense (DOD), *The National Defense Strategy of the United States of America* (Washington, DC: Office of the Secretary of Defense, March 2005), 2–5; and DOD, *The National Military Strategy of the United States of America* (Washington, DC: Office of the Chairman, Joint Chiefs of Staff, 2005), 4–6.

2. DOD, *National Military Strategy of the United States of America*, 15–17; and DOD, *Report of the 2006 Quadrennial Defense Review* (Washington, DC: Office of the Secretary of Defense, 6 February 2006), v–viii.

3. Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, NY: Cornell University Press, 2000), 167–70. For a detailed look at the AEF construct and an evaluation of its performance in Operations Enduring Freedom and Noble Eagle, see US Air Force, Task Force Enduring Look, “The Air and Space Expeditionary Force,” Quick Look report no. 8, September 2002.

4. Air Force Policy Directive (AFPD) 10-4, *Operations Planning: Air & Space Expeditionary Force Presence Policy (AEFPP)*, 16 June 2004, 3.

5. *Ibid.*

6. United States Air Force (USAF), “United States Air Force Security Forces Transformation Plan Mission Analysis” (Draft), 24 January 2005, 9–10.

7. See, for example, Gail E. Wojtowicz, “USAF Vulnerability to Limited Ground Attacks” (master’s thesis, School of Advanced Airpower Studies, Maxwell AFB, AL, June 1994); David A. Shlapak and Alan Vick, “*Check Six Begins on the Ground*”: Responding to the Evolving Ground Threat to US Air Force Bases, RAND Report MR-606-AF (Santa Monica, CA: RAND, 1995); Clifton L. Dickey, “Air Base Defense for the Air Expeditionary Force: More Than Defending the Redline” (master’s thesis, School of Advanced Airpower Studies, Maxwell AFB, AL, June 1998); Michael D. Bean, “United

States Air Force Security Forces in an Era of Terrorist Threats” (master’s thesis, School of Advanced Airpower Studies, Maxwell AFB, AL, June 1999); Herbert T. Brown, “Current Air Base Ground Defense Doctrine: Are We Postured to Meet the Expectations of the AEF?” (research paper, Air Command and Staff College, Maxwell AFB, AL, April 2001); David P. Briar, “Sharpening the Eagle’s Talons: Assessing Air Base Defense,” *Air and Space Power Journal* 18, no. 3 (Fall 2004): 65–74; and D. M. Watkins, “Air Base Defence: The Optimum Strategy to Counter Modern Threats to Joint Air Operations,” *Royal Air Force Air Power Review* 7, no. 3 (Autumn 2004): 77–91.

8. Alan Vick, *Snakes in the Eagle’s Nest: A History of Ground Attacks on Air Bases*, RAND Report MR 553-AF (Santa Monica, CA: RAND, 1995), 106–7, 109.

9. Briefing, HQ Air Force, Directorate of Security Forces and Force Protection, subject: Air Force Security Forces Flight Plan—Transforming USAF Security Forces: A Relevant Force (Draft), 17 February 2005, slide 5.

10. This study acknowledges the distinct possibility that the US Marine Corps, not the Army, may be the predominant land component force, particularly for smaller-scale contingencies. However, for large-scale operations, the Army typically assumes the role of the senior land component due to its much larger size and its robust logistics capability. For these reasons, this study only considers the Army’s doctrinal concepts for battlefield organization.

11. Army Field Manual (FM) 3-0, *Operations*, 27 February 2008, 5-11.

12. Ibid.

13. Ibid.

14. Ibid., 5-12.

15. Ibid., 5-13.

16. Ibid., 5-14.

17. Ibid. In the February 2008 revision of FM 3-0, *Operations*, the Army rescinded the terms *deep*, *close*, and *rear areas* as a means to describe the area of operations; see FM 3-0, D-4.

18. Huba Wass de Czege and Jacob D. Bieber, “Force Protection: From Fort to Foxhole,” *Army Magazine* 51, no. 6 (June 2001): 17.

19. Gen T. Michael Moseley, chief of staff, US Air Force, to all major commands, memorandum, 30 January 2006.

20. Rebecca Grant, “The Security Forces Rewrite,” *Air Force Magazine* 89, no.1 (January 2006): 57.

21. Ibid.

22. Shlapak and Vick, “*Check Six Begins on the Ground*,” 2.

23. Ibid., 15.

24. Christopher J. Bowie, *The Anti-Access Threat and Theater Air Bases* (Washington, DC: Center for Strategic and Budgetary Assessments, 2002), 23, 25, 48.

25. Ibid., 27; and Shlapak and Vick, “*Check Six Begins on the Ground*,” 15.

26. Shlapak and Vick, “*Check Six Begins on the Ground*,” 15.

27. HQ Pacific Air Forces (PACAF), USAF Limited War Security Study Group, *USAF Limited War Security-Defense Force*, 25 January 1966, para. 14., vol. 15, K168.2057-4, IRIS no. 1069274, in the USAF Collection, Air Force Historical Research Agency (AFHRA), <http://www.virtual.vietnam.ttu.edu/cgi-bin/starfetch.exe?evDNkQ8u6yzyYEKH8141fML3EMfWm3x3TbSywb2WviL9Lew6EPZZj3tk3z7>

Kn8ERD8punLzTA1s.5CnVnQ@GuVNLjQ29TAJYLER28kOD.5j7P092yLUvnDvCAHPmSZ@/F031100170314.pdf. Document is now declassified.

28. Shlapak and Vick, "Check Six Begins on the Ground," 14.
29. Ibid.
30. Barry D. Watts estimates that the Air Force, Navy, and Marine Corps will rely heavily on stealth for at least the next 20–30 years as the primary means to defeat enemy air defenses. See Barry D. Watts, *Long-Range Strike: Imperatives, Urgency and Options* (Washington, DC: Center for Strategic and Budgetary Assessments, 2005), 6, 57.
31. Shlapak and Vick, "Check Six Begins on the Ground," 14.
32. Bill Dane, "Fighters under Attack," *Aviation Week and Space Technology* 164, no. 3 (16 January 2006): 18.
33. Shlapak and Vick, "Check Six Begins on the Ground," 11.
34. USAF, *Integrated Base Defense (IBD) Concept of Operations (CONOPS)*, USAF White Paper (Washington, DC: Department of the Air Force, 23 December 2002), 1.
35. Shlapak and Vick, "Check Six Begins on the Ground," 13.
36. Vick, *Snakes in the Eagle's Nest*, 56–60. For an in-depth history of British special forces in North Africa, see John W. Gordon, *The Other Desert War: British Special Forces in North Africa, 1940–1943* (Westport, CT: Greenwood Press, 1987).
37. Vick, *Snakes in the Eagle's Nest*, 48, 64.
38. Ibid.
39. Bowie, *The Anti-Access Threat and Theater Air Bases*, 17.
40. William F. Engel, "Transforming Fires for the Objective Force," *Field Artillery Journal* 6, no. 6 (November–December 2001): 9–13; Tommy J. Tracy, "Field Artillery at the Crossroads of Transformation," *Military Review* 84, no. 1 (January–February 2004): 32–44; and John G. Roos, "Indirect Fires: Army Recoiling from Crusader Loss, but Has Bright Spot in 'Lowly' Mortars," *Armed Forces Journal International* 140, no. 5 (December 2002): 22–25.
41. Shlapak and Vick, "Check Six Begins on the Ground," 16–18.
42. Thomas L. Friedman, "Toll Climbs in Bombing in Lebanon," *New York Times*, 26 October 1983, A1; "Excerpts from US Aide's Statement on Reagan's View of Marine Pullout," *New York Times*, 3 February 1984, A4; Mark Bowden, *Black Hawk Down: A Story of Modern War* (New York: Atlantic Monthly Press, 1999); Paul Quinn-Judge, "US to Pull Rangers Out of Somalia," *Boston Globe*, 20 October 1993, 1; Robert S. Dudley, "The Shadow of Khobar Towers," *Air Force Magazine* 88, no. 11 (November 2005): 2; and Howard Schneider and Roberto Suro, "Death Toll Put at 17 in USS Cole Blast," *Washington Post*, 14 October 2000, A01.
43. Shlapak and Vick, "Check Six Begins on the Ground," 18–19.
44. Vick, *Snakes in the Eagle's Nest*, xiv.
45. Ibid., 56n43,60.
46. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961–1973* (Washington, DC: Government Printing Office, 1979), 204.
47. Vick, *Snakes in the Eagle's Nest*, 56.
48. Fox, *Air Base Defense in the Republic of Vietnam*, 42.
49. Ibid., 46–50.

50. Maj A. W. Thompson and C. William Thorndale, *Air Response to the Tet Offensive, 30 January–29 February 1968*, Project CHECO report (Hickam AFB, HI: Headquarters Pacific Air Force [HQ PACAF], 12 August 1968), 13, 16, M-U 38245-64, in the document collection, Muir Fairchild Library. Document is now declassified. Fox's tally of the VC/NVA forces that attacked Tan Son Nhut (one sapper and four infantry battalions) and Bien Hoa (two infantry battalions and one reinforced infantry company) differs slightly from the Project CHECO account; see Fox, *Air Base Defense in the Republic of Vietnam*, 50–51.

51. Vick, *Snakes in the Eagle's Nest*, 106.

52. *Ibid.*, 62.

53. Fox, *Air Base Defense in the Republic of Vietnam*, 206.

54. Vick, *Snakes in the Eagle's Nest*, 102.

55. *Ibid.*, 106; and Fox, *Air Base Defense in the Republic of Vietnam*, 100–104.

56. Fox, *Air Base Defense in the Republic of Vietnam*, 206.

57. Anthony H. Cordesman and Abraham R. Wagner, *The Lessons of Modern War*, vol. 3, *The Afghan and Falklands Conflicts* (Boulder, CO: Westview Press, 1990), 171–74.

58. Thomas Withington, "The Experiences of the Soviet Air Force in Afghanistan, 1979–1989," *Royal Air Force Air Power Review* 8, no. 1 (Spring 2005): 125–26.

59. Cordesman and Wagner, *Lessons of Modern War*, 67.

60. John Walcott and Tim Carrington, "Role Reversal: CIA Resisted Proposal to Give Afghan Rebels US Stinger Missiles—State Department, Congress Overcame Opposition and Forces Deployment—The Rebels' 'Silver Bullet,'" *Wall Street Journal*, 16 February 1988, 1.

61. Withington, "Experiences of the Soviet Air Force," 125.

62. Cordesman and Wagner, *Lessons of Modern War*, 197.

63. *Ibid.*, 175–77.

64. *Ibid.*

65. Withington, "Experiences of the Soviet Air Force," 126.

66. Cordesman and Wagner, *Lessons of Modern War*, 177.

67. Vick, *Snakes in the Eagle's Nest*, 9–14.

68. *Ibid.*, 110.

69. See Terry J. Gander, "Mortar Ammunition Update," *Armada International* 27, no. 2 (April–May 2003): 18–22. For Russian observations regarding the growth of precision standoff weaponry, see Yu N. Fesenko, "Future Trends in Precision Arms Development," *Military Thought* 12, no. 1 (January–February 2003): 104–12.

70. For example, the STRIX, produced by Swedish arms maker Saab Bofors Dynamics and currently in service with the Swedish and Swiss armies, is a "fire and forget" 120 mm mortar round that incorporates a passive infrared seeker coupled with a discriminating image processor and guidance computer. It can be launched from any conventional smooth-bore 120 mm mortar system and boasts a range of over 7 km. See the Saab Bofors Dynamics website at <http://www.saabgroup.com/>. The US Army is also developing a precision mortar round, the XM395 precision-guided mortar munition (PGMM). The PGMM, like the STRIX, is also a 120 mm round but is not a true "fire and forget" system since it relies on off-board laser designation for terminal guidance. See Ann Roosevelt, "ATK Receives Initial PGMM Contract," *Defense Daily*, 3 December 2004, 1; Lt Col Andre C. Kirnes, "Precision

Mortar Systems Overview” (presentation, Precision Strike Summer PEO Forum, Ft Walton Beach, FL, 27–28 July 2005), http://www.dtic.mil/ndia/2005precision_strike_peo/bischer.ppt; and Lt Col Larry Hollingsworth, “PGMM XM395: Precision Guided Mortar Munition” (presentation, 7th International Artillery and Indirect Fire Symposium and Exhibition, 19 June 2002).

71. For various accounts of the MANPADS threat over Baghdad, see Rod Nordland, “Corkscrew over Baghdad,” *Newsweek* 142, no. 17 (27 October 2003): 40; Vivienne Walt, “Missile Fear Keeps Airlines out of Baghdad,” *Boston Globe*, 10 November 2003, A1; Angela Keane, “Missiles over Baghdad,” *Traffic World*, 1 December 2003, 1; David Hughes and Michael Dornheim, “No Flight Controls,” *Aviation Week and Space Technology* 159, no. 23 (8 December 2003): 42; “A Shoulder-Fired Anti-Aircraft Missile,” *Aviation Week and Space Technology* 159, no. 24 (15 December 2003): 19; and Angela Smith, “Travis C-5 Crew Recounts Enemy Attack,” *Mobility Forum* 13, no. 3 (May–June 2004): 34–35.

72. Air Force Instruction (AFI) 31-101, *Integrated Defense*, 8 October 2009, 11.

73. AFI 31-301, *Air Base Defense*, 15 May 2002, 6.

74. AFD 31-1, *Integrated Defense*, 28 October 2011, 11–12.

75. FM 3-0, 3–8.

76. *Ibid.*, A-2.

77. *Ibid.*, 3–10.

78. *Ibid.*, 5–14.

79. USAF, *Security Forces Transformation Plan Mission*, 24 January 2005, 10.

80. The Free World Military Forces were a coalition of allied forces from Australia, New Zealand, Philippines, the Republic of China, South Korea, Spain, and Thailand that supported the US mission in South Vietnam.

81. Fox, *Air Base Defense in the Republic of Vietnam*, 23–28, 170.

82. In addition to the Air Force’s 366th Tactical Fighter Wing, Da Nang was home to the III Marine Amphibious Force, which consisted of the 1st Marine Division and the 1st Marine Air Wing. The Marines had overall responsibility for the defense of Da Nang and viewed air base defense as a key element of the counterinsurgency campaign against the VC/NVA. See C. William Thorndale, *Defense of Da Nang*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 31 August 1969), 1–2. M-U 38245-134, in the document collection, Muir Fairchild Library. Document is now declassified. See also Fox, *Air Base Defense in the Republic of Vietnam*, 116–18.

83. Fox, *Air Base Defense in the Republic of Vietnam*, 28.

84. Michael E. Haas, *Air Commando!: 1950–1975: Twenty-Five Years at the Tip of the Spear* (Hurlburt Field, FL: Air Force Special Operations Command, 1994), 43.

85. John Schlight, *The War in South Vietnam: The Years of the Offensive, 1965–1968* (Washington, DC: Government Printing Office, 1999), 7–8.

86. Fox, *Air Base Defense in the Republic of Vietnam*, 12.

87. *Ibid.*

88. Thomas C. Hone, “Strategic Bombardment Constrained: Korea and Vietnam,” in *Case Studies in Strategic Bombardment*, ed. R. Cargill Hall (Washington, DC: Government Printing Office, 1998), 495.

89. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 266.

90. Fox, *Air Base Defense in the Republic of Vietnam*, 14.

91. Ibid., 15.
92. Maj Richard R. Lee, *7AF Local Base Defense Operations, July 1965–December 1968*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 1 July 1969), 27, K717.0413-61, IRIS no. 517344, in the USAF Collection, AFHRA. Document is now declassified. See Fox, *Air Base Defense in the Republic of Vietnam*, 15.
93. Fox, *Air Base Defense in the Republic of Vietnam*, 16.
94. Lee, *7AF Local Base Defense Operations*, 27.
95. Ibid., 29–30.
96. Quoted in Fox, *Air Base Defense in the Republic of Vietnam*, 17.
97. Fox, *Air Base Defense in the Republic of Vietnam*, 17–18.
98. John Schlight, *A War Too Long: The USAF in Southeast Asia, 1961–1975* (Washington, DC: Government Printing Office, 1996), 20.
99. Schlight, *War in South Vietnam*, 16.
100. Mark Clodfelter, *The Limits of Airpower: The American Bombing of North Vietnam* (New York: The Free Press, 1989), 57–59.
101. Schlight, *War in South Vietnam*, 18.
102. Fox, *Air Base Defense in the Republic of Vietnam*, 20.
103. Quoted in Fox, *Air Base Defense in the Republic of Vietnam*, 20.
104. Quoted in Fox, *Air Base Defense in the Republic of Vietnam*, 20.
105. Quoted in Fox, *Air Base Defense in the Republic of Vietnam*, 21–22.
106. Fox, *Air Base Defense in the Republic of Vietnam*, 22.
107. Schlight, *War in South Vietnam*, 22.
108. Schlight, *War Too Long*, 21.
109. Tactical Air Command, directorate of security police, briefing, subject: Air Base Defense in Southeast Asia Activity Input to USAF Project Corona Harvest, 25 November 1969, slides 7–8, K417.03-1, IRIS no. 502838, in the USAF Collection, AFHRA. Document is now declassified.
110. Fox, *Air Base Defense in the Republic of Vietnam*, 25.
111. Col Charles C. Kenworthy, Jr., team chief, HQ PACAF, memorandum for record, n.d., 1, in HQ PACAF, USAF Limited War Security Study Group, *USAF Limited War Security-Defense Force (U)*, appendix 2, “MACV Policy for Air Base Defense” (U), 25 January 1966. Vol. 12, K168.2057-4, IRIS no. 1069271, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.
112. Quoted in Kenworthy memorandum, 2.
113. Ibid.
114. Quoted in James H. Willbanks, *The Vietnam War* (Burlington, VT: Ashgate, 2006), 179.
115. Fox, *Air Base Defense in the Republic of Vietnam*, 28.
116. Schlight, *War in South Vietnam*, A-1.
117. Ibid., 129, 139.
118. USAF, Project Corona Harvest designated study no. 7, interim report, (Maxwell AFB, AL: Air Command and Staff College, 15 December 1967), 46. Vol. 19, M-U 35582-11, 1967, in the document collection, Muir Fairchild Library. Document is now declassified.
119. USAF, Defensive Activities, Project Corona Harvest designated study no. 7, interim report (Maxwell AFB, AL: Air Command and Staff College, 15 December

1967), 16. Vol. 14, M-U 35582-11, 1967, in the document collection, Muir Fairchild Library. Document is now declassified.

120. USAF, Project Corona Harvest designated study no. 7, 47.

121. Lawrence J. Hickey, *Night Close Air Support in RVN, 1961–1966*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 15 March 1967), 5, 71. M-U 38245-30, 1961–1966, in the document collection, Muir Fairchild Library. Document is now declassified.

122. For the history of the development and initial fielding of the AC-47, see Jack S. Ballard, *Development and Employment of Fixed-Wing Gunships, 1962–1972* (Washington, DC: Government Printing Office, 1982).

123. Maj Richard F. Kott, *The Role of USAF Gunships in SEA (U)*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 30 August 1969), 59, vol. 1, K717.0414-15, IRIS no. 1147636, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

124. Kenneth Sams, *First Test and Combat Use of the AC-47*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 15 March 1967), 3–7. M-U 38245-4, no. 2, in the document collection, Muir Fairchild Library. Document is now declassified.

125. Capt James L. Cole, Jr., *Fixed Wing Gunships in SEA*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 30 November 1971), 2. M-U 38245-155a, in the document collection, Muir Fairchild Library. Document is now declassified.

126. Ballard, *Development and Employment of Fixed-Wing Gunships*, 34.

127. *Ibid.*, 35.

128. Schlight, *War in South Vietnam*, 129.

129. Ballard, *Development and Employment of Fixed-Wing Gunships*, 36.

130. Fox, *Air Base Defense in the Republic of Vietnam*, 173.

131. Lt Col Theodore M. Faurer, *The First and Last US AC-47 Squadron—A Personal Recollection*, Air War College Report 5588 (Maxwell AFB, AL: Air University, April 1975), 13–14.

132. Ballard, 42; and Fox, 173.

133. History, 14th Air Commando Wing, 1 November–31 December 1966, vol. 1, 30; K-WG-14-HI Nov–Dec 1966, IRIS no. 448281, in the USAF Collection, AFHRA. Document is now declassified.

134. USAF, *Defensive Activities*, Project Corona Harvest designated study no. 7, interim report (Maxwell AFB, AL: Air Command and Staff College, 15 December 1967), 13–14. Vol. 14, M-U 35582-11, 1967, in the document collection, Muir Fairchild Library. Document is now declassified. Fox lists 20 US aircraft damaged in this attack. See Fox, *Air Base Defense in the Republic of Vietnam*, 173.

135. History, 14th Air Commando Wing, 32; and Ballard, *Development and Employment of Fixed-Wing Gunships*, 48.

136. *Ibid.*, 15.

137. Wesley Melyan and Lee Bonetti, *The War in Vietnam, 1966*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 23 October 1967), 81, K717.0414-75, IRIS no. 1071547, in the USAF Collection, AFHRA. Document is now declassified.

138. HQ PACAF, USAF Limited War Security Study Group, *USAF Limited War Security-Defense Force*, 25 January 1966, para. 24. vol. 15, K168.2057-4, IRIS no. 1069274, in the USAF Collection, AFHRA. Document is now declassified.

139. Col R. C. Franklin, Jr., inspector general, HQ PACAF, to inspector general, HQ Air Force, memorandum, 26 February 1966, 5, in HQ PACAF, USAF Limited War Security Study Group, *USAF Limited War Security-Defense Force (U)*, 25 January 1966, vol. 12, K168.2057-4, IRIS no. 1069271, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

140. HQ PACAF, USAF Limited War Security Study Group, *USAF Limited War Security-Defense Force (U)*, appendix 7, "Air Reconnaissance/Strike Platoon" (U), 25 January 1966, vol. 12, K168.2057-4, IRIS no. 1069271, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

141. Robert Crawford and J. W. Ellis, Jr., *Air base Defense and Security with Application to Thailand* (Santa Monica, CA: RAND, 19 December 1966), 22–23, K146.003-119, IRIS no. 1008061, in the USAF Collection, AFHRA. Document is now declassified.

142. HQ Air Force, office of the inspector general, *Required Operational Capability*, AFIGO ROC 1-67, 31 January 1967, 4–5, in HQ Air Force, Directorate of Security Police, *US Air Force Combat Security Police Forces for Air Base Defense: Safe Side (U)*, Operation Safe Side final report, 1 October 1967, Attachment 2 to Annex 1, vol. 1, K132.104-8, IRIS no. 468784, in the USAF Collection, AFHRA. (Confidential) Information extracted is unclassified.

143. *Ibid.*, 2.

144. *Ibid.*, 4.

145. *Ibid.*, 2.

146. *Ibid.*, 3–5.

147. History, 14th Air Commando Wing, 1 January–31 March 1967, vol. 2, 7, K-WG-14-HI Jan–Mar 1967, IRIS no. 448284, in the USAF Collection, AFHRA. (Confidential) Information extracted is unclassified.

148. Lee, *7AF Local Base Defense Operations*, 33.

149. Brig Gen Charles M. Gettys, deputy director for operations, National Military Command Center, memorandum for record, 27 February 1967, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified. Fox lists only 13 US aircraft damaged in this attack. See Fox, *Air Base Defense in the Republic of Vietnam*, 174.

150. History, 14th Air Commando Wing, 1 January–31 March 1967, vol. 2, 4–5.

151. Lee Bonetti, *The War in Vietnam, January–June 1967*, Project CHECO semi-annual report (Hickam AFB, HI: HQ PACAF, 29 April 1968), 83, K717.0414-17, in the USAF Collection, AFHRA. Document is now declassified.

152. Lee, *7AF Local Base Defense Operations*, 33.

153. Lt Col Francis E. Wilkie, director of security police, Seventh Air Force, to director of operations, Seventh Air Force, memorandum, subject: 26 Feb 67 Attack on Da Nang Air Base, 4 March 1967, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

154. Message, 200630Z MAR 67, Seventh Air Force, to HQ PACAF, 20 March 1967, vol. 1, K168.2057-4, IRIS no. 1069260, in the USAF Collection, AFHRA. Document is now declassified.

155. Ballard, *Development and Employment of Fixed-Wing Gunships*, 54–55.

156. Bonetti, *War in Vietnam*, 79; and Ballard, *Development and Employment of Fixed-Wing Gunships*, 54.

157. Lee, *7AF Local Base Defense Operations*, 15.
158. Warren A. Trest, *Control of Air Strikes in SEA, 1961–1966*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 1 March 1967), 46–47, K717.0414-74, IRIS no. 1071545, in the USAF Collection, AFHRA. Document is now declassified.
159. HQ PACAF, *Project CHECO Southeast Asia Digest, January 1968*, Project CHECO report (Hickam AFB, HI: HQ PACAF, January 1968), 26–28, K717.0415, IRIS no. 1016817, in the USAF Collection, AFHRA. Document is now declassified.
160. 20th Helicopter Squadron Operating Instruction (OI) Number 60-14, *Base Defense Procedures*, 26 May 1967, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.
161. Maj John W. Elftmann, E flight commander, 4th ACS, background paper, subject: Background Information on Base Defense of Binh Thuy, 1, n.d., vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.
162. *Ibid.*, 2.
163. Maj Duane L. Thenhaus, chief, Installations Security Division, Directorate of Security Police, Seventh Air Force, memorandum for record, 25 May 1967, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.
164. Trest, *Control of Air Strikes in SEA*, 50; and Maj Philip D. Caine, *IV DASC Operations, 1965–1969*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 1 August 1969), 6, M-U 38245-143, in the document collection, Muir Fairchild Library. Document is now declassified. Schlight, *War in South Vietnam*, 75.
165. Thenhaus, memorandum for record.
166. Col David J. Duff, director of security police, Seventh Air Force, to director of operations, Seventh Air Force, memorandum, 27 June 1967, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.
167. USAF, *Defensive Activities*, Project Corona Harvest designated study no. 7, interim report (Maxwell AFB, AL: Air Command and Staff College, 15 December 1967), 12, vol. 14, M-U 35582-11 1967, in the document collection, Muir Fairchild Library. Document is now declassified. This is a much greater degree of damage than recorded by Fox, who lists only four US aircraft damaged. See Fox, *Air Base Defense in the Republic of Vietnam*, 174.
168. History, 14th Air Commando Wing, 1 April–30 June 1967, vol. 2, 5, K-WG-14-HI Apr–Jun 1967, IRIS no. 448286, in the USAF Collection, AFHRA. (Confidential) Information extracted is unclassified.
169. 14th Air Commando Wing, History, 1 April–30 June 1967, vol. 2, 5; and Fox, *Air Base Defense in the Republic of Vietnam*, 174.
170. US Military Assistance Command, Vietnam (USMACV), MACV Command-Wide Base Defense Seminar, 12 June 1967, 2–3, 13, K712.6621-3, IRIS no. 516499, in the USAF Collection, AFHRA. Document is now declassified.
171. *Ibid.*, 3, 24, 42.
172. *Ibid.*, 18.
173. *Ibid.*, 35.
174. Fox, *Air Base Defense in the Republic of Vietnam*, 174.

175. Thorndale, *Defense of Da Nang*, 14; and Ballard, *Development and Employment of Fixed-Wing Gunships*, 55.

176. Ballard, *Development and Employment of Fixed-Wing Gunships*, 55.

177. Although the 14th ACS was officially activated on 25 October 1967, it would not reach operational status until 15 January 1968.

178. Ballard, *Development and Employment of Fixed-Wing Gunships*, 55–56.

179. History, 14th Air Commando Wing, 1 January–31 March 1968, vol. 1, 48, K-WG-14-HI Jan–Mar 1968, IRIS no. 448291, in the USAF Collection, AFHRA. (Confidential) Information extracted is unclassified.

180. Lt Col Thomas D. Wade, *Seventh Air Force Tactical Air Control Center Operations*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 15 October 1968), 52, K717.0413-40, IRIS no. 898413, in the USAF Collection, AFHRA. Document is now declassified.

181. Capt Russell W. Mank, *TACC Fragging Procedures*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 15 August 1969), 22–23, M-U 38245-129, in the document collection, Muir Fairchild Library. Document is now declassified.

182. *Ibid.*, 22–23.

183. Melvin F. Porter, *Air Response to Immediate Air Requests in SVN*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 15 July 1969), 18, K717.0413-56, IRIS no. 898425, in the USAF Collection, AFHRA. Document is now declassified.

184. *Ibid.*, 18.

185. Mank, *TACC Fragging Procedures*, 22–23.

186. Wade, *Seventh Air Force Tactical Air Control Center Operations*, 43.

187. Kott, *Role of USAF Gunships in SEA*, 11.

188. Wade, *Seventh Air Force Tactical Air Control Center Operations*, 43.

189. Kott, *Role of USAF Gunships in SEA*, 11.

190. HQ Air Force, Directorate of Security Police, *US Air Force Combat Security Police Forces for Air Base Defense: Safe Side (U)*, Operation Safe Side final report, 1 October 1967, i, vol. 1, K132.104-8, IRIS no. 468784, in the USAF Collection, AFHRA. (Confidential) Information extracted is unclassified.

191. *Ibid.*, 36–38.

192. *Ibid.*, Attachment 1 to Annex 1.

193. *Ibid.*

194. The QH-50 DASH (Drone Antisubmarine Helicopter) was originally developed for the US Navy as a remotely piloted antisubmarine helicopter. Carried aboard most Navy destroyers during the 1960s, the QH-50 was normally armed with two Mk-44 torpedoes but could also be fitted with real-time video downlink equipment for spotting naval gunfire. See the Gyrodyne Helicopter Historical Foundation website at <http://www.gyrodynehelicopters.com>. See also HQ Air Force, Directorate of Security Police, *US Air Force Combat Security Police Forces for Air Base Defense*, Attachment 1 to Annex 1.

195. HQ Air Force, Directorate of Security Police, *US Air Force Combat Security Police Forces for Air Base Defense*, Attachment 1 to Annex 1.

196. Fox, *Air Base Defense in the Republic of Vietnam*, 175.

197. History, 14th Air Commando Wing, 1 January–31 March 1968, vol. 1, 4, 28.

198. HQ PACAF, *Project CHECO Southeast Asia Digest*, February 1968, Project CHECO report (Hickam AFB, HI: HQ PACAF, February 1968), 4, K717.0415, in the USAF Collection, AFHRA. Document is now declassified.

199. Fox, *Air Base Defense in the Republic of Vietnam*, 75.

200. HQ PACAF, *Project CHECO Southeast Asia Digest*, February 1968, 5.

201. HQ PACAF, *Project CHECO Southeast Asia Digest*, March 1968, Project CHECO report (Hickam AFB, HI: HQ PACAF, March 1968), 16–17, K717.0415, in the USAF Collection, AFHRA. Document is now declassified.

202. HQ PACAF, *Project CHECO Southeast Asia Digest*, February 1968, 7, 10.

203. *Ibid.*, 15–17.

204. History, 14th Air Commando Wing, 1 January–31 March 1968, vol. 1, 49.

205. Maj A. W. Thompson, *The Defense of Saigon*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 14 December 1968), 56, K717.0413-42, in the USAF Collection, AFHRA. Document is now declassified.

206. Caine, *IV DASC Operations, 1965–1969*, Project CHECO report, 30.

207. Thompson and Thorndale, *Air Response to the Tet Offensive*, 23.

208. HQ PACAF, Project CHECO, “Enemy Attack at Tan Son Nhut AB West Perimeter,” *Southeast Asia Digest* 1, no. 3 (March 1968): 21–25, <http://www.virtual-vietnam.ttu.edu/cgi-bin/starfetch.exe?ZZLZ4mHQiw6DwxDFkk8taOiDD2n9zwZXOe2ypedEUA0wOie@vVcXagNUYvXYQsJoOvyEnlFkQL37ABdFLDc@CZwFFD3WXpEc0kB.SVg8AzWLSyAXTgR9xALbibl18CcR/F031100162028.pdf>.

209. Thompson and Thorndale, *Air Response to the Tet Offensive*, 21.

210. HQ PACAF, *Project CHECO Southeast Asia Digest*, 16.

211. PACAF Manual 207-25, *Security Police Guidance for Guerilla/Insurgency/Limited War Environments*, 20 May 1968, 3–4, K717.6621-5, IRIS no. 898737, in the USAF Collection, AFHRA.

212. *Ibid.*, 1–4.

213. Thompson, *Defense of Saigon*, vii–viii.

214. Thompson and Thorndale, *Air Response to the Tet Offensive*, 16.

215. Seventh Air Force, to III DASC, Bien Hoa AB RVN, message, subject: Rules of Engagement for Air Attacks on Enemy Rocket Positions Firing on Friendly Troops and Installations, 24 February 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified. Direct Support Center III Corps, History, 1 January–30 June 1968, 7, K740.0731-3, IRIS no. 524244, in the USAF Collection, AFHRA. Document is now declassified.

216. *Ibid.*

217. *Ibid.*

218. Thompson, *The Defense of Saigon*, 57–58.

219. Message, Seventh Air Force, to III DASC Bien Hoa AB, II FFV Long Binh, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 TASC Bien Hoa, 26 April 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

220. Gen William C. Westmoreland, commander, US Military Assistance Command, Vietnam, to Gen William W. Momyer, commander, Seventh Air Force, memorandum, 2 May 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

221. *Ibid.*

222. Message, Seventh Air Force, to III DASC Bien Hoa, II FFV Long Binh, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 TASC Bien Hoa, 20 May 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

223. Staff Summary Sheet, Col George W. McLaughlin, director, TACC, Rules of Engagement for Air Attacks on Enemy Rocket Positions, 29 May 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

224. Message, Seventh Air Force, to III DASC Bien Hoa, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 Tac Air Spt Gp Bien Hoa, II FFV ALO Long Binh, 14 Air Commando Wg Nha Trang, 30 May 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

225. Gen William W. Momyer, commander, Seventh Air Force, to Gen William C. Westmoreland, commander, US Military Assistance Command, Vietnam, memorandum, 31 May 1968, vol. 11, K168.2057-4, IRIS no. 1069270, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

226. History, Direct Support Center III Corps, 1 January–30 June 1968, 12.

227. *Ibid.*, 13.

228. Fox, *Air Base Defense in the Republic of Vietnam*, 180–82.

229. Thompson, 52.

230. *Ibid.*, 64.

231. *Ibid.*, 47.

232. History, 14th Air Commando Wing, 1 April–30 June 1968, vol. 1, 11, K-WG-14-HI Apr–Jun 1968, IRIS no. 448293, in the USAF Collection, AFHRA. Document is now declassified.

233. Thompson, *Defense of Saigon*, 47–48.

234. HQ PACAF, *Required Operational Capability: Gunship Program for Air Base Defense*, PACAF ROC 6 69, 7 April 1969, K717.6621-6, IRIS no. 518986, in the USAF Collection, AFHRA. Document is now declassified.

235. *Ibid.*, 1–2.

236. Brig Gen A. M. Hendry, Jr., deputy chief of staff for plans, Tactical Air Command, to commander, Tactical Air Command, memorandum, 4 June 1969, K417.0732-10, IRIS no. 503096, in the USAF Collection, AFHRA. Document is now declassified.

237. Message, 081913ZDEC69, HQ PACAF to chief of staff, US Air Force, message, 8 December 1969, vol. 2, K717.0421-2, IRIS no. 517483, in the USAF Collection, AFHRA. Document is now declassified.

238. Col Eugene C. Watkins, Directorate of Operational Requirements and Development Plans, HQ Air Force, to Maj Yanuzzi, Project Corona Harvest, letter, 17 January 1972, K140.22-1, IRIS no. 909452, in the USAF Collection, AFHRA. Document is now declassified.

239. From 1966 to 1968, at the 10 MOBs in South Vietnam, 65 US and VNAF aircraft were destroyed and 766 were damaged due to VC/NVA ground attacks. From 1969 to 1971, this dropped to 10 aircraft destroyed and 175 damaged. See Fox, *Air Base Defense in the Republic of Vietnam*, 207.

240. Lee, *7AF Local Base Defense Operations*, 43–44. See also John W. Dennison and Melvin F. Porter, *Local Base Defense in RVN, Jan 69–Jun 71*, Project CHECO report (Hickam AFB, HI: HQ PACAF, 14 September 1971), 15, M-U 38245-125 Jan 69–Jun 71, in the document collection, Muir Fairchild Library. Document is now declassified. See Fox, *Air Base Defense in the Republic of Vietnam*, 70

241. Ballard, *Development and Employment of Fixed-Wing Gunships*, 193. The 71st SOS became combat ready on 11 March 1969. See History, 14th Special Operations Wing, 1 January–31 March 1969, 22, K-WG-14-HI Jan–Mar 1969, IRIS no. 448300, in the USAF Collection, AFHRA. Document is now declassified. On 1 August 1968, all air commando wings and air commando squadrons were renamed special operations wings and special operations squadrons.

242. History, 14th Special Operations Wing, 1 April–30 June 1969, 34, K-WG-14-HI Apr–Jun 1969, IRIS no. 448301, in the USAF Collection, AFHRA. Document is now declassified.

243. The 18th SOS began flying combat missions on 13 November 1969. See History, 14th Special Operations Wing, 1 October–31 December 1969, vi, 28, K-WG-14-HI Oct–Dec 1969, IRIS no. 448303, in the USAF Collection, AFHRA. Document is now declassified.

244. *Ibid.*

245. The 3rd SOS was deactivated on 1 September 1969. See History, 14th Special Operations Wing, 1 July–30 September 1969, 16, K-WG-14-HI Jul–Sep 1969, IRIS no. 448302, in the USAF Collection, AFHRA. Document is now declassified. The 4th SOS was deactivated on 15 December 1969. See History, 14th Special Operations Wing, 1 October–31 December 1969, 17.

246. Ballard, *Development and Employment of Fixed-Wing Gunships*, 252–53.

247. Air Force Doctrine Document (AFDD) 3-10, *Force Protection*, 28 July 2011, 1.

248. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010, as amended through 15 December 2012, 113.

249. JP 3-10, *Joint Security Operations in Theater*, 3 February 2010, GL-6.

250. *Ibid.*, IV-16 – IV-19.

251. *Ibid.*, GL-8.

252. *Ibid.*, IV-8.

253. *Ibid.*, IV-16.

254. AFDD 3-10, 3.

255. AFD 31-1, 13.

256. Air Force Instruction (AFI) 31-101, *Integrated Defense*, 8 October 2009, 23.

257. *Ibid.*, 26.

258. *Ibid.*, 25.

259. *Ibid.*, 10–11.

260. FM 3-0, 5–14.

261. AFD 31-1, 6.

262. Air Force Tactics, Techniques, and Procedures (AFTTP) 3-10.1, *Integrated Base Defense*, 20 August 2004, 10–11.

263. The implementing instruction for AFD 31-1, *Integrated Defense*, is AFI 31-101, *Integrated Defense*.

264. AFI 36-2646, *Security Forces Training and Standardization Evaluation Programs*, 13 April 2012.
265. AFH 31-305, *Security Forces Deployment Planning Handbook*, 26 February 2003, 52.
266. *Ibid.*
267. The Scope Shield II radio system is designed primarily for intersquad communications and operates in three frequency bands: 30–88 MHz, 138–174 MHz, and 406–470 MHz. The majority of US Air Force aircraft radios operate in the 118–137 MHz, 225–328.6 MHz, and 335.4–400 MHz bands. See AFH 31-305, *Security Forces Deployment Planning Handbook*, 62.
268. AFTTP 3-10.2, *Integrated Base Defense Command and Control*, 1 March 2008, 11.
269. *Ibid.*, 20.
270. AFH 31-109, *Integrated Defense Handbook*, 14 October 2010, 7, 41. The AC-130A is no longer in the Air Force inventory. The current Air Force gunship fleet consists of the AC-130H and the AC-130U.
271. US Army and US Air Force, *Joint Service Agreement 8, USA–USAF Agreement for the Ground Defense of Air Force Bases and Installations*, 25 April 1985, preamble.
272. *Ibid.*, article III.
273. *Ibid.*, article IV.
274. *Ibid.*, article II.
275. In the agreement, level I threats were defined as “enemy activity characterized by enemy-controlled agent activity, sabotage by enemy sympathizers, and terrorism.” Level II threats were enemy activity “characterized by diversionary and sabotage operations conducted by unconventional forces; raid, ambush, and reconnaissance operations conducted by combat units; and special mission or unconventional warfare missions.” Level III threats were characterized by “battalion size or larger” attacks against an air base. See US Army and US Air Force, *Joint Service Agreement 8*, article I.
276. *Ibid.*, article IV.
277. *Ibid.*
278. Staff Summary Sheet, Col Robert H. Holmes, director, Security Forces and Force Protection, HQ Air Force, Package (BLUE) XOS-F.041118.1 Validating the Abrogation of *Joint Service Agreement 8*, 18 November 2004.
279. JP 3-10, IV-8.
280. *Ibid.*, IV-9-IV-10.
281. Lewis Sorley, *A Better War: The Unexamined Victories and Final Tragedy of America’s Last Years in Vietnam* (San Diego, CA: Harcourt, 1999), 16–18.
282. Vick, *Snakes in the Eagle’s Nest*, 69. Note that Vick counts 99 US aircraft destroyed due to ground attack at the Air Force’s 10 MOBs during the war. This differs from Fox’s count of 75, which is used here. It is likely that Vick inadvertently included VNAF ground losses in his count. See Fox, *Air Base Defense in the Republic of Vietnam*, 204.

283. USAF, UH-1N Huey Factsheet, 19 June 2012, <http://www.af.mil/information/factsheets/factsheet.asp?id=130>.

284. Ruby Zarzyczny, "Raven B has Landed in Southwest Asia," *USAF News*, 11 October 2007, <http://www.af.mil/news/story.asp?id=123071292>.

285. Alissa J. Rubin, "Audacious Raid on NATO Base Shows Taliban's Reach," *New York Times*, 16 September 2012.

286. *Ibid.*

287. David Willets, "Battle of Bastion: RAF Heroes' Five-Hour Firefight Routs Taliban," *The Sun*, 19 September 2012; and John Gresham, "Attack on Camp Bastion: The Destruction of VMA-211," *Defense Media Network*, 20 September 2012.

288. Gresham, "Attack on Camp Bastion."

PART 2

Case Study—Balad Air Base, Iraq

Chapter 4

Defending the Joint Force

Lessons Learned from Joint Base Balad

Shannon W. Caudill
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Effective integration of joint forces exposes no weak points or seams to an adversary. They rapidly and efficiently find and exploit the adversary's critical vulnerabilities and other weak points as they contribute most to mission accomplishment.

—Joint Publication 1
Doctrine for the Armed Forces of the United States

As Air Force Doctrine Document 1, *Air Force Basic Doctrine, Organization, and Command*, makes explicit, “Aircraft are most vulnerable on the ground. Thus, force protection is an integral part of airpower employment. Fixed bases are especially vulnerable as they not only should withstand aerial, ground, and cyberspace attacks, but should also sustain concentrated and prolonged air, space, and cyberspace activities against the enemy.”¹ However, base defense—defending one’s air assets on the ground—is one of the least understood operational aspects of airpower. Today’s US Air Force (USAF) strategy for defending air bases is known as integrated defense (ID) (formerly known as air base defense or air base ground defense). ID provides the requisite secure foundation from which the USAF launches combat operations and protects its personnel and resources. Without strong ID, USAF personnel and resources, as well as those of the joint

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force, are vulnerable to attacks that would decrease their combat effectiveness.

Prior to the wars in Iraq and Afghanistan, the USAF considered threats outside the air base perimeter the responsibility of either the host nation or sister service forces.² In 1985 the USAF and Army signed Joint Service Agreement 8, which formally tasked the Army with the exterior defense of USAF bases.³ By 2005 the USAF had acknowledged that the Army would not have sufficient forces in some instances to perform exterior air base defense (ABD) missions effectively. As a result, USAF and Army leaders terminated the agreement, giving USAF commanders more latitude in defending air bases with their own assets.⁴ In 2006 Brig Gen Robert Holmes, the USAF's former director of security forces and force protection, wrote that "land-component maneuver forces will be stretched thin for the foreseeable future, so the Air Force must invest in its capabilities to securely project combat air and—now—ground power."⁵ In 2007 the USAF announced a new strategy for defending air bases, referred to as integrated base defense (IBD). This new concept called for the "application of active and passive defense measures, employed across the legally-defined ground dimension of the operational environment, to mitigate potential risks and defeat adversary threats to Air Force operations."⁶ The IBD operational approach called for new thinking that emphasizes ground intelligence-collection efforts in the operational environment and shifts security operations from a compliance-based model to a capabilities-based construct as a "fundamental battle competency for all Airmen, whether garrison or deployed."⁷ IBD encouraged a truly collaborative base defense operation with joint and combined partners as well as a systems approach to defending air bases. Within the next few years, IBD was rebranded as ID. Informed by war experiences and a half decade of application, USAF leaders removed "base" from the ABD lexicon since the ID concept was not unique to defending air bases nor was it confined to the internal perimeter of the installation perimeter.

By 2008 the USAF had accepted a new leadership role in Iraq when it became the base operating support integrator (BOS-I) for Joint Base Balad (JBB) (formerly known as Logistics Support Area Anaconda and Balad Air Base). This role gave the USAF responsibility for defending the base and its assigned joint forces, including conducting counterinsurgency (COIN) and counter-indirect fire (IDF) operations outside the base perimeter.⁸ Assigned personnel nicknamed

JBB “Mortaritaville” because it came under nearly daily attack by mortars and rockets, threatening both the combat mission and the joint force.⁹ Employing IDF, insurgents successfully interrupted and impeded operations. The base defense strategy prior to 2008 essentially chased the IDF shooters after attack or employed counterbattery fire against the incoming fire’s point of origin. Before the USAF became the BOS-I, one could describe the posture of exterior base defense as reactive: “In early 2004, Balad initiated a program to counter the insurgents [*sic*] standoff attacks. The plan entailed the extensive use of UAV’s [*sic*] [unmanned aerial vehicles], helicopters, counterbattery radar, and response forces to attack enemy forces *once they initiated standoff attacks*. Quick reaction forces were positioned on base (often helicopter transported) and off base in vehicles. The results were more than disappointing—attacks against Balad increased dramatically.”¹⁰ (emphasis added)

A shift in base operating responsibility to the USAF brought a new approach to base defense. As BOS-I, the USAF committed Airmen to an exterior base defense role in the largest combat deployment of security forces since the Vietnam War. Implementing an ID philosophy, the new approach proved successful in defending JBB for several reasons: (1) the USAF heeded lessons learned from defending air bases in Vietnam, committing intelligence analysts to ground defense intelligence; (2) Airmen took a proactive COIN approach designed to gain synergy with friendly and host-nation forces, best illustrated through the partnership with the Army ground force commander (known as the battlespace owner [BSO]), who controlled the terrain surrounding the installation; and (3) JBB organized a unique ID method that featured tactics, techniques, and procedures designed to influence and shape the battlespace as well as deter and disrupt attacks.¹¹ This success made JBB the model for implementing ID concepts in a combat environment. Reviewing the history of USAF base defense—especially the important lessons from Vietnam—illustrates how Airmen applied historical lessons to JBB’s operational environment, including innovative ways to counter IDF.

Learning from Vietnam

In both Vietnam and Iraq, IDF was the top threat to air bases because standoff weapons enable enemy forces to attack from a dis-

tance, thus giving them a better chance of survival. In Vietnam, Viet Cong and North Vietnamese forces attacked American air bases 475 times between 1964 and 1973, primarily with IDF, destroying 99 US and South Vietnamese aircraft and damaging 1,170 aircraft.¹² By contrast, insurgents fired more than 340 mortars and rockets against JBB following the USAF taking defense responsibility as BOS-I. These attacks resulted in no aircraft losses and only a few aircraft damaged; furthermore, just 50 percent of the rounds fired actually landed on the base.¹³ One key difference between Vietnam and Iraq is that in Vietnam there was a propensity to overfill runways with tightly parked aircraft due to the lack of airfields early in the war: “the interceptors contributed to the overcrowding at South Vietnamese airfields, and it was not long before such lucrative targets became irresistible to the Viet Cong.”¹⁴ The adversary’s IDF effectiveness against JBB, as measured by the latter criterion, was the lowest among the four most commonly attacked bases in Iraq. This fact indicates, among other things, that insurgents hurried their attacks, lacked the tactical loiter time needed for massing their fires, and feared the prospect of being either targeted by a ground patrol or videotaped by an air platform.¹⁵

Since US operations began at JBB, the base not only suffered more attacks than any other installation in Iraq but also came under IDF attack more frequently than all US air bases combined in Southeast Asia during a comparative range of years during the Vietnam War (fig. 4.1).¹⁶ As in Vietnam, JBB’s IDF attacks profited from the terrain, which featured lush farmland, trees, vineyards, and the most complex ground in all of Iraq due to the concentration of irrigation systems and drainage canals that support the country’s agricultural breadbasket. One hears echoes of Vietnam in the base defense challenges found in countering IDF in the terrain surrounding JBB. As a RAND report of 1995 observes, “The standoff threat, particularly from rockets, proved troublesome through the end of the [Vietnam] war. Given the nature of the conflict and the terrain, there was no foolproof countermeasure to this threat.”¹⁷

In Iraq the security at JBB’s entry control points and perimeter drove the enemy to IDF attacks as the course of least resistance, giving him the best chance for disrupting US operations. Each attack required personnel at the installation to take cover and clear the terrain of unexploded ordnance prior to returning to normal operations. The patterns of attack in Iraq have shown a lack of specificity in

targeting, but their basic objectives sought to disrupt coalition military operations and inflict casualties in order to undercut the resolve of the American public. Iraqi insurgent forces ranged from well-trained former Ba'athists to disenfranchised tribes with militia-like capabilities and unskilled attackers motivated solely by monetary reward earned from performing IDF attacks against JBB. Consequently, novices who undertook subcontract work for insurgent groups perpetrated many IDF attacks. JBB's counter-IDF strategy focused on deterring and disrupting attacks to prevent the enemy from massing fires for maximum effect. As a result, enemy IDF attacks were typically short in duration and performed hurriedly from unprepared firing positions.

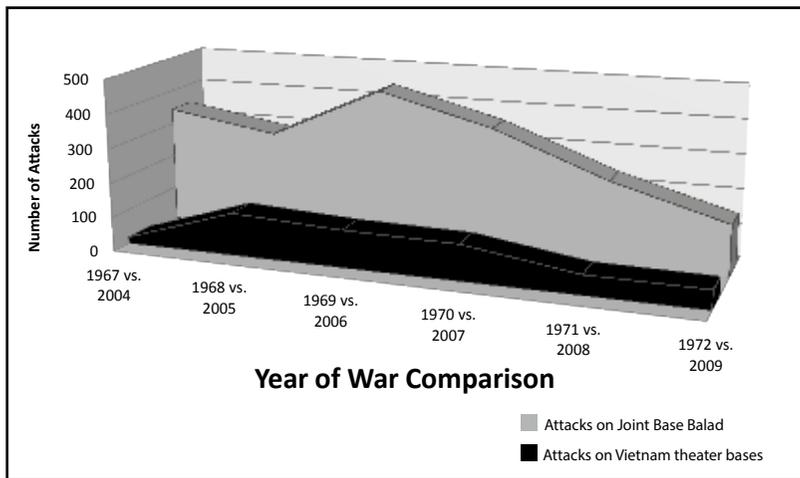


Figure 4.1. Comparison of attacks on Joint Base Balad to those on all US air bases in the Vietnam theater. (Reprinted from Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* [Santa Monica, CA: RAND, 1995], 69, http://www.rand.org/content/dam/rand/pubs/monograph_reports/2006/MR553.pdf. JBB data derived from Col Anthony Packard, 332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 1 March 2010.)

Vietnam-era base defense and that at JBB also differed significantly in terms of the complexity of attacks. Those in Vietnam proved more effective because enemy forces had more freedom of move-

ment, enabling them to mass fires and ground attacks due to the inability of air base defenders to effectively patrol the IDF threat ring around their installations. Vietnam theater air bases endured not only IDF attacks but also 29 sapper attacks, during which forces attempted to penetrate bases to destroy aircraft and key defenses.¹⁸ Eight of those attacks utilized IDF as a diversion for base defense forces, thereby screening attackers during ground assaults.¹⁹ Unlike Vietnam, sapper attacks did not materialize in Iraq because they are highly complex, synchronized operations requiring a disciplined, trained military force, characteristics generally lacking in the Iraqi insurgency.

Moreover, unlike Vietnam, the 2008 US-Iraq security agreement substantially altered the rules of engagement by making the war a “law enforcement fight” that obligated US forces to build criminal cases with supporting evidence against their attackers.²⁰ The agreement presented multiple limiting factors for defending the air base; nevertheless, it bolstered the larger strategic effort to support Iraqi rule-of-law programs and had the added benefit of making Iraqi police and courts the centerpiece of long-term Iraqi success. Furthermore, by requiring that the Iraqi police handle all cases against alleged insurgents and process them through the court system, the new policy promoted a more favorable image of US Airmen, casting them as partners in upholding the Iraqi rule of law rather than as an occupying force disrespectful of local authority. As such, Soldiers, USAF security forces, Airmen with the USAF Office of Special Investigations, and pilots from both services testified in Iraqi courts, resulting in successful criminal prosecutions under Iraqi law.²¹

Commenting on the US-Iraq security agreement of 2008, Maj Gen Mike Milano, USA, pointed out that “what we and the Iraqis are striving for is a condition known as police primacy. . . . Under police primacy, the Iraqi police forces have primary responsibility for internal security, under civilian control, in accordance with the Iraqi constitution and consistent with the rule of law.”²² JBB, therefore, initiated further partnering with the Iraqi police and built a local police substation to provide a law enforcement partnership for the base. US Soldiers and Airmen worked alongside Iraqi police, often conducting joint and combined patrols and operations. Thus, IDF was no longer just a US forces problem; it became a shared concern with Iraqi security forces that contributed to overall effectiveness of the counter-IDF campaign.

Knowledge of the Enemy: Committing Air Force Intelligence Analysts to Base Defense

In contrast to bases in Vietnam, JBB enjoyed a true commitment of intelligence assets for base defense. In Vietnam, USAF intelligence assets emphasized air operations to the detriment of intelligence about ground base defense threats—a situation that proved highly problematic. As the Office of Air Force History notes, “Hobbling external security [in Vietnam] was the lack of reliable intelligence on enemy activities within striking distance of bases. This rose chiefly from the Air Force’s failure to generate tactical ground intelligence.”²³

To remedy this historical shortfall, the wing at JBB, as part of its BOS-I ABD responsibilities, stood up a dedicated, ground-focused force-protection intelligence organization in November 2008. USAF intelligence, surveillance, and reconnaissance (ISR) professionals led and manned this joint intelligence support element (JISE), receiving assistance from contracted intelligence analysts. Robust ground intelligence operations fully enabled Army and USAF ground forces to defend JBB through proactive deterrent patrols in areas where IDF tended to originate.

The BSO fully leveraged USAF intelligence analysis and capacity to create a synergy with his own intelligence staff, thereby optimizing the JISE’s capabilities. This completely synchronized effort supported intelligence fusion designed to drive defense operations in the base security zone. The JISE’s goal of attaining predictive battlespace awareness called for foreknowledge and the ability to shape operations based not only on reviewing the enemy’s past actions but also on predicting actions the enemy would likely take in the future. Classic approaches to intelligence based on analyses of historical trends tend to drive a defense posture that responds after attacks occur. In those paradigms, ground forces are no more than “shot responders” in a counter-IDF fight, essentially sweeping for the enemy in the location from which the IDF round came, as indicated by radar and spotter reports. This reactive approach becomes a frustrating exercise comparable to a game of “whack-a-mole,” chasing the enemy around the battlespace without generating any lasting effects. Though only temporary, these results nevertheless require a tremendous expenditure of energy and resources.

The JISE's analysis led to an intelligence-driven targeting process that enabled USAF security forces to move from a mostly reactive defensive posture to a proactive scheme of maneuver. Lasting effects of this strategy require dominance of the human terrain within and outside an installation as well as understanding the relationships among key groups, tribes, and individuals. This reality drove Airmen to study and gain insights into the violent extremist networks operating in the area and to participate actively in mapping and pressuring these networks through a constant presence. Airmen fed the intelligence cycle, gathering information from relationships they had established in the battlespace and thereby closing the intelligence gap between themselves and the enemy network. A second-order effect of the collections plan was to drive Airmen toward increased dialogue with the local population. Collection needs drove a requirement for nonkinetic engagement that resulted in relationship building with tribal leaders. Our Airmen were no longer a faceless target to insurgents, which served to make the Airmen safer. David Kilcullen's seminal paper, "Twenty-Eight Articles of Counterinsurgency," supports this approach because US forces must "establish links with the locals, who see you as real people they can trust and do business with, not as aliens who descend from an armored box. Driving around in an armored convoy, day-tripping like a tourist in hell, degrades situational awareness, makes you a target, and is ultimately more dangerous."²⁴

Joint IBD operations adopted an intelligence-driven model that followed the four lines of operation based on JISE analysis: (1) deny the enemy unobserved freedom of movement, particularly in traditional attack locations; (2) map out insurgent networks and identify key leaders, weapons facilitators, and support nodes; (3) establish patterns of life (e.g., determine who met with whom, when and where they met, and how they moved, shot, and communicated); and (4) map out the human terrain to discover fault lines among locals who hate the coalition, those who grudgingly tolerate but do little to help coalition forces, and the ones whom those forces might convince to support efforts to secure the installation and the area surrounding it.

This effort prompted the development of an intelligence-collection plan and operational framework that cycled over a two- to three-week period, maximizing the existing ground combat power. For example, denying unobserved freedom of movement everywhere at all

times proved impossible with the resources at hand. However, intelligence analysis of historical data produced a strategy that denied the enemy access to his favored locations for launching attacks during the most likely times for hostile activities. Each intelligence objective had a list of subobjectives for signals intelligence resources, a similar list for airborne ISR resources, and so forth, including one for security forces Airmen during their combat patrols.

Leveraging air assets directly enabled base defense. JISE strategy fostered a collaborative atmosphere among many joint players. Through the standard air tasking order and collection-management processes, the JISE obtained regular Global Hawk and Joint Surveillance Target Attack Radar System geospatial products as well as nationally derived intelligence products delivered through the combined air operations center's forward-deployed Air Force National Tactical Integration Cell. (It is more accurate to say "nationally derived intelligence products" since they were often of a multi-intelligence nature.) Despite the usefulness of these planned ISR assets, they were dwarfed by contributions of the expeditionary operations group and Army aviation units, both fixed and rotary wing, which delivered countless hours of "residual" ISR. To realize the most value from planned and residual airborne assets, the JISE had to produce, execute, and assess a comprehensive collection plan.

The JISE was effective at pulling together disparate units to reach a commonly desired end state: protecting its own people from IDF attacks. Because of the absence of an insurgent air threat and a paucity of opportunities to strike targets kinetically, pilots and air planners welcomed the opportunity to fly residual ISR to protect the base, utilizing their remaining fuel and loiter time after completing their primary mission. Members of the operations group collected intelligence, logging hundreds of hours as they followed insurgent leaders to meetings at all times of the day and night, and Army aviation units loitered at a distance, capturing imagery of insurgents' patterns of life. The JISE orchestrated a collection plan adaptable to residual flight schedules to piece together persistent ISR 15 to 60 minutes at a time—the length of time that a residual asset would make itself available for the local ISR effort. The JISE collection coordinator produced a daily collection plan known as the "residual deck." For each collection target, the plan included specific elements of information meant to enable JISE analysts to fill gaps in their knowledge of the targets, their activities, and insurgent networks associated with them. JISE partner

analysts supplied crucial information about the activity patterns of each target by maintaining this information on a simple spreadsheet compiled each week. Given the nature of the Iraqi insurgency, successful ISR operations had to include ground-based collection by patrols in close contact with high-value individuals and the populace surrounding them.

Like the airborne collection plan, the ground-based plan began by examining the overall ISR strategy to determine tasks suited to the patrols. Security forces Airmen proved critical to successful implementation of the JISE's intelligence-collection strategy. Each day, patrols operated in the battlespace, conducting terrain-denial operations and interacting regularly with some portion of the roughly 120,000 Iraqi citizens who lived within 10 km of the base perimeter. These patrols presented an enormous intelligence opportunity, especially in mapping the human terrain and relationships among key individuals and groups in the battlespace. According to Gen David H. Petraeus, "The human terrain is the decisive terrain."²⁵ This statement translates to battling insurgents for influence and support from the contested population, whose cooperation, trust, and support we must obtain in order for security and stability to take root.

The BSO's campaign plan and JBB's IBD operations emphasized attempts to influence the human terrain. In each neighborhood, Army and USAF patrols struck up conversations with locals to determine the identities of individuals with whom they were speaking, their occupations, and how they felt about topics such as their security situation, government services, and so forth. By identifying occupants of the various houses and obtaining grid coordinates for each dwelling, referred to as "black book operations," the patrols literally mapped the human terrain surrounding JBB. JISE analysts dutifully recorded each individual, using the data to build a complete picture of the human terrain. While traditional intelligence sources enabled security forces to narrow down the location of a high-value individual within a block of five to 10 houses, Airmen on the ground easily pinpointed the exact residence and its occupants simply by asking locals to provide information about the individual of interest. This practice proved so effective that it sometimes startled the individual when he or she answered a knock on the door to find a squad of Airmen in the front yard.

Counterinsurgency Synchronization: Developing Joint and Combined Partnerships

At JBB Airmen learned to leverage nonkinetic assets and operations to achieve lasting effects in support of the BSO's COIN and stability campaign plans. The wing hosted biweekly COIN and civil-engagement synchronization meetings to ensure full support to the BSO from the Army, USAF, and Department of State partners at JBB. Conversely, the BSO embraced USAF and other partner units as a means of realizing his overall campaign objectives along three decisive lines of operations: security, economic development, and governance. No fewer than five times per week, wing representatives and JISE analysts met with the BSO and partner units to improve coordination and information sharing. Those meetings included reviewing intelligence operations, operations synchronization, targeting, the BSO's weekly effects summary, and numerous synchronization meetings at the field-grade- and company-grade-officer levels. For operators this meant providing support such as ISR data on the locations of high-value individuals, conducting sweeps over IDF hot spots, carrying out aerial monitoring of security for Iraqi election polls, and conducting aerial shows of force with F-16s over terrain from which IDF attacks frequently originated.

The BSO was responsible for synchronizing all friendly forces in his area of operations, which included conducting kinetic and nonkinetic actions, maintaining situational awareness of all forces, and controlling fire-support coordination measures. The BSO leveraged the capabilities of all coalition, host-nation, and other partner units, including nonmilitary entities such as the Department of State's provincial reconstruction teams and nongovernmental organizations. Their accomplishments proved that, if properly synchronized, such mutually supporting operations create a symbiotic relationship and unity of effort, ultimately yielding a more efficient use of resources. US Joint Forces Command noted that the BSOs were learning to take advantage of all available operational enablers: "Many joint players . . . operate in the battlespace owners' areas of operation. . . . Battlespace owners are becoming increasingly more comfortable with these 'non-assigned' players in their battlespace."²⁶

It is important to recognize that all operating bases in the BSO's area of operations can have profound positive or negative second- and

third-order effects across the operational environment. These include decisions that may appear confined to the base itself, whether they are providing air provost services (law and order operations), contracting, building, or something as simple as hosting a local children's event. If such operations and activities are poorly coordinated and if local national ties are not clearly understood, they can undermine the BSO's relationship with key local national officials and adversely affect efforts along multiple lines of operation. JBB operated with diverse host-nation forces, including local and federal Iraqi police, paramilitary groups like the Sons of Iraq, locally contracted Iraqi entry-control screeners, and Iraqi army and air force elements. USAF security forces conducted combined patrols with Iraqi army units to build this relationship, which, paired with many US Army and USAF key-leader engagements with the Iraqi army, ultimately led to the Iraqi army's moving forces onto JBB in August 2010.²⁷ In doing so, the USAF's IDF problem became a shared security concern with our ISF counterparts.

Combat operations, both kinetic and nonkinetic, demand coordination across the spectrum of COIN operations. The BSO's campaign plan required Airmen to understand operational COIN doctrine and philosophy as well as how their daily operations and public interactions affected the battlespace. Importantly, leaders of the 332nd Air Expeditionary Wing saw partnering with the BSO as an operational imperative, tasking one staff officer to focus exclusively on synchronizing wing operations and host-nation outreach with the BSO. This effort reduced friction, eliminated seams between policies, and fully synchronized JBB with the BSO's information operations and public relations messaging. Some examples of nonkinetic COIN efforts at JBB included special events for local children and businessmen, Airmen on combat patrol conducting key-leader engagements with Iraqi forces or local tribal leaders, USAF firemen training local volunteer fire departments in American fire department techniques, and security forces and medical personnel providing preventative and emergency treatment at base-entry control points. They also included complying with local or host-nation statutes such as water rights and employment opportunities used to reward tribes for cooperating with the coalition, conducting frequent walking patrols to build relationships with local tribes and farmers, rendering emergency medical aid in local villages, delivering school and medical supplies, providing wheelchairs for the disabled, and conducting a multitude of

small but important community-outreach activities to emphasize JBB's "good neighbor" philosophy.

To counter the disadvantages that combat forces faced in terms of limited coverage and loiter time, JBB realized that a comprehensive and continuous synchronization process was essential. This effort produced the air portion of the task force's combined patrol and the ISR synchronization matrix—a snapshot of ground patrols and projected air coverage for every 24-hour period during the weekly BSO effects cycle. The synchronization matrix specifically addressed JBB's IDF threat rings and supplied visibility on both BSO and USAF ground and air assets. This synchronized effort ensured that ground and air patrols covered the predicted IDF threat windows generated by the JISE and spatially optimized available assets to support responses outside the wire.

Organizing for an Integrated Defense

To achieve the desired ID effects, the 332nd Air Expeditionary Wing organized its base defense assets under the JBB defense force commander, a USAF security forces colonel responsible for ensuring IBD of the base by executing force protection and defensive operations.²⁸ This individual leveraged the joint assets operating in the vicinity of JBB to guarantee a collaborative approach with partner joint units and host-nation forces that would produce operational gains and "mitigate potential risks and defeat adversary threats to Air Force operations."²⁹ Furthermore, the defense force commander synchronized his IBD operations through the joint defense operations center, collocated with a BSO tactical operations center. The joint defense operations center directed and integrated all subordinate security system and communications elements, serving as a tactical integrator of both intelligence and guidance for BSO effects that drive the base defense effort.

A truly joint team, JBB's joint defense structure included tactical control of the counter-rocket artillery mortar (CRAM) joint intercept battery. CRAM Soldiers and Sailors were responsible for employing the system's intercept, sense, respond, and warn capabilities, together with combat power, as a unique defense against enemy IDF attacks and as a localized warning to populated areas of the base. Placing CRAM under tactical command of the USAF defense force com-

mander ensured the best possible integration of CRAM capabilities into the overall physical security and force-protection architecture of JBB and the counter-IDF plan.

To produce effects in the battlespace, the defense force commander and his Airmen partnered with a ground BSO who had operational responsibility for the terrain surrounding JBB and responsibility for developing and executing a campaign plan supporting national objectives within a specific geographic area. As part of the BSO construct, all personnel transiting or operating in the BSO's domain were required to comply with commander's intent for the battlespace, Army tactical command and control protocols, mission-planning requirements, and the scheme of maneuver supporting the BSO's campaign plan. This approach demanded a fully synchronized and coordinated effort between the USAF and Army ground forces that defended the air base. Almost every day, Soldiers and Airmen at all levels were coordinating joint and combined operations for the next effects cycle, while simultaneously executing the current one.

Significantly, the BSO viewed JBB's base defense as a subset of an extensive list of operational mission tasks within the operational environment. To put the BSO's operational challenges in perspective, he had responsibility for a large geographic area far beyond the IDF threat ring affecting the air base—specifically, over 3,000 sq km rather than only the 243 sq km encompassing the JBB standoff-attack threat area. Analysis of the JBB operational environment easily indicates how a BSO can be stretched beyond capacity and how external force protection of an air base could be relegated to a low priority.

Conclusion

The USAF's official history of ABD in Vietnam illustrates how the competing priorities of ground commanders made the commitment of USAF ground combat power to protecting air bases an operational imperative: "Reliance on other services for the defense of air bases was a problem for the [Royal Air Force] on Crete, the *Luftwaffe* in North Africa, and the [USAF] in Vietnam. In each case, air base defense had to compete with other missions on which ground commanders placed higher priority."³⁰

To remedy these historic shortfalls, the joint partners at JBB fully integrated their limited base defense assets to present a unified front

to the adversary and limit defensive seams that he might exploit. They did so through multiple levels of information sharing that gave base defenders a common operating picture through shared intelligence. Integrated ground and air operations forces interdicted and captured 22 IDF shooters and triggermen for improvised explosive devices over a five-month period, validating the joint approach to base defense. These operations eliminated more than half of the enemy's upper-tier high-value individuals and more than a dozen of the JBB security belt's "most wanted" enemy personnel. As further evidence, JBB experienced the longest lull in IDF ever recorded under the US presence there during the tenuous period associated with the 2010 Iraqi national elections.

USAF leaders should learn many important lessons from the JBB defense model, since asymmetric threats to air operations likely will increase in the future. As predicted by a RAND study on ABD, "We expect that [air base] opponents might pursue three different objectives with these [future] attacks: (1) destroy high-value assets critical to USAF operations, (2) temporarily suppress sortie generation at a critical moment in a crisis or conflict, or (3) create a 'strategic event'—an incident as decisive politically as loss of a major battle is militarily or operationally—that could reduce U.S. public and/or leadership support for the ongoing military operation."³¹ Additionally, air bases, with their large populations and resource concentrations, will always represent a high-value target for our enemies' strategic information operations.

The lessons learned in defending JBB have highlighted capabilities and ID strengths that the USAF can contribute to the joint fight to defend against asymmetric threats. The USAF must continue to refine its ID approach, train leaders who understand and embrace the ground BSO concept, and develop leaders who can readily plug into joint operations in COIN and stability-operation environments. For example, as recent as 2010, the Integrated Defense Command Course, the USAF's premier base defense leadership course, still does not require coordination with a ground BSO or host-nation partner for its exercise scenarios and remains devoid of any of the technology and synchronization methodologies so essential to the synergy of joint base defense. The USAF has begun to make adjustments to its deployment training, but more must be done to codify the operational lessons of JBB's base defense into organizational and operational constructs that it can apply to current and future base defense operations.

The JBB defense model has proven that Airmen can ensure their place on the battlefield as true joint and combined partners by defending not only their own air assets and war fighters but also those of the joint team. The commitment of Airmen to the joint force protection of JBB proved critical to keeping IDF at a manageable level and diminishing its effects on air operations. The results were impressive: between November 2008 and March 2010, IDF attacks decreased by 52 percent, and surface-to-air fire decreased by 40 percent.³² This success allowed the BSO to concentrate limited combat assets on core tasks that supported activities such as key leader engagements, increases in the capacity of Iraqi security forces, economic development, and construction projects. At JBB the BSO stated that USAF security forces provided the equivalent of more than one infantry company's worth of combat power that he could use to attain specific desired effects outside the wire.³³ By sending Airmen out to meet the enemy on the ground and in the air, the USAF has enjoyed greater security and freedom of movement to support its own air operations and BOS-I base defense responsibilities.

True joint warfare involves caring less about getting credit and more about producing effects. At JBB, USAF leaders at all levels embraced the ID concept and searched for ways to support the BSO's COIN campaign plan because it paid dividends to the installation's defense, ensuring the conduct of air operations in a securer, stabler battlespace. As the BSO noted, "Dealing with challenges presented by this complex environment required multiple agile thinkers and holistic problem solvers capable of identifying and implementing operational-environment-specific full-spectrum- or stability-operations-based effects."³⁴ These battlefield effects speak volumes about what Airmen can achieve with their collective ID capabilities to bear in support of the joint fight. Base defense experiences in Iraq demand a fresh look at the role the USAF plays in defending its own assets and those of the joint force.

Notes

1. Air Force Doctrine Document 1, *Air Force Basic Doctrine, Organization, and Command*, 14 October 2011, 34.
2. David P. Briar, "Sharpening the Eagle's Talons: Assessing Air Base Defense," *Air and Space Power Journal* 18, no. 3 (Fall 2004): 65-74, <http://www.airpower.au.af.mil/airchronicles/apj/apj04/fal04/Fal04.pdf>.
3. Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, DC: Office of Air Force History, 1987), 125.

4. "Validating the Abrogation of Joint Service Agreement 8," AF/XOS-F, staff package, 18 November 2004.

5. Robert H. "Bob" Holmes et al., "The Air Force's New Ground War: Ensuring Projection of Air and Space Power through Expeditionary Security Operations," *Air and Space Power Journal* 20, no. 3 (Fall 2006): 51, <http://www.airpower.au.af.mil/airchronicles/apj/apj06/fal06/Fal06.pdf>.

6. Air Force Policy Directive (AFPD) 31-1, *Integrated Defense*, 7 July 2007 (incorporating change 1, 22 April 2009), 2, <http://www.af.mil/shared/media/epubs/AFPD31-1.pdf>.

7. Ibid.

8. SSgt Don Branum, 332nd Air Expeditionary Wing Public Affairs, "Balad Airmen Look Back: 2008 in Review," 1 January 2009, Joint Base Balad, Iraq, <http://web.archive.org/web/20090103142931/http://www.balad.afcent.af.mil/news/story.asp?id=123129950>.

9. National Public Radio, "Warrant Officer: 'It's Just a No-Win Situation,'" 13 July 2007, <http://www.npr.org/templates/story/story.php?storyId=11952622>.

10. David T. Young, "Applying Counterinsurgency Theory to Air Base Defense: A New Doctrinal Framework" (thesis, Naval Postgraduate School, September 2005), 29, <http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA439510>.

11. *Battlespace owner* is not an approved joint or service term, but JBB's joint forces and ground force commander uses it to describe his authority over the geographic area surrounding the base. The term is used by the Joint Warfighting Center, United States Joint Forces Command, and has been utilized in numerous publications, including the following: Gen Gary Luck, Col Mike Findlay, and the Joint Warfighting Center Joint Training Group, *Insights and Best Practices: JTF Level Command Relationships and Joint Force Organization*, Focus Paper no. 4 (Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, November 2007), 5, https://intelshare.intelink.gov/sites/jko/starfish/education/Shared%20Documents/Insights%20and%20Best%20Practices,%20Joint%20Warfighting%20Center/Insights_and_Best_Practices_-_JTF_Level_Command_Relationships_and_Joint_Force_Organization.pdf; and Gen Gary Luck, Col Mike Findlay, and the Joint Warfighting Center Joint Training Division, *Joint Operations Insights and Best Practices*, 2nd ed. (Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, July 2008), <http://www.ndu.edu/pinnacle/docUploaded/Insights%20on%20Joint%20Operations.pdf>. See also AFPD 31-1, *Integrated Defense*.

12. Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND, 1995), 68, http://www.rand.org/content/dam/rand/pubs/monograph_reports/2006/MR553.pdf.

13. Col Anthony Packard, 332nd Expeditionary Security Forces Group, Joint Intelligence Support Element (JISE-B), 1 March 2010. The JISE-B was the central repository for collecting, tracking, and analyzing IDF trend data, and military scholars recognize the JISE-B as the authoritative source for this type of information.

14. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 265. It is important to note that video recordings often serve as evidence in Iraqi courts.

15. Ibid.

16. Data derived from Vick, *Snakes in the Eagle's Nest*, 69; and Col Anthony Packard, JISE-B.
17. Vick, *Snakes in the Eagle's Nest*, 102.
18. *Ibid.*, 90.
19. *Ibid.*
20. "Agreement between the United States of America and the Republic of Iraq on the Withdrawal of United States Forces from Iraq and the Organization of Their Activities during Their Temporary Presence in Iraq," 17 November 2008 (made official on 14 December 2008), http://graphics8.nytimes.com/packages/pdf/world/20081119_SOFA_FINAL_AGREED_TEXT.pdf.
21. Armand Cucciniello, "Iraq Proves Fertile Ground for Rule of Law Programs," Embassy of the United States, Baghdad, Iraq, 18 March 2008, http://web.archive.org/web/20100527144222/http://iraq.usembassy.gov/prt_news_03182008.html.
22. John J. Kruzal, "Security Transition Command Makes Progress in Iraq," *American Forces Press Service*, 8 June 2009, <http://www.defense.gov/news/newsarticle.aspx?id=54693>.
23. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961-1973* (Washington, DC: Office of Air Force History, 1979), 171.
24. David J. Kilcullen, "Twenty-Eight Articles: Fundamentals of Company-Level Counterinsurgency," *IO Sphere*, Summer 2006, <http://www.au.af.mil/info-ops/iosphere.htm#06summer>.
25. US Senate, "Opening Statement, General David H. Petraeus, Confirmation Hearing: Commander, ISAF/US Forces-Afghanistan, 29 June 2010," United States Central Command, <http://www.centcom.mil/from-the-commander/gen-petraeus-isaf-confirmation-hearing>.
26. Joint Warfighting Center and Gen Gary Luck and Col Mike Findlay, "Insights & Best Practices: JTF Level Command Relationships & Joint Force Organization," Focus Paper no. 4 ([Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, November 2007], 5, <https://jko.harmonieweb.org/lists/Sitelinks/attachments/63/JTF%20level%20Command%20Relationships%20and%20Joint%20Force%20Organization%20-%20Focus%20Paper%204%20-%20Nov%202007.pdf>).
27. SSgt Phillip Butterfield, 332nd Air Expeditionary Wing Public Affairs, "Iraqi Army Returns to Joint Base Balad," *Air Force News Service*, 18 August 2010, <http://www.globalsecurity.org/wmd/library/news/iraq/2010/08/iraq-100818-afns01.htm>.
28. AFD 31-1, *Integrated Defense*, 8.
29. *Ibid.*, 2.
30. Vick, *Snakes in the Eagle's Nest*, 108.
31. David A. Shlapak and Alan Vick, "Check Six Begins on the Ground": *Responding to the Evolving Ground Threat to U.S. Air Force Bases* (Santa Monica, CA: RAND Corporation, 1995), 15-16.
32. Col Anthony Packard, JISE-B.
33. Lt Col Eric R. Timmerman (commander, 1st Battalion, 28th Infantry Regiment "Black Lions," 4th Infantry Brigade Combat Team), interview by Lt Col Shannon W. Caudill, 17 July 2010.
34. *Ibid.*

Chapter 5

The Defense of Joint Base Balad An Analysis

Joseph A. Milner

Aircraft are most vulnerable on the ground. Thus, force protection is an integral part of airpower employment.

—AFDD 1, *Air Force Basic Doctrine, Organization, and Command*

Since the inception of airpower, Airmen have struggled with the dilemma of how to protect the capability to fly, fight, and win. When aircraft are removed from their natural environment of the air and returned to their bases, they become vulnerable, like any bird of prey in its nest. If one recognizes this threat, it becomes apparent that base defense—defending one’s air assets on the ground—is one of the least understood operational aspects of airpower. The current US Air Force (USAF) strategy for defending air bases is integrated defense (ID)—formerly known as air base defense or air base ground defense. This study examines the first full implementation of ID in a combat environment to evaluate the effectiveness of the new strategy in actual operations. The research focuses on what can be learned from the ID experience and what are important considerations for future operations.

The USAF historically considered threats outside the air base perimeter the responsibility of either sister services or host-nation forces. Vietnam and the First Gulf War demonstrated that these organizations may not have sufficient forces to perform exterior air-base defense missions effectively, or they may be willing to accept risks air base commanders deem unacceptable. As a result, the USAF began evaluating its strategy and tactics, techniques, and procedures (TTP) for defending air bases and developed ID, publishing Air Force Tac-

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tics, Techniques, and Procedures (AFTTP) 3-10.1, *Integrated Base Defense*, in 2004 and AFPD 31-1, *Integrated Defense*, in 2007.¹ This concept called for the “application of active and passive defense measures, employed across the legally-defined ground dimension of the operational environment, to mitigate potential risks and defeat adversary threats to Air Force operations.”² This concept was further refined in October 2011 to include “offensive and defensive capabilities” in the definition to emphasize the spectrum of base defense requirements needed to defend air assets and personnel “within the Base Boundary (BB) and the Base Security Zone (BSZ).”³

The ID operational approach is a new way of thinking that shifts security operations from a compliance-based model to a capabilities-based construct and emphasizes ground intelligence-collection efforts in the operational environment. ID is designed to become a “fundamental battle competency for all Airmen, whether garrison or deployed.”⁴ ID applies a systems approach to defending air bases and a collaborative base defense operation with joint, combined, host-nation, and local civil authorities.

The first operational test of ID came in 2008 when the USAF became the base operating support integrator (BOS-I) for Joint Base Balad (JBB)—formerly known as Logistics Support Area Anaconda and Balad Air Base. This gave the USAF responsibility for defending the base and its assigned joint forces, including the conduct of counter-indirect fire (IDF) operations outside the base perimeter.⁵ Insurgents successfully interrupted and impeded operations with over 400 attacks in 2006 alone. The base defense strategy prior to 2008 was reactive in nature, consisting of chasing the IDF shooters after attacks or employing counterbattery fire against the incoming fire’s point of origin (POO)—providing limited success in significantly reducing the number of attacks and deterring the insurgents.

As BOS-I the USAF took a different approach and committed Airmen to an exterior base defense role in the largest combat deployment of USAF security forces (SF) since the Vietnam War. The new strategy called for moving from reactive to proactive operations facilitated by committing intelligence analysts to ground-defense intelligence and overlaying residual air assets in a systematic way to map the human terrain “outside the wire” (OTW) and outside the base defense perimeter. This increased the amount and quality of the intelligence and information available, allowing directed, proactive patrolling by the SF. This freed the local US Army battlespace owners’ (BSO) forces to con-

duct enhanced counterinsurgency (COIN) operations and key leader engagements within the Balad area. This synergy laid the groundwork for an integrated COIN plan that took advantage of the efforts of joint military, governmental, and nongovernmental organizations (NGO) in the Salah ad Din Province. This “all of government” approach to COIN integration significantly increased the security of Balad.⁶

The net result of the implementation of ID was an observed drop of 75 percent in the number of attacks overall and a continuous increase in the miss distance of the attacks when they occurred. Miss distances also doubled, producing a 75 percent reduction in their effectiveness from attacks. The combination of the increasing miss distance and the decrease in the numbers of attacks resulted in an enemy combined loss of effectiveness of over 90 percent. The defense of JBB was similar to the overall Iraq War decline in attacks. This evidence is consistent with deterring attacks according to previously developed deterrence theory and suggests that deterrence theory may be as applicable for ID operations as it was for Iraq COIN operations. The difficulty in analyzing situations resulting from the irregular nature of the attacks on JBB required more advanced analysis techniques to reveal the true nature of the ID success.

The success at JBB validates the ID concept and demonstrates the application of lessons learned from previous conflicts. These lessons include the need to provide dedicated and integrated ground intelligence to defend an air base and unity of command to base defense forces under a single commander and to account for the enhanced effects of joint operations. These lessons did not come without a major effort to overcome three significant barriers in implementation; foremost was an ambiguity in who was responsible for protection beyond the base perimeter at the most senior levels of USAF leadership. This ambiguity occurred because of a “roles and missions” conflict in the joint community regarding the definition of defensive operations and a lack of understanding of ID concepts. The second barrier was that the USAF had neither fully embraced the requirements nor adapted the training and equipping of SFs to meet the operational requirements of ID. Once leaders accepted the need to send forces off the base to stop the threat, they realized USAF forces had neither the training nor the equipment to conduct such missions. The third major barrier was in adapting the USAF’s logistical processes to allow for the acquisition of specialized ground combat equipment that is either the same or compatible with our joint partners’ equipment. This

equipment is not in the USAF's current inventory. Additionally, the USAF's current logistics system does not possess the parts available for a repair/sustainment capability once the equipment is acquired.

Plans are already under way to address and correct some of the barriers that have been identified in the lessons learned. Headquarters USAF Force Protection (HAF/A7S) developed a master action plan for USAF SFs in an effort to continually strengthen and improve those units. An important goal optimizes the training lifecycle and incorporates the lessons learned into the current education courses. The lessons learned will modernize education courses to ensure that USAF personnel arrive in theater with the training to conduct ID upon arrival. Another important goal is to standardize the requirements process by incorporating integrated efforts with USAF Logistics' (A4L) Combat Airmen initiative for the procurement of ground combat vehicles and equipment. The remaining objective is to educate USAF leadership on ID and the threat mitigation requirement to extend operations into the base outer security zone as far as the effective range of an adversary's weapons.

The threat against USAF aircraft on the ground will not change. The lessons learned at JBB cost less overall when compared to Vietnam, despite many more attacks, because there were far fewer casualties. Any effort to bring down the risks even further cannot be successful without leadership support and an understanding of the role the USAF must take in its own defense.

Organizing for Success

The successful implementation of ID was essential to the protection of JBB as Operation Iraqi Freedom progressed. In 2006 sectarian violence escalated to a point where commanders on the ground convinced civilian leaders of the need for additional forces. At the same time, escalating attacks against coalition forces across the nation forced the services to evaluate both the combat and combat support functions each provided, with an eye toward how expanded or surge operations might impact each service's ability to operate successfully in Iraq. Army and USAF leadership began to discuss which service would be responsible for BOS-I for Balad AB/LSA Anaconda. USAF senior leadership understood the ambiguity of accepting the mission based on a belief that the Army still retained the defensive mission,

but the pure logistical inability of the Army to conduct the coming surge operations in the numerous additional locations forced the USAF to take on the mission. The actual 2007–8 surge shortly followed, seeing the addition of 30,000 US forces into Iraq and a subsequent increase in patrols and kinetic operations. As depicted in fig. 5.1, this period allowed the USAF to plan for and assume BOS-I for Balad AB/LSA Anaconda in November 2008, which was renamed Joint Base Balad.

JBB is strategically centered in Iraq to provide interdiction and around-the-clock close air support operations. The General Dynamics F-16 Fighting Falcon multirole fighters, Fairchild Republic A-10 Thunderbolt II (Warthog) ground-attack aircraft, and Army Boeing AH-64 Apache attack helicopters stationed there could move anywhere in the country in minutes. JBB is located in the Salah ad Din Province, southeast of the provincial capital of Samarra and 65 km (40 miles) north of Baghdad. It is in the fertile Tigris River Basin with numerous farms and groves in the local area. Approximately 120,000 people live in this area, making concealment of the insurgent population easier and complicating counterbattery fires.

When the 332nd Air Expeditionary Wing (AEW) became the BOS-I in November 2008, USAF SFs were charged with the defense of Iraq's only named joint base out to 8 km from the base boundary. To achieve ID, JBB organized its base defense assets under the 332nd Expeditionary Security Forces Group (ESFG), which was activated on 24 July 2008, marking the first time the USAF deployed more than 900 Airmen within a single unit to defend an air base in combat since the Vietnam conflict.⁷

The Organization

The 332nd ESFG was comprised of three distinct elements: two expeditionary security force squadrons and a robust staff element. The 332nd ESFS was tasked with perimeter and interior security for JBB. The 532nd ESFS was tasked with exterior security, including the entry control points to the base and the exterior patrols and tactical security elements (TSE) escorting local Air Force Office of Special Investigations (AFOSI) agents in their OTW missions. Both units utilized a combined force of USAF SFs and private security to accomplish their missions. To support these two squadrons, the 332nd ESFG staff conducted standard group functions, along with incorporating

several enhanced operations such as 24/7 operations for the joint defense operations center (JDOC); counter-rocket, artillery, and mortar (CRAM); and Joint Intelligence Support Element (JISE)–Balad.

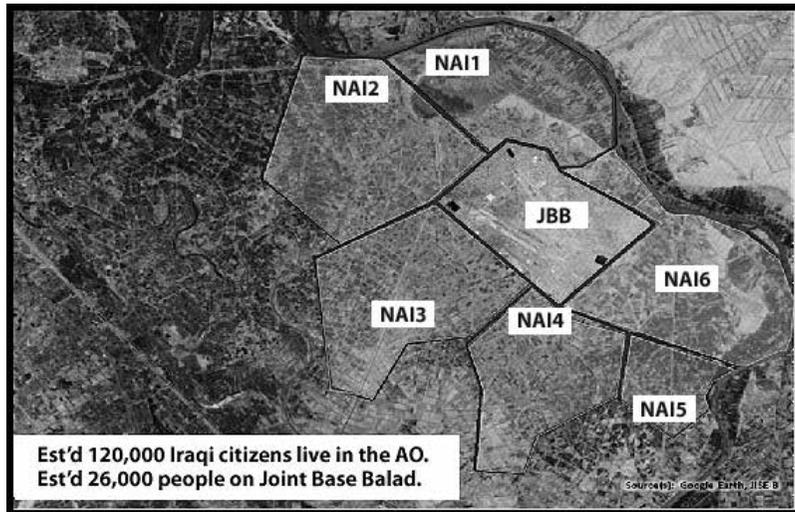


Figure 5.1. JBB with named areas of interest depicted around the installation. (Lt Col Shannon Caudill, 532nd Expeditionary Security Forces Squadron [ESFS] mission briefing, October 2009.)

The defense force commander (DFC) synchronized all ID operations through the JDOC, collocated with the local Army BSO's tactical operations center. The organizational breakout of the group as it looked in July 2010 is depicted in figure 5.2.⁸ The JDOC, by virtue of both its physical composition and the vast suite of technologies, was the DFC's integrated command and control hub and a true joint collaborative environment. Just under \$500 million in technologies provided a 360-degree security sensor and video system capable of viewing the surrounding 12 miles beyond the base boundary. The JDOC, operated by Airmen and Soldiers, was the central nervous system of the defense scheme. The JDOC directed and integrated all security systems in the overall defense of JBB; this included all physical security subsystems (detection, delay, and response) both inside and outside the wire. The JDOC also served as the tactical integrator of intelligence and the BSO's effects guidance to drive the base defense effort. The JDOC helped develop joint command relationships, fully inte-

grating the joint and combined forces into a comprehensive defensive operation for JBB.⁹

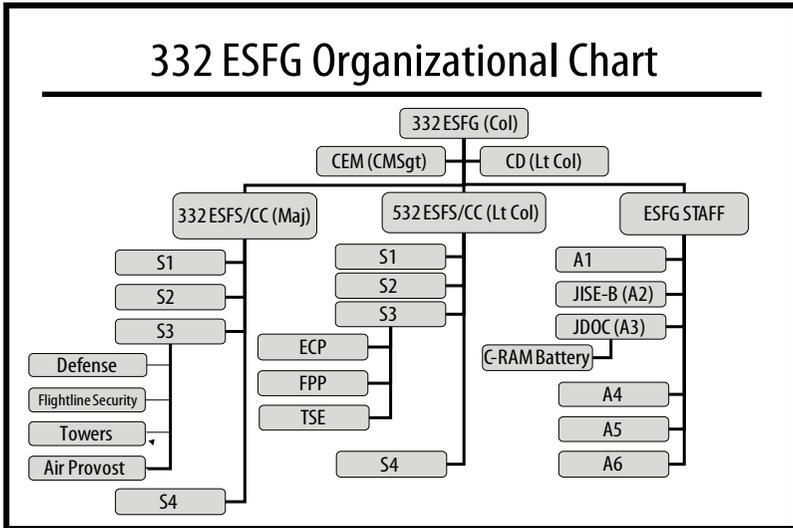


Figure 5.2. 332nd ESFG organizational chart

The mission of the 332nd ESFS was to protect personnel and resources in an expeditionary environment with an emphasis on defending the base from a complex attack at the wire or within the installation. To accomplish the mission, the 332nd integrated nearly 400 private security company guards into its defense posture. The private security guards manned the perimeter towers and internal posts located outside highly populated areas such as morale, welfare, and recreation (MWR) facilities, base exchanges, the hospital, and other areas where 50 or more personnel gathered on a regular basis. The presence of the contract guards relieved US uniformed military forces to accomplish other essential wartime duties.¹⁰

Normally, the 332nd ESFS manned only half the perimeter towers on a random rotation. Nonetheless, tower manning increased to 100 percent during reduced visibility or in response to a significant change in threat. Initially, the wing relied on all tenant units to provide “troop-to-task” manpower for the increased tower posts—a process normally requiring around four-plus hours to complete. To better protect the base, the 332nd ESFS added the 100 percent requirement

to the private security company contract, and the process shortened to less than 60 minutes.¹¹ Air Provost services, such as law enforcement patrols, building checks, and traffic enforcement, are a necessity for the safety of all war fighters in a deployed location. The Air Provost at JBB was more than law enforcement. It also included police services during special events, including large United Service Organizations, Armed Forces Entertainment, and MWR functions, which are all common occurrences to raise the morale in any deployed location. With 26 such events in 2009, JBB was no exception.

Technology was critical to the success of 332nd ESFS operations. With the largest Enhanced Tactical Automated Security System (ETASS) in the Department of Defense, the unit had the ability to monitor and immediately assess events at the base perimeter and the restricted area fence lines. The ETASS operators monitored the 21-km-long perimeter and the 16-km restricted boundary with nearly 550 sensors supported by nine wide-area surveillance thermal imagers, 12 long-range thermal imagers, two super long-range thermal imagers, 13 handheld monitors, eight closed-circuit televisions, and eight man-portable surveillance and target acquisition radars. All of these systems provided immediate visual assessment throughout the interior and exterior of the installation.¹²

The 532nd ESFS was charged with three primary missions: screening everyone and everything entering the base through the entry control points (ECP), conducting combat patrols off the installation to disrupt and deter IDF attacks and the placement of improvised explosive devices along supply routes, and providing TSEs in support of AFOSI operations. The 532nd ESFS directly contributed to the BSO's COIN campaign plan through its interaction with the local population, intelligence collection against high-value individuals, and deterrence effect in the BSZ.¹³

Overseeing all ECP operations was an officer in charge (OIC), two assistant OICs, a noncommissioned officer in charge (NCOIC) of ECP operations, and an NCOIC at each ECP. Although each ECP had a different mission set, they had very similar structures for posts and responsibilities. For example, each ECP maintained an internal response force (IRF) to respond to any suspicious activity or possible threats, conduct random antiterrorism measures, and provide overwatch for pedestrian or vehicle searches. Additionally, each ECP manned towers to monitor assigned fields of fire, provided overwatch for IRF patrols, identified possible threats, and provided information

to the ECP command post.¹⁴ ECPs incorporated Iraqi private security guards, known as the Iraqi Vehicle and Pedestrian Screeners (IVPS), into the inspection and pat-down process for all noncoalition pedestrian and vehicle traffic at designated checkpoints *outside* the ECP. Bringing the local population into the defense of the base through IVPS employment as the initial point of contact for Iraqis coming to JBB was a phenomenal success. It put an “Iraqi face” on the security team to reduce the need for an escalation of force.¹⁵

The private security contractor (PSC) at JBB provided critical manpower to the 332nd ESFG. PSC personnel comprised more than half of the ECP section, serving as vehicle searchers and in other static posts such as the badging offices at each of the three ECPs.¹⁶ At the ECPs, the PSC guards worked the tower observation posts, traffic control points, and armed escorts. They also operated the mobile and rail vehicle and cargo inspection systems and conducted physical searches of personnel and vehicles prior to their entry to JBB. They were armed and subjected to the same use of force and rules of engagement (ROE) as US service members.¹⁷

Technology significantly enhanced ECP operations but also required a dedicated force to maintain it. Through the use of contracts funded by US Air Forces Central (AFCENT), field service representatives kept the equipment operational. Listed below are several systems installed at each of the ECPs to provide a thorough and redundant inspection and screening capability.¹⁸

For many years, SFs have organized, equipped, trained, and executed operations in an environment outside the base. Since the start of the global war on terrorism, much of what we knew about air base defense came from preexisting manuals, journals, and regulations, but much has changed—sometimes even overnight. The greatest change is the need for expansion and coordination with joint, coalition, and combined forces and host-nation police and security forces. With little background or training, the average SF unit will now be asked to train and fight alongside or with joint partners like the US Army. Fostering relationships with sister services and coalition partners is a prerequisite to conduct operations OTW. With respect to the Army, it is normally the battlespace owner, and it can/will decide when/how SFs will fit into the strategic and tactical picture. The USAF must learn the way the Army and other services conduct operations.¹⁹ Concepts of operation (CONOPS) were developed to outline BSZ missions mirroring an operation order but in a shorter digital

format. The Army had adopted the use of Microsoft PowerPoint® for CONOPS, and the BSO required it prior to any movement in the BSZ.

A tactical security element is an SF team, approximately squad sized, tasked to perform mobile and static tactical security operations in support of AFOSI's counterterrorism operations (CTO) and counter-intelligence (CI) missions. These missions primarily consist of routine combat mounted patrols between the main operating base (MOB) and off-base (objective) locations.²⁰ Two squads of TSEs were assigned to the 532nd ESFS under the tactical control (TACON) of the commander, Expeditionary Detachment 2411th, AFOSI. The 532nd ESFS was responsible for the administrative and day-to-day support of the TSE, while the AFOSI detachment commander directed its missions. It was critical for the commander to provide a mission brief and establish expectations for the TSE. The relationship and communications chain need to be strong between the detachment commander and SF commander to achieve maximum results. All teams had the capability to shoot, move, and communicate at a high level of proficiency in day, low light, and blackout conditions in any type of terrain or weather condition. When TSEs moved in the battlespace independent of, but coordinated with, the BSO, they abided by theater and local guidance, including the numbers and types of vehicles required for OTW operations.²¹

Several unique relationships provided a doctrinally sound, joint defense structure to the 332nd ESFG, beginning with the tactical control of the CRAM joint intercept battery under the DFC. An Army air defense artillery battery commander was responsible to the DFC for the eight guns and seven radar systems employed to provide sense, warn, and intercept capability and operational control of the 66 Soldiers and 64 Sailors assigned to the battery. Several improvement initiatives resulted in a system performance record unmatched in Iraq: a 90 percent sense and warn rate that gave personnel a chance to take cover before IDF impacts and a 164 percent increase in intercepts in 2009. CRAM was a unique defense against enemy IDF attacks and was a localized warning to populated areas of the base. From a unity-of-command perspective, it was clear that placing CRAM under the tactical control of the DFC ensured synchronization of its capabilities into the base defense architecture of JBB to counter IDF.²²

Another unique joint relationship was the OTW force protection patrol's relationship with the BSO. Once the patrol exited the base

perimeter or “breaks wire,” those forces were TACON to the BSO. The Army BSO had operational responsibility for the terrain adjacent to JBB, which made up the BSZ covering the threat rings produced by the IDF threat. As part of the BSO relationship, all coalition units transiting through the BSO’s area of responsibility were required to comply with his campaign plan and the commander’s intent for the battlespace. Additionally, all of these transiting units had to comply with Army communications procedures, tactical command and control protocols, and the requisite mission-planning requirements. Compliance with his guidance and generation of the desired effects in the local area demanded a fully synchronized and coordinated effort between the USAF and Army ground forces that defended the air base.²³ In short, the operational challenges of the BSO went far beyond the defense of JBB, as he had responsibility for a large geographic area: more than 3,000 sq km rather than only the 243 sq km encompassing the JBB BSZ.²⁴ Unlike operations in Vietnam, JBB employed dedicated intelligence assets for base defense under the A2/JISE. In Vietnam, USAF intelligence assets focused on air operations and provided little ground-intelligence support to base defenders—a situation that resulted in losses that would be unacceptable in the current war. The JISE—a dedicated, 22-person, ground-focused, force-protection intelligence organization—was established at JBB to remedy this historic shortfall. The JISE was comprised of four components: an intelligence collection cell, an atmospherics collection cell, an all-source cell, and the direct liaison cell with the 532nd ESFS off-base patrols.²⁵

The intelligence collection cell included specialists in the human intelligence, signals intelligence, and geospatial intelligence disciplines. These specialists not only answered the analysts’ and operators’ requests for information but also became proactive in seeking out tailored products and reports from national and theater intelligence agencies, using a “smart pull” concept to prevent becoming deluged with data of marginal utility to the mission at hand.²⁶

In a second cell, three Iraqi-American linguists scoured the Arab media for reports of relevance to the JBB environs, translated documents recovered by ground patrols, and operated a 24/7 tip line, a phone service Iraqi locals could call from off base—where and when they felt most secure—to report on insurgents operating in their villages or attacking the air base from their property. Although uncorroborated, some leaders at JBB believe tip-line callers sometimes of-

ferred the first indications of impending attacks or the first attribution after the fact.²⁷

The JISE's third component was an all-source fusion cell, where data from the collection effort was absorbed, combined, analyzed, and turned into knowledge about the enemy's capabilities and intentions. This fusion cell examined every small arms, improvised explosive device, and IDF attack to determine which TTPs were new, which insurgent cell conducted an attack, what areas each cell operated in, and what activity patterns would enable air and ground forces to maneuver inside the enemy's decision cycle (i.e., that holy grail of intelligence known as predictive battlespace awareness).²⁸

The final cell in the JISE was the direct liaison to the OTW: the 532nd ESFS "Lions." These JISE members not only delivered the relevant analytic products meant to keep the Lions from being surprised in the battlespace but also armed each patrol with knowledge of the networks and their players, many of whom would be in regular, deliberate contact with the Lions. This liaison cell gave many patrols specific essential elements of information to collect during their interactions with the local populace while identifying particular fields to sweep and to occupy, forcing the insurgents to fire from less familiar territory with fewer practiced escape routes. Robust ground-intelligence operations enabled Army and USAF ground forces to defend JBB through proactive deterrent patrols at the IDF POO.²⁹

Intelligence sharing and synchronization proved to be a true joint enabler, which the BSO fully leveraged in his own intelligence analysis and capacity. This coordinated and fully synchronized effort supported a dynamic fusion of intelligence that effectively drove base defense operations within the BSZ. The JISE's analysis led to a targeting process that was truly intelligence driven, which led base defense forces to migrate from a reactive defense model to a more proactive and predictive model. Teaming together, Airmen and Soldiers fed the intelligence cycle, gathering information from relationships established in the battlespace with tribes, families, and individuals that closed the "intelligence gap between themselves and the enemy network."³⁰

An important enabler to this intelligence effort was the leveraging of air assets. Leaders of the 332nd ESFG and the JISE worked to foster a collaborative atmosphere among the joint players, including members of the varied USAF and Army aviation units. This team effort raised awareness of ways in which to gain support of air assets through

the standard air tasking order and collection-management processes and through the use of “residual air” assets: aircraft returning from a mission with remaining fuel that can provide limited yet useful intelligence gathering capabilities. As a result, the JISE obtained regular Global Hawk and Joint Surveillance Target Attack Radar System geospatial products supporting base defense objectives in the battlespace. However, the majority of air intelligence and surveillance data points were garnered from the expeditionary operations group and Army aviation units, both fixed and rotary wing.³¹ While each residual air mission constituted between 15 to 60 minutes of intelligence collection time, the overall plan pieced together persistent ISR for targets of interest given the sheer number of air missions being launched and recovered from JBB.

Combined with the ground-based collection activities of Airmen and Soldiers in the BSZ, the use of air assets served to be a real boon to targeting high-value individuals and the networks with which those individuals were affiliated.³² As participants in the JISE effort relayed, “For each collection target, the plan included specific elements of information meant to enable JISE analysts to fill gaps in their knowledge of the target, his activities, and insurgent networks associated with him. JISE partner analysts supplied crucial information about the activity patterns of each target by maintaining this information on a simple spreadsheet compiled each week.”³³

Air-Ground Integration

Although not immediately obvious, the evolution of the air campaign demonstrates a need for effective linkages between ground and air forces. With a wide variety of aircraft platforms with variable operating times in the air, “air-smart” ground forces must understand the value of dominating the battlespace in three dimensions and be able to leverage every ounce of capability provided, ranging from minutes to hours. With only one to three force protection patrols available in the BSZ at any given time and covering 60,000 acres of battlespace, airpower is essential for countering the disadvantages that the terrain poses to ground forces.³⁴

The terrain also contributes to the complexity of the problem set. The terrain around JBB is in the vicinity of the Tigris River and consists of agrarian lands fertile by Iraqi standards. The rural communities and agriculture are fueled by intricate systems of canals that

compartmentalize the battlespace with very few direct routes to anywhere. The surrounding area provides for an impressive variety of crops and vegetation that provide an endless number of hiding places and alternatives to insurgents seeking to attack US forces or JBB. Isolated fields and vineyards worked by commuter farmers offer a witness-free environment for determined insurgents. The confusing lattice of canal roads was designed to support smaller local traffic and farm stock, not armored combat patrols. With each hour of continuous rain, trafficable routes quickly become mired and increasingly impassable, making large swathes of the battlespace isolated and inaccessible. The temporal and spatial disadvantages of this environment offer corresponding advantages to the adversary that must be countered by airpower.³⁵

It is not a cliché to say squad leaders had to be taught to think on the fly. A variety of air assets with a host of uses, many platform specific, required a form of education. Airmen needed to understand the capabilities of available assets and how they contribute to the ground fight. Army aviation units taught Airmen their TTPs for linkup and communication in the battlespace in order to direct rotary-wing assets for patrol overwatch and route/objective reconnaissance. Over 300 Airmen were trained on MOVER use, giving them the ability to direct ISR assets and kinetic platforms and an unprecedented level of situational awareness.³⁶ Such capabilities brought the counter-IDF fight to new heights, enabling the transition from merely “POO responders” to hunters who could, in effect, track shooters to their doorsteps. As the USAF’s “air IQ” increased, its air-minded operations became preemptive in nature and allowed it to track and interdict munitions prior to final emplacement at the attack location.³⁷

Joint and combined partnerships in today’s battlespace are very complex. It is the BSO’s responsibility to synchronize all friendly forces in his area of operations. Naturally, this includes kinetic and nonkinetic operations, steps to ensure situational awareness of all forces, and controls and limitations on fire-support coordination measures. The BSO effectively leverages the capabilities “of all coalition, host-nation, and other partner units, including nonmilitary entities, such as the Department of State’s provincial reconstruction teams (PRT) and NGOs.”³⁸ A critical point of consideration in evaluating the effectiveness of JBB base defense is that the symbiotic relationship between the BSO and JBB ultimately yielded a more efficient use of resources and eliminated potential redundancies in

intelligence collection. Important to future efforts is the willingness of the BSO to partner in his area of responsibility. As a US Joint Forces Command report noted in relation to the conduct of BSOs, “Many joint players . . . operate in the battlespace owners’ areas of operation. . . . Battlespace owners are becoming increasingly more comfortable with these ‘non-assigned’ players in their battlespace.”³⁹

When one contrasts the challenges of protecting air bases in Vietnam and Iraq, there are a number of key differences. As a noted RAND study observed, “The standoff threat, particularly from rockets, proved troublesome through the end of the Vietnam War. Given the nature of the conflict and the terrain, there was no perfect countermeasure to this threat.”⁴⁰ This same observation held true for the threat and terrain around JBB.

Trained soldiers or insurgents in Vietnam were capable of hitting targets consistently, while at JBB it was a more diverse group, including well-trained former Ba’athists, disenfranchised tribes who were like militia, and unskilled attackers who simply fired on the base to make money. Because this group did not have the specific training and incentive to destroy targets, over 50 percent of the IDF fired at JBB did not even land within the perimeter boundary.⁴¹

While less frequent, the attacks in Vietnam were more effective at disabling and disrupting air operations. Between 1964 and 1973, Viet Cong and North Vietnamese Army forces attacked the 10 US bases only 475 times, but the attacks were much more intense and included multiple launches of IDF with over 250 attacks with five or more rounds, 164 attacks with 10 or more rounds, and eight attacks with 80 or more rounds fired.⁴² Attack intensity was a major difference at JBB because the largest attack was only 16 rounds. The number of rounds fired per attack in both Vietnam and at JBB is depicted in figures 5.3 and 5.4.

The difference was the effect of the enemy’s ability to fire multiple rounds in one attack prior to countermeasures by US forces. In Vietnam, the enemy destroyed 99 US and South Vietnamese aircraft and damaged 1,170 aircraft along with multiple facilities, fuels, munitions, and so forth. Conversely, no aircraft were destroyed in the attacks on JBB, and only a few were damaged, with no major facilities damaged or destroyed at JBB.⁴³ A major difference in JBB was better attack warning from counterfire systems.

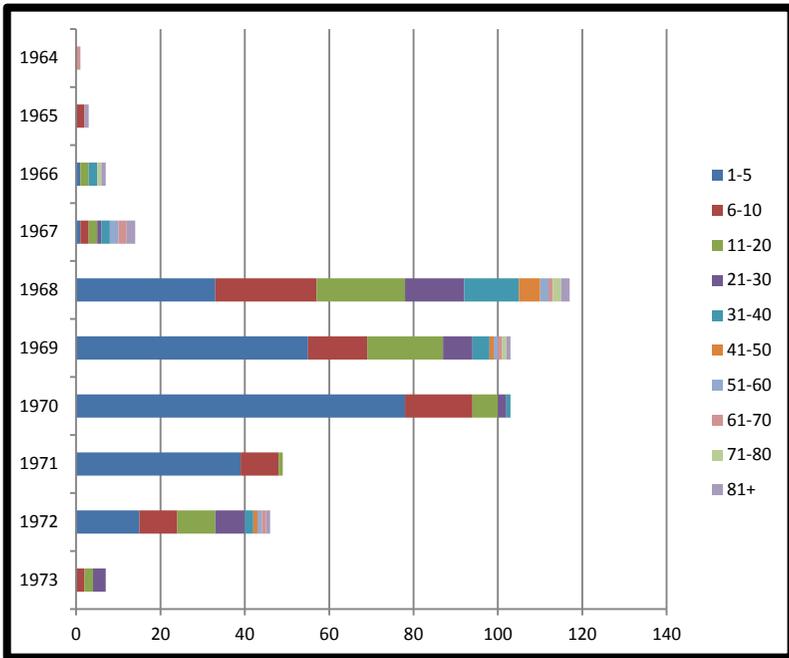


Figure 5.3. Number of rounds fired per attack in Vietnam

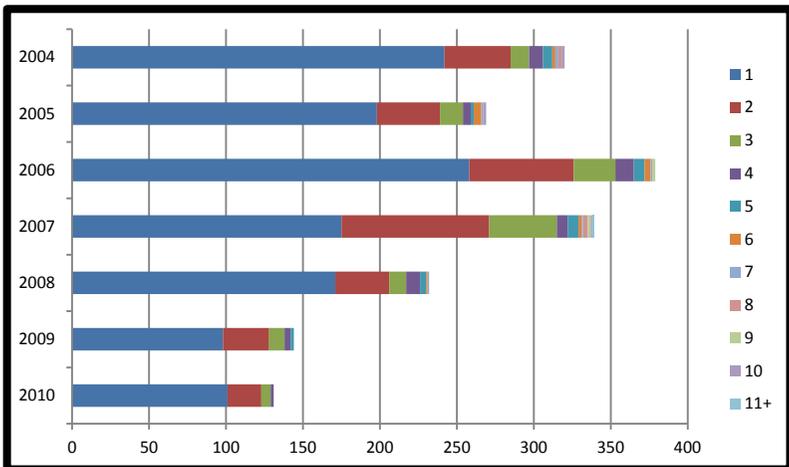


Figure 5.4. Number of rounds fired per attack at JBB. (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 2011)

Some significant differences also can be observed in the complexity of IDF attacks. Those in Vietnam proved more effective because the enemy was able to mass fires and conduct simultaneous ground attacks, due to the inability of defense forces to effectively patrol and dominate the BSZ. As a result, Vietnam theater air bases faced not only IDF attacks but also some 29 simultaneous sapper attacks, attempts by enemy forces to penetrate perimeter defense in order to destroy aircraft and key facilities.⁴⁴ Importantly, eight of those attacks utilized IDF as a cover to screen attackers during ground assaults, something not observed in Iraq but which did take place in Afghanistan.⁴⁵

In evaluating a methodology for deterring air base attacks, there are some established theories from which one can evaluate a template. The concept of deterrence against irregular criminals and terrorists was first developed in the Western Hemisphere for the prosecution of conflicts against drug traffickers and insurgents.⁴⁶ For example, with deterrence analyses in place, Adm Robert Kramek, US interdiction coordinator, convinced Pres. Bill Clinton to approve the use of lethal force against drug trafficking aircraft flying from Peru to Colombia in 1995.⁴⁷ Interviews with the drug traffickers determined several key factors in their willingness to conduct trafficking operations in the face of countertrafficking operations. The fraction (P) of effectiveness of shooting down trafficker aircraft was observed to be proportional to the interdiction (I) rate below a critical threshold but above the critical threshold (2–4 percent lethal effectiveness) to be inversely proportional to the interdiction rate: $P(I) \approx I^{-1}$. The key is to find the critical threshold from incomplete data. The condition for deterring attackers can be demonstrated by a power law that is inversely proportional to the tactics and actions taken by USAF SFs. In *detering* insurgent attacks on JBB, the intervals between attacks should get larger at a rate that is inversely proportional to a power law with a -1 exponent.

Data Analyses

Did the defense of JBB demonstrate a successful deterrence of insurgent attacks? Raw operational data were obtained from the 332nd ESFG/JISE and contained about 3,000 records, of which about 3 percent were false alarms. Most attacks were conducted using indirect fire weapons, principally mortars and rockets. The broad characteris-

tics of the data showed that the preponderance of attacks were single, lower-risk attacks with a few higher-risk, multiple, coordinated attacks. While the tactics and operational concepts will be discussed elsewhere, this analysis examines what can be learned from quantitative techniques consistent with this data. The attack data begins in May 2004 and ends in early 2011.

The median monthly attacks on Joint Base Balad and the increasing intervals between attacks by insurgents are depicted in figure 5.5. There are five operational periods distinguishable in the data, and these periods are consistent with the following attack phases:

1. Initial attacks against a newly established base
2. Insurgent reinforcement, below the critical threshold, and undeterred behavior
3. Beginnings of effective defensive operations above threshold for deterrence
4. Continuation of deterrence phase against the insurgents
5. Consolidation phase, initiative achieved, deterrence increases effectiveness

The bottom half of figure 5.5 shows the raw attack interval data (dots), which is a linear increasing-interval median trend line of about fourfold improvement, and a 60-day median moving average indicator.⁴⁸ Arithmetic averages are very unstable and lead to erroneous conclusions, as will be discussed at the end of this chapter—a limitation of power law distributions.

Examining the Effectiveness of Deterring Attacks on Joint Base Balad

The first factor for assessing insurgent effectiveness in attacking the base consists of declining attacks. There is a second factor: the number and intervals of attacks because of the decreasing accuracy of attacks. Because the effectiveness of “area” weapons in causing damage scales as the square of the miss distance, doubling the miss distance decreases damage by about 75 percent. Because the warning system was able to estimate miss distance, this data was available. Figure 5.6 depicts the same operational periods and the increasing miss distance as the insurgents are more and more deterred.

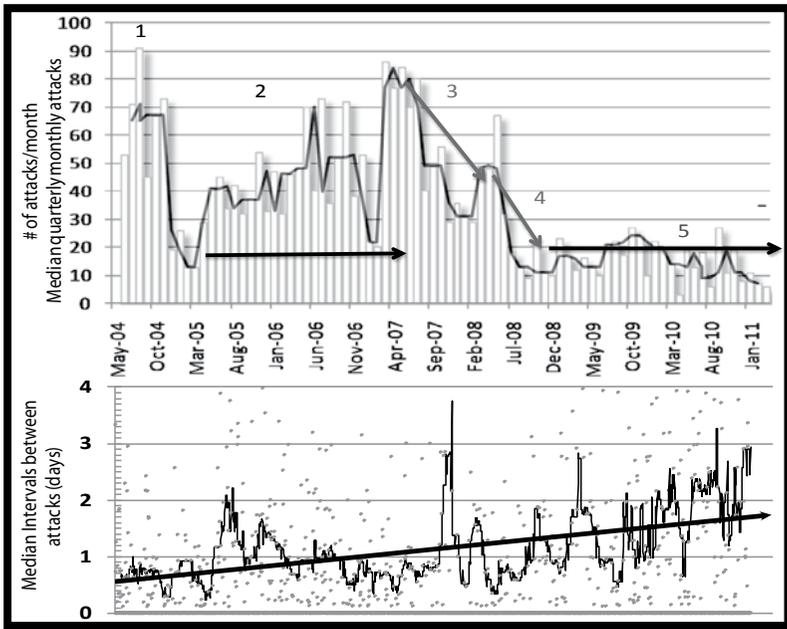


Figure 5.5. Median monthly attacks and attack intervals on Joint Base Balad. (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 2011)

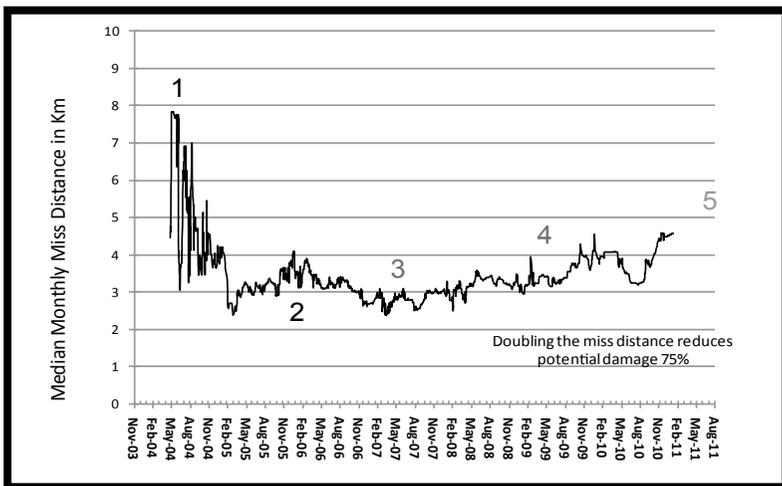


Figure 5.6. Increasing insurgent miss distance as captured by the warning system. (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 2011)

The last phase of the analysis examines the power law behavior of the intervals between attacks. Increasingly longer times between indirect attacks are evidence of deterrence. If the exponent is about -1, then the enemy is deterred. Computational difficulties arise from -1 slopes of power laws since the average of a sample can be calculated, but it *does not represent any good measure of the average of the true situation*.⁴⁹ Very long, seemingly random variations of the average metrics cast great doubt on them as useful indicators.

In these analyses, all of the conditions necessary to demonstrate deterrence were present. The evidence of deterred attacks after mid-2007 suggests that the increase in kinetic operations during the 2007 surge initially deterred the insurgents, but they quickly adapted their methodology to the new environment, and attacks were on the rise upon deployment of the 332nd ESFG. Evidence suggests that USAF SFs employed a near optimum strategy, making the insurgents alter their behaviors significantly and reversing the trend of the insurgent activity. In operational terms the SFs gained the initiative against the insurgents, using force-multiplier deterrence techniques to enhance their effectiveness and reduce the overall costs of defense.

Analytical Difficulties in Analyzing the JBB Defense

USAF SFs used standard analysis techniques to evaluate the data they gathered on attacks and the effectiveness of attacks. These standard techniques included averaging events each month to try to understand what was effective. Standard analyses did not yield a clear picture of the attack situation because the convergence of small samples' means is not a guaranteed or even a good indicator of success. Means or averages significantly overestimate enemy capabilities in a random and unpredictable way. Analytical problems of this type were first pointed out involving the drug war in 1997 where the conditions for convergence were used to understand these analytical difficulties.⁵⁰

In this chapter, events, intervals of attacks, and miss distances were all analyzed using medians because the median always converges for *unknown* distributions. In the JBB analysis, the intervals of attack events demonstrate a power law exponent of -1 (see fig. 5.7), suggesting that averages do not converge.⁵¹ While the monthly averages can be computed in the SFs' standard analyses, these averages have little accuracy in evaluating effectiveness. Using standard analysis tech-

niques, it took much longer to assess effectiveness of the ID strategy, where the median result is much more obvious. The median result and the errors occurring if an average is used are compared in figure 5.8. Average errors are very large (-30 percent to 150 percent) and grow larger as the data samples become smaller as success is occurring. The fluctuations are observed to be random and solely dependent on the random sequence of the attacks. Such behaviors hide the true situation, and these problems are fundamental to making assessments of irregular conflicts.

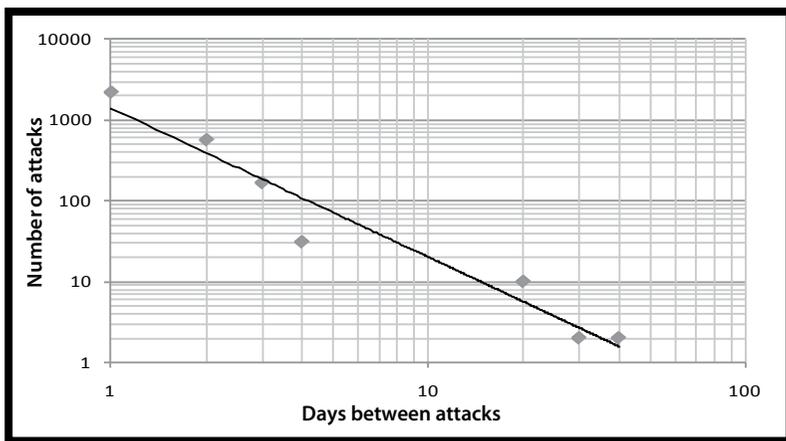


Figure 5.7. Power law (number= $450 \times [\text{days}]^{-1.087}$) of deterred attack intervals. (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 2011)

Conclusions and Recommendations

One can draw four conclusions from the research into JBB's base defensive scheme. First, the JBB approach worked due to a high level of synchronization between joint and coalition partners, both operationally and intellectually through intelligence sharing. Second, the limited number of published materials on base defense, especially as it relates to a COIN environment, points to the need for participants to join in a more robust intellectual engagement in a lessons-learned process. Third, US joint forces would benefit from an established DOD or USAF database specifically tailored to capturing air base attacks worldwide. Finally, the study of JBB and other base-defense

case studies can provide lessons that may inform the US effort to re-balance to the Pacific.

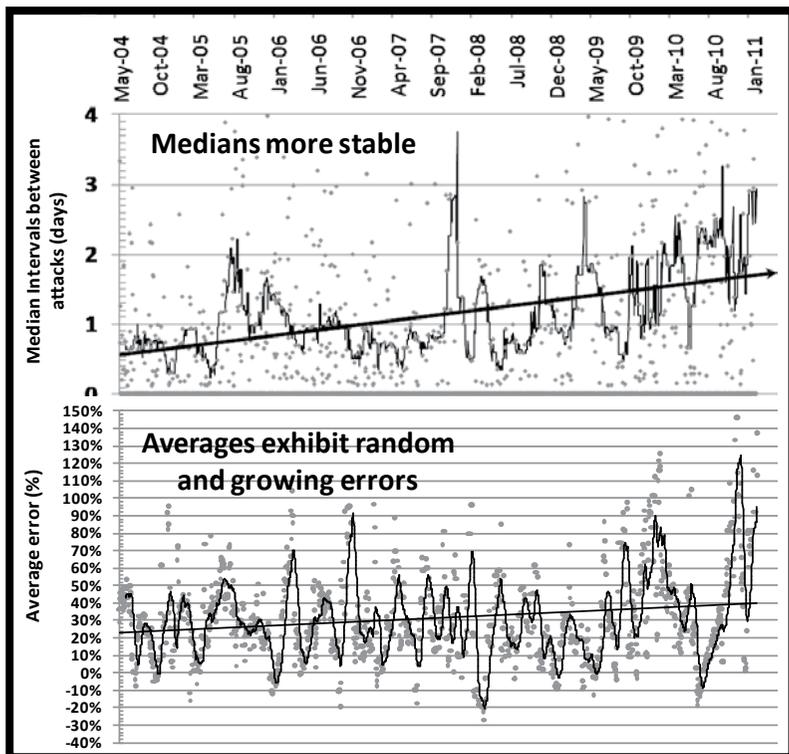


Figure 5.8. Medians give stable attack interval trends, and averages give increasing errors of attack intervals (bottom figure). (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element, 2011)

Lesson One

JBB's base-defense model worked for its operational environment. It would be a mistake to say that the successful outcomes at JBB should become the template for base-defense operations in the future because that argument is simply "templating." The base-defense scheme must be tailored to the operational environment, specific threat, and joint and host-nation capabilities. The lessons learned in defending JBB have highlighted capabilities and ID strengths that the

USAF can contribute to defend against asymmetric threats. As such, the USAF must continue to refine its ID approach, train leaders who understand and embrace opportunities to work within the joint-ground BSO concept, and develop leaders who can readily adapt to complex operational environments, including joint operations in COIN and stability-operation environments. Therefore, the USAF must codify the operational lessons of JBB's ID into flexible and adaptable organizational and operational constructs that it can apply to current and future base defense operations, including potential contingencies supporting the pivot to the Asia Pacific.

Lesson Two

Airmen need to be intellectually engaged in evaluating ID concepts. Simply, this means constantly reading, writing, researching, and intellectually engaging in all aspects of force protection, base defense, and irregular warfare doctrine. As three senior members of the base defense team noted, "At JBB, USAF leaders at all levels embraced the ID concept and searched for ways to support the BSO's COIN campaign plan because it paid dividends to the installation's defense, ensuring the conduct of air operations in a more secure and stable environment."⁵² However, this took a great deal of internal education on COIN, focusing on how to best synchronize approaches with the BSO and establishing improved liaison and coordination mechanisms.⁵³ To this point, a key source for the research contained in this study was an "unpublished" lessons-learned report.⁵⁴ Even though it was drafted and staffed, no one in authority finished the work by formally approving and disseminating the lessons learned. There was no formal demand for the product by the USAF, and it sat dormant—an unfortunate state of affairs when its lessons could have better informed Airmen and joint service members heading into conflicts in Iraq and Afghanistan.

Lesson Three

DOD and the USAF must establish an ongoing database that captures and categorizes from all air base attacks worldwide. It is critical to understand the nature and evaluation of evolving threats to air bases and air assets. The establishment of such a database would pay dividends to operators, base defenders, intelligence analysts, and researchers, thus ensuring a solid foundation from which to build a

flexible and adaptable defensive construct. As an example, the USAF has invested human capital in the Air Force Research Institute's Theater History of Operations Reports (THOR) database, which plots every bomb dropped by US airpower across the globe.⁵⁵ Building off of RAND's research and data on base defense that resulted in two RAND reports in 1995, a THOR-like database for base defense would do much to enable truly informed thinking about air base threats.

Lesson Four

The JBB analysis provides a solid starting point to explore ways for US forces to better organize a base defense supporting the concepts of Air-Sea Battle (ASB) and the pivot to the Asia Pacific.⁵⁶ In a budget-constrained environment, the services will no doubt have to find more efficient and effective ways to mount a unified air base defense scheme or risk the entire ASB concept. The history of air base attack shows it to be a highly lucrative target because aircraft are fragile. A determined enemy could undermine the US power-projection capabilities required by ASB by simply supporting cells of well-trained insurgents or saboteurs in the nations from which the US plans its ASB operating bases. Therefore, the lessons from JBB as they pertain to a fully integrated joint, coalition, and host-nation base defense matter and hold great promise for tailoring an approach to the operational environments of that region.

In conclusion, USAF leaders should evaluate and inculcate the important lessons from the JBB defense model since asymmetric threats to air operations will only increase. The 1995 RAND study on air base defense said it best by predicting "that [air base] opponents might pursue three different objectives with these [future] attacks: (1) destroy high-value assets critical to USAF operations, (2) temporarily suppress sortie generation at a critical moment in a crisis or conflict, or (3) create a 'strategic event'—an incident as decisive politically as loss of a major battle is military or operationally—that could reduce U.S. public and/or leadership support for the ongoing military operation."⁵⁷

Notes

1. Air Force Policy Directive (AFPD) 31-1, *Integrated Defense*, 7 July 2007 (incorporating change 1, 22 April 2009).
2. *Ibid.*, 2.
3. AFPD 31-1, *Integrated Defense*, 28 October 2011, 2.

4. Ibid.
5. Don Branum, 332nd Air Expeditionary Wing Public Affairs, "Balad Airmen Look Back: 2008 in Review," Joint Base Balad (website), 1 January 2009, Iraq, <http://web.archive.org/web/20090103142931/http://www.balad.afcent.af.mil/news/story.asp?id=123129950>.
6. Maj Gen Craig A. Franklin (Joint Base Balad), interview by author, 22 December 2010.
7. 332nd Air Expeditionary Wing, "Lessons Learned: Integrated Defense at Joint Base Balad," July 2010, unpublished as of 6 December 2013, 1.
8. Ibid., 5–6.
9. Ibid., 5.
10. Ibid., 24.
11. Ibid.
12. Ibid., 27.
13. Ibid., 29.
14. Ibid.
15. Ibid., 31.
16. Ibid., 32.
17. Ibid.
18. Ibid., 33–34.
19. Ibid., 38.
20. Ibid., 45.
21. Ibid.
22. Ibid., 19.
23. Shannon W. Caudill, Anthony M. Packard, and Raymund M. Tembreull, "Defending the Joint Force: Lessons Learned from Joint Base Balad," *Air and Space Journal* 25, no.1 (Spring 2011): 95, http://www.airpower.maxwell.af.mil/airchronicles/apj/2011/2011-1/2011_1.pdf.
24. Ibid.
25. Ibid., 8.
26. Ibid.
27. Ibid.
28. Ibid.
29. Ibid., 8–9.
30. Ibid.
31. Ibid., 94.
32. Ibid.
33. Ibid.
34. 332nd Air Expeditionary Wing, "Lessons Learned," 17.
35. Ibid.
36. MOVER is a generic system name referring to equipment that integrates ISR with ground forces (PRIME MOVER, PAVE MOVER, etc.).
37. 332nd Air Expeditionary Wing, "Lessons Learned," 17.
38. Ibid.
39. Gary Luck, Mike Findlay, and the Joint Warfighting Center Joint Training Group, *Insights & Best Practices: JTF Level Command Relationships & Joint Force Organization*, Focus Paper 4 (Norfolk, VA: Joint Warfighting Center, United States Joint

Forces Command, November 2007), 7, https://dde.carlisle.army.mil/documents/courses_10/readings/2208_focus.pdf.

40. Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND, 1995), 16.

41. Col Anthony M. Packard (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element), interview by author, 10 January 2011.

42. Roger P. Fox, *Air Base Defense in the Republic of Vietnam: 1961–1973* (Washington, DC: Office of the Air Force History, 1979), Appendix.

43. Maj William Urban (332nd Expeditionary Security Forces Group, Joint Intelligence Support Element), 10 February 2011—database of attack events.

44. Vick, *Snakes in the Eagle's Nest*, 90.

45. Ibid.

46. Barry D. Crane, *Deterrence Effects of Operation Frontier Shield*, IDA Paper P-3460 (Alexandria, VA: Institute for Defense Analyses, 1999).

47. R. Anthony, "A Calibrated Model of the Psychology of Deterrence," *UNODC Bulletin on Narcotics* 56, nos. 1–2 (2004): 49, https://www.unodc.org/pdf/bulletin/bulletin_2004_01_01_1_Art2.pdf.

48. Only a median is advisable as a stable indicator. Similar averages were very unpredictable with increasingly large fluctuations from –20 percent to as much as 130 percent. These fluctuations were not related to event changes.

49. The validity of a sample average when the exponent increase is near -1 to a true average does not meet the convergence test for sums and higher statistical moments of the Central Limit Theorem. In the current analyses, medians converge and are used as stable indicators.

50. Barry D. Crane, A. Rex Rivolo, and Gary C. Comfort, *An Empirical Examination of Counterdrug Interdiction Program Effectiveness*, IDA Paper P-3219 (Alexandria, VA: Institute for Defense Analyses, January 1997), II-6–II-9, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA320737>. The Pareto-Levy tails of power law distributions are depicted in figure II-4.

51. If the power law is -2, then standard deviations and variances also do not converge and standard regression theory fails.

52. Caudill et al., "Defending the Joint Force," 98.

53. Paul J. Kasuda, *United States Air Force Counterinsurgency Operations Capabilities, the Ground Dimension: Are We on the Right Glide Slope?* (Maxwell AFB, AL: Air War College, 16 February 2011), 19.

54. 332nd Air Expeditionary Wing, "Lessons Learned," 17.

55. Sarah Loicano, "Historic Airpower Database Now Online," Air University Public Affairs Office, 9 August 2013, <http://www.af.mil/News/ArticleDisplay/tabid/223/Article/466817/historic-airpower-database-now-online.aspx>.

56. Air-Sea Battle Office, Department of Defense, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Washington, DC: DOD, May 2013), <http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf>.

PART 3

There Is No “Rear Area” Changes to Air Base Defense in a Counterinsurgency Environment

Chapter 6

The Air Force's New Ground War Ensuring Projection of Air and Space Power through Expeditionary Security Operations

Robert H. "Bob" Holmes

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If you joined the Air Force not long ago and became a security forces person, you would have spent a lot of your time guarding missile silos, guarding bombers, alert fighters, guarding gates, or at least being at a gate. But after we stood up 50 expeditionary bases in the Arabian Gulf and after we've had attacks on the bases, after we have had rockets and mortar attacks on the bases, after we've had aircraft hit on arrival and departure with surface-to-air missiles and small-arms fire, and after we've looked at what does it take to secure an airfield in an expeditionary sense, this security force business takes on a whole different light. . . . Get outside the wire with the Office of Special Investigations folks . . . and begin to think about what's a threat to this airfield. What do we have to do to defend it so we can operate 24 hours a day, seven days a week, in a true joint sense, and in a true combatant sense, so that there are no threats to this airfield that we haven't thought about?

—Gen T. Michael Moseley
Chief of Staff of the Air Force
11 October 2005

Originally published by *Air and Space Power Journal* in the fall of 2006, this article is reprinted in its entirety because it proved to be a seminal work that outlined the base defense challenges faced by Airmen in Iraq and Afghanistan. It also proved to be an important piece that shaped policy and set the table for the Air Force's base defense and counterinsurgency responsibilities as the Base Operating Support Integrator at Joint Base Balad, Iraq, beginning in November 2008.

The global strategic-security environment has changed dramatically in the last 15 years, and the Cold War comfort zone of heavy forces arrayed across the plains of Europe has given way to a dynamic new threat environment filled with irregular adversaries fighting an asymmetric style of warfare. In his book *The Pentagon's New Map*, Dr. Thomas Barnett predicts that the “non-integrating gap countries” of the world—those states with the highest rates of poverty and unemployment, most corrupt governments, lowest standard of living, and least hope—will be rife with conflict and uncertainty.¹ In this evolving environment, the Air Force remains committed to projecting air and space power as a lighter, leaner, and more agile expeditionary war-fighting force. Projecting air and space power in this new expeditionary environment means that we must position air bases close to (if not in) the fight, in austere locations far from the “safe” rear areas of the past.²

We have placed air bases throughout the combat zone in Iraq and Afghanistan (considered gap countries by Dr. Barnett) during Operations Iraqi Freedom and Enduring Freedom. Surrounded by irregular enemy forces, these bases have sustained steady attacks. Ensuring airpower projection in this context requires a new look at how we establish, protect, and defend air bases—specifically, it demands new doctrine, tactical command and control (C2), intelligence capabilities, and more proficient expeditionary Airmen of all specialties. This represents not only a challenge to security forces alone but also one to the Air Force team to “fight the air base” much like the Navy fights as a combat team in a carrier battle group.

Asymmetric Threat

The combination of irregular threats, networked enemies, and the expeditionary nature of the Air Force's operations dramatically increases the likelihood of attacks on its people and resources. Additionally, transforming the service to one that uses fewer, more capable weapon systems has increased each weapon's criticality and amplified the impact of enemy attacks on our ability to sustain the projection of air and space power.³ Air Force bases have become harder targets for penetrating or direct attacks, and although gigantic vehicle-borne explosive attacks such as the one on Khobar Towers are still a viable threat, the enemy in Iraq and Afghanistan has relied upon mortars, rockets, and shoulder-launched surface-to-air missiles (SAM) to at-

tack expeditionary air bases. This situation resembles what happened in the Vietnam War, when the Air Force suffered 447 standoff attacks, resulting in 75 aircraft destroyed, 155 troops killed, and 1,702 wounded in action.⁴

In 1965 the Air Force conducted a detailed security survey of all bases in Southeast Asia that contained the service's resources. In addition to pointing out that the Air Force's security police lacked adequate organization, training, or equipment to provide security defense in an insurgent environment, the survey revealed that ground forces in South Vietnam would not conduct static defense of air bases. The study concluded that we had no satisfactory system for coping with attacks from standoff weapons, recommending that the Air Force continue seeking an early solution to this problem and emphasize testing the feasibility of new terminal-defense proposals.⁵ Standoff attacks against air bases since the beginning of Iraqi Freedom already exceed 1,500; although neither the operational impact nor human toll has proven severe, new weapons technology and improved enemy tactics and training promise to increase their effect. Undoubtedly, because of the enemy's willingness, determination, and adaptivity, his aim will improve.

The proliferation of precision-guided mortars and rockets gives enemy forces the potential of 10-meter accuracy when attacking air bases.⁶ Such accuracy would have devastating effects on large aircraft and unsheltered small aircraft, not to mention increased casualties caused by strikes on living and working areas. Coupled with the "media" effect, this scenario will severely degrade the effectiveness of air and space power. Readily available commercial-satellite imagery and simple reconnaissance by sympathetic workers employed on the air base magnify the enemy's capabilities even more. Successful standoff attacks could also result in reluctance to base expeditionary airpower close to the fight, thus reducing the responsiveness and effectiveness of the air component and risking an unintended shift back toward a conventional supporting role for the Air Force.

Seizing the Initiative

In part, Air Force security forces have not adjusted to combat the standoff threat because during the Cold War, the standoff-attack footprint became an Army mission—codified in 1985 in Joint Secu-

rity Agreement 8, which specified that the Army would provide exterior defense for Air Force bases.⁷ Although this agreement gave the Army the “outside the wire” mission, several joint exercises as well as experience in Operations Desert Shield and Desert Storm proved this tasking impractical; consequently, in 1992 joint doctrine formally transferred this responsibility to base commanders. The formal abrogation of Joint Security Agreement 8 in 2005 meant that in future conflicts, the Air Force would have to defend its air bases in accordance with joint doctrine.⁸

Perimeter fences, barricades, and high-tech sensor systems are critical components of base security, but regardless of their effectiveness, they all detect the enemy only after he has begun an attack, or they help respond after he has already attacked a base. A base’s defense forces, however, must seize the initiative from the enemy by getting inside his planning cycle and launching a preemptive attack. Operation Desert Safeside / Task Force 1041 at Balad Air Base, Iraq, demonstrated the effectiveness of this approach. In response to over 400 standoff attacks against Balad, US Central Command Air Forces (USCENTAF) launched this 60-day operation, with Task Force 1041 capturing 17 high-value targets, over 100 other insurgents, and eight major weapons caches, sustaining no casualties despite heavy enemy engagement. Afterward, enemy attacks from the task force’s sector virtually ceased. The architects of Desert Safeside knew that “there is only one way to stop a determined enemy from attacking a base; you have to kill or capture him and take his weapons. This was true at Balad, and it will be true at other bases; and the brave men and women of TF 1041 proved it!”⁹

Task Force 1041 demonstrated that the Air Force possessed the capabilities needed to successfully dominate the base security zone (BSZ) and provide a secure operating environment from which to launch, recover, and sustain airpower. This operation also dispelled the perception that Army units are better organized, trained, and equipped than Air Force security forces to conduct such operations. Unlike previous Army units, the task force achieved the desired effect.

The Base Security Zone

Whereas legacy base-defense doctrine was designed for Cold War-era linear battlefields, emerging joint doctrine treats expedi-

tionary bases more like joint operating areas (fig. 6.1). The final draft of Joint Publication 3-10, *Joint Security Operations in Theater*, adapts the best practices of defending bases to the nonlinear battlefields of today. The core of this doctrine seeks to ensure that the designated base commander can dominate the area around the base from which the enemy can launch standoff and penetrating attacks. Importantly, the new publication establishes a BSZ as a joint operating area around critical fixed installations (such as air bases) and describes terrain that the base commander should influence as the battlespace from which the enemy can attack the base. The fact that this terrain includes the area traditionally known as the man-portable air defense system (MANPADS) footprint (the area the enemy could use to attack aircraft approaching/departing the base with shoulder-launched SAMs) is of critical importance to the Air Force. This requirement of influencing terrain outside the fence created a new battlefield-control measure called the “base boundary” (fig. 6.2), defined in the joint publication as a line that delineates the surface area of a base for the purpose of facilitating coordination and deconfliction of operations between adjacent units, formations, or areas: “The base boundary is not necessarily the base perimeter; rather it should be established based upon the factors of METT-T [mission, enemy, terrain and weather, troops and other support available, time available], specifically balancing the need of the base defense forces to control key terrain with their ability to accomplish the mission.”¹⁰

Because the terrain included in the base boundary is subject to constraints of the land component or host nation, the Air Force will use the BSZ to internally address the total area outside the base perimeter that might threaten the base with standoff attacks. The optimal joint situation would have the BSZ and base boundary encompassing the same terrain.

Analysis of the base’s mission as well as the enemy, terrain, time, troops available, and civilian considerations will determine the BSZ, which surrounds the base. Historical knowledge of the enemy’s use of standoff weapons like rockets and mortars in Vietnam, together with recent experience in Iraq and Afghanistan, shows that the BSZ must extend a minimum of five kilometers from base resources (e.g., aircraft operating surfaces, maintenance facilities, and billeting locations).

Dedicated base-defense forces integrated under one commander should conduct security operations within the zone. Normal BSZ operations in the future will resemble offensive-style efforts such as

Desert Safeside. The base's area of interest, where the enemy can do planning and preparation for an attack against a given base, reaches beyond the BSZ to anticipate and counter enemy threats (fig. 6.3). Base-defense forces are not responsible for operations in the area of interest, but they can shape the environment by coordination with joint/coalition forces and/or the host nation.

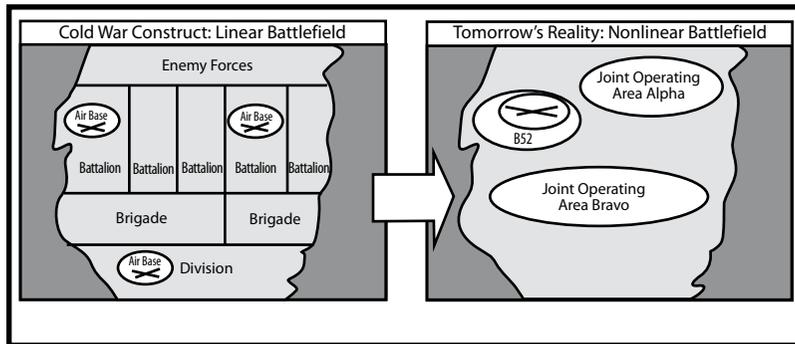


Figure 6.1. Emerging joint nonlinear battlefield. (Adapted from Briefing, Command and Control General Officer Steering Group, subject: Headquarters USAF/XOS-F Integrated Base Defense Command and Control, 3 November 2004.)

The next challenge for Air Force doctrine entails determining which component commands the air base. In Iraqi Freedom and Enduring Freedom, we assigned base command to the component with the preponderance of forces. Although doing so may appear appropriate on the surface, air bases have unique requirements—for example, countering the threat of shoulder-fired SAMs. If the Army commands an air base simply because it has a large logistics operation (and thus a large number of troops) on base, the commander may or may not place a high priority on the critical issue of defeating the MANPADS threat. The component with the most stringent security requirements should serve as base commander.

Tactical Command and Control

Prosecuting ground-combat operations in the BSZ will require a robust tactical C2 infrastructure run by the base defense operations center (BDOC) (fig. 6.4). The C2 architecture for air bases in the fu-

ture will make the BDOC coequal with the emergency operations center (which will focus on recovery after an attack) but subordinate to the base commander's installation control center. Still commanded by the defense-force commander, the BDOC will act as a command, control, communications, computer and intelligence, surveillance, and reconnaissance (C4ISR) center to integrate the application of offensive and defensive actions in the force-protection battlespace—including the BSZ. By integrating and coordinating all defense efforts, the future BDOC will enable the commander to see first, understand first, and act first by finding, fixing, tracking, targeting, engaging, and assessing threats to the base. The security forces' legacy BDOC does not currently possess the robust tactical C4ISR capability it needs to integrate the necessary intelligence and desired effects within the BSZ.¹¹

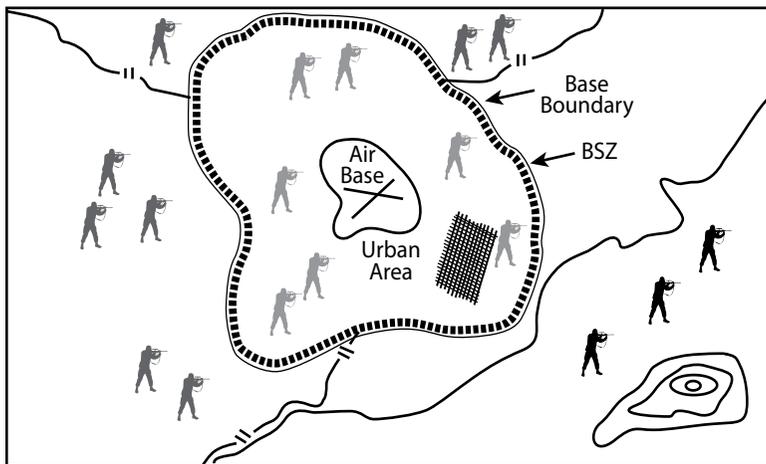


Figure 6.2. Notional base boundary. (Adapted from Air Force Tactics, Techniques, and Procedures 3-10.2, *Integrated Base Defense Command and Control*, 1 March 2008, 7.)

The base-defense effort for a joint forward-operating location on a nonlinear battlefield bears striking similarities to the operational C2 issues faced by the air component commander at the operational level of war. Both missions require centralized control and decentralized execution of forces, as well as capabilities brought together from several components. A BDOC and an air and space operations center (AOC) own some of these forces/capabilities but must also integrate forces and fires from other components and coalition partners.

Additionally, both missions require predictive analysis to conduct direct-action combat missions that counter expected enemy courses of action and position forces to react swiftly to enemy forces not deterred or defeated by the proactive effort. As we transform the expeditionary BDOC, we can benchmark some lessons from the AOC's battle-proven processes and methods.

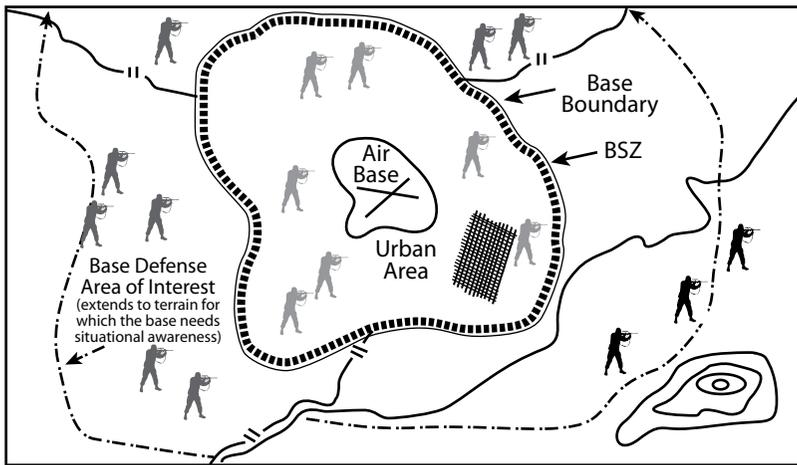


Figure 6.3. Notional area of interest and base boundary. (Adapted from Air Force Tactics, Techniques, and Procedures 3-10.2, *Integrated Base Defense Command and Control*, 1 March 2008, 8.)

Within the transformed BDOC organization, an intelligence-fusion cell will provide the base-defense force with analyzed, vetted all-source information that drives effective force-protection decisions and operations. Inherently multidisciplinary, the cell need not possess all capabilities locally since theater and strategic reachback provide many of them. Designed to equip the defense-force commander with a capability to arrive at courses of action based on continuous intelligence preparation/analysis of the battlespace, the intelligence-fusion cell must have situational awareness of events throughout the base's area of interest (that area where tactical intelligence must be immediately available to the base-defense force so it can effectively counter enemy courses of action).¹²

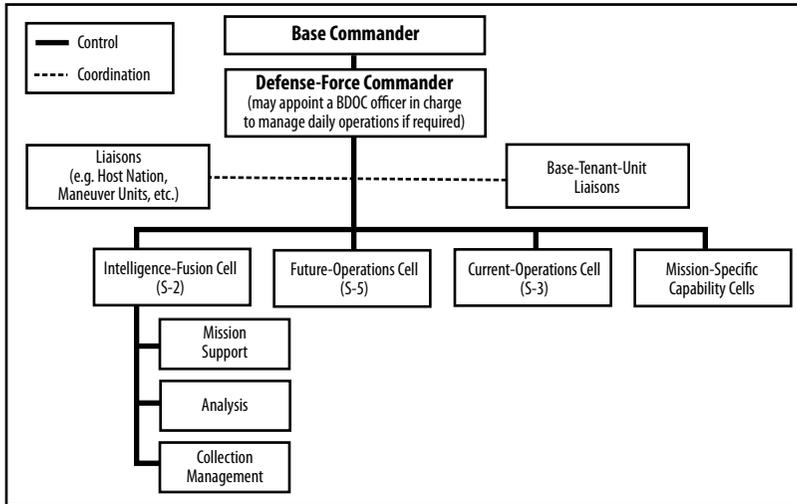


Figure 6.4. Typical BDOC organization. (Adapted from Air Force Tactics, Techniques, and Procedures 310.2, *Integrated Base Defense Command and Control*, 1 March 2008, 13.)

This all-source threat information enables the BDOC's future-operations cell to perform a function similar to that of an AOC's strategy and combat plans divisions—but for tactical-level base defense. Using the intelligence-fusion cell's analysis, the future-operations cell devises a strategy to counter enemy activities proactively for the next 24 hours and beyond. This strategy becomes a BSZ ground tasking order (GTO)—a fires-and-effects integration matrix for the BSZ—that postures and deconflicts forces to provide an executable playbook for operations. The GTO must integrate, deconflict, and document all planned activities of friendly forces within the BSZ, including those planned by other functional components or host-nation forces. When constructing a BSZ's GTO, the BDOC will coordinate with the special operations and land-component forces operating in the areas adjacent to the zone to minimize risks to all forces. The BSZ's GTO must also consider the effects required to support the AOC's air tasking order. Although a playbook, the GTO must remain flexible and easily modified during execution in response to urgent circumstances or developing situations. Additionally, the future-operations cell identifies expected shortfalls in defense-force capability

and recommends appropriate requests for forces or capabilities for the base commander to forward through the chain of command.

A current-operations cell functions on behalf of the defense-force commander to monitor GTO execution and exercise C2 of all forces within the BSZ (the traditional S-3 role of Air Force base-defense and Army units). This cell also maintains current situational awareness of joint/coalition operations outside the base boundary but within the BSZ. Furthermore, it monitors the status of base-defense forces operating outside the base boundary under the tactical control of adjacent-area commanders for base-defense tasks.

A fire-support coordination cell, another critical current-operations cell capability, plans and integrates indirect joint-fire missions such as close air support or artillery in the BSZ. Although this cell integrates these fires, it does not control them; instead, it facilitates them within established joint procedures. Successful air-base defense in the dynamic threat environment of an expeditionary air base in one of Dr. Barnett's "non-integrating gap" countries requires robust C4ISR. Fielding a transformed BDOC will prove critical in this effort.

Force Protection Intelligence

Desert Safeside and other Iraqi Freedom/Enduring Freedom experiences showed that seizing the initiative in a hostile BSZ requires aggressive ground-combat operations. A new mission area called force protection intelligence (FPI), a key enabler for the active defense forces, began as a force protection initiative by USCENTAF to support base defense. The Headquarters Air Force FPI Working Group—run jointly by Headquarters Air Force Intelligence, the Air Force Office of Special Investigations (AFOSI), and Headquarters Air Force Security Forces—merged existing definitions of intelligence and force protection to define FPI as analyzed or vetted all-source information that drives effective force protection decisions and operations. It simply means that the Air Force needs to apply the full spectrum of intelligence capabilities to commanders who must make effective decisions in the force protection mission area.¹³

Continuous application of the entire intelligence cycle is critical to anticipating enemy tactics and/or developing target intelligence packages to neutralize threats. Base-defense operations require the prioritization, collection, analysis, fusion, and tailoring of threat information into products and services for dissemination in support of

current and future security operations. This capability demands advanced training in analytical skills and revised tactics, techniques, and procedures that incorporate AFOSI and intelligence methods and sources. FPI personnel must receive analytical training when initially placed in an FPI position, periodically refresh their skills in a cross-functional environment, and evaluate them prior to deployment. This assessment capability must allow rapid and thorough analysis of all-source information at the lowest possible level yet still provide reachback capabilities to theater and national sources. Intelligence and AFOSI assessment capabilities must be scalable to the defense situation and able to provide dedicated, full-time support to integrated base defense missions if necessary.¹⁴ The assessment capability requires new organizational structures, additional communications equipment, and either additional personnel or inventive manpower solutions to fully integrate intelligence and AFOSI with security forces in BSZ operations.

Fighting the Air Base

Just as all Sailors have a battle station to which they report at designated times of elevated threat, so should Airmen have such a station and participate in base defense. Accordingly, a draft Air Force instruction has codified a fight-the-air-base concept, outlining a process by which Airmen gradually step up their participation in base-defense activities as threats increase.¹⁵ Each escalating phase of manning battle stations—coded green, yellow, orange, and red—has associated conditions of readiness attached (fig. 6.5). Assigning all Airmen to a battle station, training them in the appropriate duties, and exercising the plan repeatedly will dramatically expand the collective power of the base-defense force.

Increasing the capability for base defense requires including ground-combat tasks in the basic skill sets of all Airmen.¹⁶ For example, although Airmen currently receive instruction in firing a weapon, they do not learn how and when to employ that weapon; neither do they learn combat skills common in the other armed forces. Identifying the requirement for these skills in Iraqi Freedom/Enduring Freedom, USCENTAF established the basis for expeditionary combat training for all Airmen with a theaterwide program called Combat Right Start. Developed as a short-term solution to the need for ground-combat skills, the program became a requirement (19 hours

of training) for all Airmen in the USCENTAF theater before they deploy to a designated combat zone like Iraq. Although an Air Force Expeditionary Airmen integrated process team is building a road map to fulfill these requirements over the long term, Airmen must sustain these combat skills by undergoing periodic ancillary training, and the fight-the-base concept outlined above must become part of an installation's defense plans. Lastly, the force must regularly rehearse going to battle stations in order to assure proficiency when called into action.

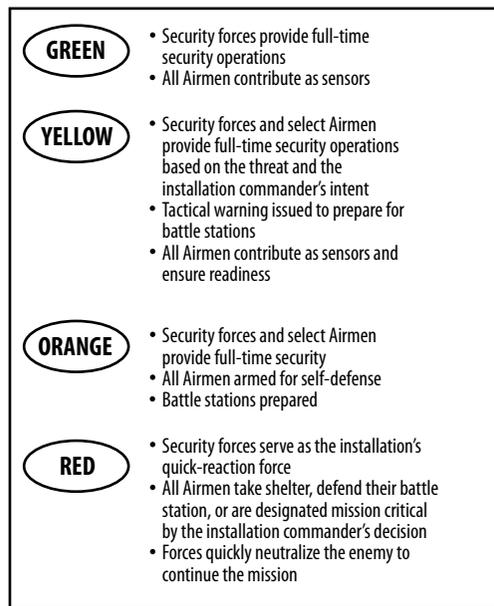


Figure 6.5. Proposed Air Force battle stations. (Adapted from Air Force Instruction 10-246, "Installation Arming and Response," draft [four-digit coordination package], 17 January 2006, 2.)

Posturing the Force

Along with better doctrine, robust C4ISR, FPI, and ground-combat training for all Airmen, security operations in the BSZ will require more effective use of security forces' capabilities than do traditional flight line or perimeter-security missions. Whereas a notional expeditionary base in the current Iraqi Freedom threat environment

might call for 200–300 security forces to protect its flight line and perimeter, that same base during execution of robust BSZ operations will need closer to 1,200 such forces. In order to support this new responsibility, the Air Force's security forces are undergoing a complete transformation designed to shift tactical doctrine as well as tactics, techniques, and procedures from a Cold War focus on an industrial-security model to an expeditionary war-fighting focus on offensive and defensive operations in the BSZ. Rather than follow the historical practice of training, equipping, and manning like a police force with some combat skills, the transformed security forces will train and organize as a competent war-fighting capability instead of an installation police force.

The Cold War force structure of our current security forces (designed to support home-station operations) has incrementally adapted to demands of the expeditionary Air Force, but most tasks and manpower structure remain focused on running the home station. This orientation has caused problems for commanders of security forces squadrons as they struggle to balance day-to-day law enforcement and security operations of a home-station Air Force base with the critical task of preparing troops for combat deployments. That is, if local requirements take precedence, security forces might either ignore combat training or perform it haphazardly—perhaps on scarce off-duty time. Conceivably, troops could go to war only partially prepared or prepared at the expense of other important events.

To ensure the best readiness for both home-base and expeditionary missions, the Air Force is in the process of redefining the mission of security forces so that it emphasizes two basic areas: security operations and air-provost (policing) services. The emerging model will require a mixture of military and civilian personnel, the former conducting war-fighting operations such as defending expeditionary air bases; protecting steady-state, high-threat locations; or securing nuclear weapons, and the latter performing most of the provost and industrial-security duties such as law-enforcement missions at locations in the continental United States. This construct will allow security forces to follow a basic train, deploy, and reconstitute cycle that will guarantee enough properly prepared personnel for war-fighting operations. During the reconstitution phase of the cycle, military security forces will integrate into the mostly civilian air-provost mission, not only ensuring that home-station bases have enough manpower to secure their resources but also keeping enough law-

enforcement experience in the military force to conduct minimal law-and-order duties at deployed locations. A commander of such a transformed security forces squadron will have both the resources and time to prepare for and conduct expeditionary and home-station missions.

Emerging Requirements

A recent exercise called Headquarters Air Force Air Base Opening Tabletop exposed a seam between conducting hostile joint air base-seizure operations and opening the base for operations.¹⁷ The base-seizure mission requires a rapid transition from combat forces seizing an air base to personnel readying a fully operational joint air base from which to project combat and mobility airpower. This mission lies beyond the organic capabilities of contingency response groups (CRG) but could take the form of a complementary Air Force capability by integrating CRG capabilities into those of the 720th Special Tactics Group and the 820th Security Forces Group, presenting them to the joint force commander as a scalable, tailorable force module known as an air expeditionary combat task unit (AECTU).¹⁸ These forces would arrive with the seizure force during the assault phase of the joint forcible-entry operation. Special tactics and security forces, inserted into the assault element, would fight alongside joint forces to eliminate resistance and then provide security and initial base defense as the remaining AECTU forces arrive to establish air operations.

After the forcible entry operation transitions to the stabilization phase of the lodgment, the AECTU becomes primarily responsible for air base defense operations while the seizure force reconsolidates and moves on to its next objective. When the initial element of the CRG deems the air base open for air operations, follow-on Air Force and joint capabilities will flow into the air base. Assessment of the security environment by the AECTU commander constitutes a significant portion of this opening. The AECTU will remain in place to hand over air base defense operations to security forces of the air and space expeditionary force. This transition might take between 30 and 60 days, but the goal remains reposturing the AECTU for the next operation as soon as practical. Embedding the AECTU with the assault force creates an environment of joint interoperability between the two components; it also allows a quicker transition to operations

while ensuring that the seizure force can rapidly advance to follow-on objectives without waiting to link up with a separate follow-on force. Establishing the tasks, conditions, and standards for the AECTU in the mission statements of the CRGs, 720th Special Tactics Group, and 820th Security Forces Group would go far in closing this joint seam.

Opportunities

As the Air Force continues to retool its capabilities to fight effectively on the battlefields of The Pentagon's New Map, the expeditionary air base is becoming more than just an airpower-projection platform.¹⁹ With the added ground-combat mission in the BSZ, newly focused FPI, and a more capable force of expeditionary Airmen trained in ground combat, the future air base may become more of a platform for air and ground combat. Not only would air assets strike joint force targets across the theater but also base-defense forces could strike theater targets in their respective BSZs—just as Task Force 1041 did in Iraq. Multiplying this capability across a geographic combatant command covers a significant part of the air and ground battlespace with coordinated air and ground forces.

One can easily imagine projecting that influence even farther into the combat zone by pushing logistics, civil engineering, communications, and other capabilities out from the air base to other joint forces in the area of responsibility. This proposal—not a roles-and-missions argument and not one that would require large, new forces—would simply harness and focus the potential combat power of currently deployed base defense as well as “support” personnel and project that power outward. Establishing the future air base as a power-projection platform would give the joint force commander another formidable tool for the joint fight.

The Way Ahead

The shift from garrison security and law enforcement to security operations has already begun. In order to ensure that these changes are in step with the Air Force's vision and goals, we must pursue a systematic program to shepherd such alterations. This effort began with the Air Force Requirements and Operational Capability Council

tasking Headquarters Air Force Security Forces to draft a recommendation that addressed capability gaps in integrated defense. This process will culminate with approval of a program action directive to enact these changes through the service's corporate structure.

These changes will need support and understanding at all levels of Air Force leadership as we continue to realize the desired capabilities of our expeditionary Air Force in the future battlespace. Many of the changes will prove difficult; however, they are vital to success in the long war against terror. Land-component maneuver forces will be stretched thin for the foreseeable future, so the Air Force must invest in its capabilities to securely project combat air and—now—ground power. Because the uncertainty and asymmetry of noncontiguous, nonlinear battles will create dangerous locations for air bases, expeditionary Airmen must ready themselves for the fight.

Notes

1. Thomas P. M. Barnett, *The Pentagon's New Map: War and Peace in the Twenty-First Century* (New York: G. P. Putnam's Sons, 2004), 156.
2. Briefing, Rebecca Grant, to Brig Gen Robert H. Holmes et al., subject: Securing Airpower Projection in Noncontiguous and Nonlinear Battlespace Operations, April 2006.
3. David A. Shlapak and Alan Vick, "*Check Six Begins on the Ground*": *Responding to the Evolving Ground Threat to U.S. Air Force Bases* (Santa Monica, CA: RAND, 1995), 13.
4. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961–1973* (Washington, DC: Office of Air Force History, 1979), 207.
5. Lt Gen William W. Momyer, *Operation Safe Side Final Report*, Seventh Air Force, 1 October 1967.
6. Shlapak and Vick, "*Check Six Begins*," 50.
7. Richard G. Davis, *The 31 Initiatives: A Study in Air Force–Army Cooperation* (Washington, DC: Office of Air Force History, 1987), 125.
8. "Validating the Abrogation of Joint Service Agreement 8," AF/XOS-F staff package, 18 November 2004.
9. Col Bradley Spacy, director of force protection, USCENTAF (Task Force 1041 presentation, Headquarters USAF Threat Working Group, 28 April 2005).
10. Joint Publication (JP) 3-10, *Joint Security Operations in Theater*, 3 February 2010, xii.
11. Briefing, Headquarters USAF/XOS-F, Command and Control General Officer Steering Group, subject: Integrated Base Defense Command and Control, 3 November 2004.
12. Air Force Tactics, Techniques, and Procedures 3-10.2, *Integrated Base Defense Command and Control*, 1 March 2008, 13.

13. Lt Col John Busch, AF/A7SO, *Institutionalizing Force Protection Intelligence*, white paper (Washington, DC: Headquarters USAF/A7S), n.d.
14. Integrated base defense involves providing a secure operating environment for base commanders to generate and sustain combat power for joint war-fighting operations. Headquarters USAF/A7S, *DOTMLPF Change Recommendation for Integrated Defense* (Washington, DC: Headquarters USAF/A7S), 14 April 2006.
15. Air Force Instruction 10-246, *Installation Arming and Response*, draft [four-digit coordination package], 17 January 2006.
16. US Air Force, *Long-Term Integration of Expeditionary Airmen Concepts into the Air Force* (Washington, DC: Headquarters USAF/XO, July 2005), 10.
17. Minutes, USAF General Officer Air Base Opening Tabletop Exercise, Headquarters Air Force Security Forces, 6 April 2006.
18. CRGs provide “a unique subset of capabilities designed specifically to respond rapidly to contingencies as well as secure and protect airfields, rapidly assess and open air bases, and perform initial airfield/air base operations to ensure a smooth transition to subsequent operations.” See Alexander M. Wathen, “Contingency Response Group: Time to Expand the Box and Think ‘Coalition,’” *Air and Space Power Journal* 19, no. 2 (Summer 2005): 70.
19. Grant, briefing.

Chapter 7

Sharpening the Eagle's Talons

Assessing Advances in Air Base Defense Doctrine

David P. Briar

Writing about Allied convoys sailing the cold, windswept seas of the central Atlantic during World War II, Williamson Murray and Allan Millett note that “the crews’ biggest worry was the large gap . . . where Allied air cover could not reach.”¹ The German navy quickly exploited that gap, sinking many a vessel there. Although the Allies could have shrunk or eliminated the gap by using long-range aircraft such as the Consolidated B-24 Liberator, they decided against using these bombers in an antisubmarine role, thus giving the Germans a fleeting chance to “crush the Allied convoy system.”² That decision cost many lives and much treasure.

Just as the Allies left the door open for Adm Karl Dönitz’s U-boats, so too the US Air Force (USAF) had formerly left a gap outside of its air bases that its defense forces largely could not reach. In 1985 Air Force–Army Joint Security Agreement (JSA) 8 formally gave the Army responsibility for exterior defense of USAF bases. This agreement not only limited the operational concept and vision of Airmen regarding exterior base defense but also confined Airmen to interior security roles.³ In 1998 Gen John P. Jumper, then commander, United States Air Forces in Europe, and later USAF chief of staff, recognized the gap in doctrine, particularly regarding force protection, and challenged the USAF to think differently about exterior security capabilities:

In developing this expeditionary force culture, force protection is a key issue. The traditional mindset that has developed over the years is an inside-the-fence mentality about force protection. This inside-the-fence mentality said it was the Air Force’s business to watch inside the fence—it was up to us to coordinate with or depend on others for whatever was to happen outside the

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fence. We had joint agreements that said the Army would watch us outside the wire, and that they would help train our people to have the capability inside the wire. But these agreements, as it turns out, were only valid during times of declared war. It has become apparent that we are going to have to take on some of this capability ourselves.⁴

In December 2001, the USAF published Air Force Policy Directive (AFPD) 31-3, *Air Base Defense*. Although the service had taken great pains to develop the doctrine, promulgated in AFPD 31-3, it considered the security forces capable of controlling only those areas out to the maximum effective range of the heaviest weapons system available to the defense force commander. This was a flawed assumption because it focused solely on USAF capabilities, instead of considering the utilization and integration of host nation and joint forces in the area of operation. Interestingly, the notion of an integrated approach to ABD in the Republic of Korea, which includes South Korean active duty and reserve forces arrayed to provide significant depth in defense, has been a mainstay of ABD doctrine and practice in the Republic of Korea and United States Combined Forces Command for many years.

In 2004, shortly after the Iraq War began, USAF and Army leaders terminated JSA 8 due to the lack of availability of ground forces to defend air bases. Shortly thereafter, Lt Gen Walter E. Buchanan, III, US Central Command's Coalition Forces Air Component Commander, "lobbied for and received permission to organize, train and equip the USAF's first ever offensive ground combat Task Force," designed to conduct a 120-day test of USAF capabilities in reducing standoff attacks against Logistics Support Area Anaconda, the Army's logistics base located near Balad, Iraq, and location of the USAF's busiest airfield.⁵ Known as Task Force (TF) 1041, the unit "reduced the number of northern sector stand-off attacks against Balad to 'nearly zero'" during its 120 days of operation, secured eight major weapons caches, and captured 98 suspected insurgents, two of whom were on the Army's high-value target list.⁶

In 2006 Gen T. Michael Moseley, then USAF chief of staff, wrote that Airmen need to "go outside the wire" and get their arms around the threats to our airfields and facilities . . . [and] our Security Forces must be proficient in Security Operations, providing active and defensive measures to protect, defend, and 'fight' our air bases."⁷ The demands of ABD in Iraq and Afghanistan, the success of TF 1041, and the support of General Moseley led USAF leaders to reevaluate

their security guidance to create a more adaptable and capable ABD construct.

In 2007 the USAF announced a new strategy for defending air bases called integrated defense (ID), which called for the “application of active and passive defense measures, employed across the legally-defined ground dimension of the operational environment, to mitigate potential risks and defeat adversary threats to Air Force operations.”⁸ The ID strategy called for improved ground intelligence collection in the operational environment and improved synchronization of friendly forces to protect air bases. It fundamentally shifted security operations from a Cold War compliance-based model to a capabilities-based construct, designed to be more adaptable to a contingency environment. Importantly, it stated that ABD was a “fundamental battle competency for all Airmen, whether garrison or deployed,” a topic that will be explored later.⁹

The USAF set out to rapidly implement ID in the field. In 2008 the USAF assumed the role as the base operating support integrator (BOS-I) for Joint Base Balad (JBB) (formerly known as Logistics Support Area Anaconda and Balad Air Base), requiring it to defend both the interior and exterior of the base to secure the estimated 26,000 coalition and contract personnel.¹⁰ The USAF stood up the 332nd Expeditionary Security Forces Group, which included the largest deployment of Airmen to secure an air base since the Vietnam War. Airmen integrated their ABD approach with the ground commander’s counterinsurgency campaign plan with great effectiveness. The result was impressive:

In Vietnam, Vietcong and North Vietnamese forces attacked American air bases 475 times between 1964 and 1973, primarily with IDF, destroying 99 US and South Vietnamese aircraft and damaging 1,170 aircraft. By contrast, insurgents have fired more than 340 mortars and rockets against JBB since the Air Force took defense responsibility as BOS-I. These attacks resulted in no aircraft losses and only a few aircraft damaged; furthermore, just 50 percent of the rounds fired actually landed on the base. The adversary’s IDF effectiveness against JBB, as measured by the latter criterion, was the lowest among the four most commonly attacked bases in Iraq.¹¹

In 2009 the USAF released more detailed guidance on ID, including tenants and procedures to operationalize its new concept. Specifically, this guidance lists nine “desired effects” ID is designed to achieve: anticipate, deter, detect, assess, warn, defeat, delay, defend, and recover. Arguably, with the ID concept in hand, Airmen have

been able to expand their vision and operational application of ABD doctrine, significantly improve effectiveness, and turn a page on outdated security and ABD procedures. However, there is still a pressing need for USAF leaders at all levels to examine emerging threats and, consistent with an active risk mitigation strategy, continue working to close gaps and seams in protection of USAF and joint operations. Continuous improvement and defense gap analysis are necessary to keep pace with or, better yet, stay ahead of the capabilities of current and potential enemy forces. Additionally, USAF guidance on ABD cannot be viewed in a vacuum because of the increasingly joint and combined nature of operational bases. Therefore, an examination of joint guidance on force protection, ABD, and combat support is required to fully understand the demands of modern security practices.

To that end, this chapter examines the postulated threat to air bases, especially those outside the continental United States (CONUS), and the adequacy of the service's force protection (FP) and ABD doctrine in order to determine what the USAF needs to do, if anything, to resolve any remaining problems it faces. To make such a review viable, I make certain assumptions. First, I consider only a narrow range of potential threats against air bases—specifically, attacks from surface-bound adversaries using mortars, bombs, rockets or rocket-propelled grenades (RPG), surface-to-air missiles (SAM), or long-range rifles. For the purpose of this study, I do not consider operational-level threats such as theater ballistic missiles or nuclear weapons. Second, I consider threats according to the manner in which they would attack an installation as opposed to the size of the adversary or the force dispatched to deal with the threat. Third, because I deal with existing doctrine and the operational practice of FP and ID, many topics, such as physical security, sensors, and technology, remain outside the scope of this chapter. Finally, I leave the reader with some open-ended questions, such as how we should go about finding the resources necessary for improvement in an increasingly difficult fiscal environment.

The Threat to Air Bases

On 1 November 1964, the Viet Cong (VC) attacked Bien Hoa Air Base, South Vietnam, with 81 mm mortars, killing four people, de-

stroying 20 aircraft, and marking the beginning of a campaign by the VC and North Vietnamese Army (NVA) that would include over 400 additional attacks, claim many more lives, and destroy valuable resources.¹² The attack on Bien Hoa sent a message that air bases are vulnerable to attack and that a fairly unsophisticated enemy could disrupt air operations for at least a short time and inflict substantial casualties. Without acknowledging such lessons from our military history and their implications for the future, we cannot evaluate the adequacy of current security forces doctrine. Furthermore, attacks such as those on the Pentagon and World Trade Center on 11 September 2001 should serve as a constant reminder for the USAF to question whether its doctrine meets the needs of a world in which enemies will continue to attack using asymmetric means. Finally, history gives us the starting point for all our doctrine, allowing us to determine past trends, extrapolate them in some imperfect fashion, and decide what the future may hold.

Regarding the environment in which US forces are likely to find themselves, Dennis Drew comments that “insurgencies, protracted revolutionary warfare in the underdeveloped and developing world, appear to be the most likely, if not the most directly threatening, kinds of conflict the United States will face in [the] future.”¹³ Additionally, Air Force Doctrine Document (AFDD) 3-10, *Force Protection*, asserts,

The 21st Century has, thus far, been characterized by a significant shift in Air Force responsibilities and an increased exposure of its resources to worldwide threats. This point is underscored by the terrorist attacks of 11 September 2001 and the ongoing overseas contingency operations. Today, potential opponents are more unpredictable, capable, and lethal, leveraging the increased availability of high and low technology weapons, including weapons of mass destruction (WMD). The Air Force’s ability to project US airpower requires protection from these threats at home, in transit, and abroad.¹⁴

The USAF’s work to improve combined ABD operations in the Republic of Korea and recent experiences in Afghanistan and Iraq have served to validate this doctrinal shift.

In their book *“Check Six Begins on the Ground,”* David Shlapak and Alan Vick claim, “The threat facing USAF bases in future contingencies will likely resemble those presented by SAS [British Special Air Service] operations in North Africa or the VC/NVA in Vietnam.”¹⁵ The chief problem for the USAF in facing a Vietnam-type threat is the manner in which those forces tend to conduct operations. Ac-

ording to Vick's book, *Snakes in the Eagle's Nest*, "Ninety-six percent of the attacks [in Vietnam] . . . used standoff weapons rather than attempting to penetrate defenses."¹⁶ The weapons of choice for the VC/NVA were rockets and mortars. These attacks represent the classic asymmetric threat that base defense planners need to consider strongly, as the rounds simply went over perimeter defenses such as machine guns, sentry dogs, and observation posts.

Steven Metz and Douglas Johnson point out that asymmetry is the "use of some sort of difference to gain an advantage over an adversary."¹⁷ That difference has played out on the battlefield throughout the course of US military history. Asymmetric attacks are nothing new—witness the kamikaze attacks against Allied ships in World War II, the destruction of the US Marine Corps's Beirut compound in 1983, and the 1996 Khobar Towers bombing in Saudi Arabia, for example. In the same way fire ants use asymmetric capability (e.g., superior mobility and poisonous mandibles) to defend their territory, opponents seek to defeat the United States in a manner and place that avoids US strength and technology. The USAF will continue to face enemy forces that use asymmetric tactics and methods such as standoff attack as a means of avoiding a conventional engagement with the service's technologically superior security forces.

Experts tend to agree with this assessment. Clifton Dickey, a retired USAF security forces officer, argues that "future adversaries of the United States will likely employ some type of asymmetric strategy to defeat or lessen the effectiveness of the United States Air Force's [air and space expeditionary force] (AEF)."¹⁸ He makes a case for the effectiveness of asymmetric, standoff attack in his account of the 1968 Tet offensive:

On the night of 29 January 1968, the US realized the seriousness of its air base vulnerability with the beginning of the TET offensive. On the first night, enemy forces mounted forty-four attacks against friendly air bases with forty-one classified as standoff attacks. The standoff attacks relied on crude rockets, 81mm mortars, and recoilless rifles while managing to destroy 13 aircraft and leaving 40 others with major damage. When the TET offensive finally ended on 31 March 1968, the NVA/VC had attacked 23 US and [Republic of Vietnam] airfields, 36 provincial capitals, and numerous hamlets but lost the offensive at a cost of over 45,000 casualties.¹⁹

Institutionally, the USAF recognizes the significance of the asymmetric threat. Air Force Instruction (AFI) 31-101, *Integrated Defense*, has this to say about the threat to air bases: "The current

asymmetric threat environment and the absence of a conventional 'frontline' coupled with the global presence of threat actors has created an environment where threats can be just as high at CONUS installations as they are OCONUS or in expeditionary locations. This 'continuum' makes no distinction between CONUS and OCONUS, garrison or deployed locations. What does change are the tactics, techniques and procedures (TTPs) employed by threat actors against our assets and the local vulnerabilities exploitable by these TTPs.²⁰ The word *asymmetric* implies that adversaries will not likely charge headlong into a perimeter of infrared sensors, military working dogs, and manned fighting positions but will seek to disrupt USAF operations by employing tactics that avoid formidable defenses. Consequently, standoff attacks—because they number among those least likely to encounter USAF strength—represent an ongoing threat to Air Force operations in terms of asymmetric warfare.

Even the strike against the Khobar Towers housing complex in Dhahran, Saudi Arabia, in 1996 qualifies as a standoff attack since the perpetrator never entered the legal limit of the installation yet killed 19 Airmen. Moreover, al-Qaeda and the Taliban employ standoff rocket and mortar attacks in Afghanistan, as attested by Col David Young, a security forces officer on the ground at Kandahar Air Base from December 2001 to March 2002, who reported four rocket attacks on the base. According to Young, then a major, the attacks were not effective but typify the enemy's attempt to find and expose gaps in base defenses.²¹ Since that time, insurgent capabilities in Afghanistan have grown, as the Taliban and other elements refined their techniques to conduct multiple, complex attacks against air bases.

In May 2010 a complex attack on Bagram Airfield resulted in the death of 16 insurgents and one US contractor and the wounding of nine coalition members. Dressed in US camouflaged uniforms, attackers began their assault with a screen of indirect fire followed by an attempted ground penetration of the perimeter. While most air base attacks were largely unsuccessful at penetrating base perimeters, there was one notable exception. On the night of 14 September 2012, insurgents penetrated a British and US Marine Corps base in Helmand Province, killing two Marines, wounding nine coalition members, and destroying six fighter aircraft and three fuel depots.²²

Doctrinal Overview

To determine whether USAF security forces are capable of defending against the threat of attacks on air bases, one must move down the doctrinal ladder from basic air and space doctrine, through combat support and FP doctrines, to base defense doctrine. In doing so, one discovers that USAF doctrine is holistic and consistent. For example, according to AFDD 1, *Air Force Basic Doctrine, Organization, and Command*, “Aircraft are most vulnerable on the ground. Thus, force protection is an integral part of airpower employments. Fixed bases are especially vulnerable as they not only should withstand aerial, ground, and cyberspace attacks, but should also sustain concentrated and prolonged air, space, and cyberspace activities against the enemy.”²³

Integrated air base defense, then, is a key element of all USAF operations. The service considers base defense a part of its overall FP program—a combat support function. AFDD 3-10, *Force Protection*, documents the importance of force protection and the doctrinal submission of ABD as a function of force protection: “Every Airman is a sensor, and protecting the force is everyone’s duty. All Airmen are responsible for FP, whether reporting suspicious activity while engaged in their primary duties, augmenting base defense, or assisting in response to natural disaster. This responsibility can stress available personnel and resources. In the end, commanders should balance mission accomplishment with FP and embrace the ‘every Airman is a warrior’ culture, enlisting the whole force in protecting or defending an air base.”²⁴

In defining the role of security forces, AFDD 3-10 further notes that “Air Force Security Forces are the Service enterprise lead for integrated defense operations, synchronizing Air Force policy pertaining to protection and defense against all threats and hazards to Air Force installations.”²⁵ In the past, Air Force doctrine was not clear on this point. For example, Air Force Policy Directive (AFPD) 31-3, *Air Base Defense*, stated that “an effective defensive posture must be established to allow generation, launch and sustainment of aerospace operations. In these situations, air base defense forces *provide force protection . . . for warfighting assets*” (emphasis added).²⁶ The minor flaw with this definition is that it essentially makes force protection a function of security forces.

In developing the concept of integrated defense, the USAF established its view of force protection and the role of security forces more clearly. According to AFI 31-101, *Integrated Defense*, “ID does not stand alone to protect personnel and resources; planners create an effective security program by coordinating with other DOD and AF programs. Protection and defense of air bases requires the coordinated effort of ID, EM [emergency management], AT [antiterrorism] and other mission support functions forces under the FP umbrella.”²⁷

Overall, security-force planners assume that an adversary will use kinetic, ground-based means to attack the air base directly or indirectly. As a result, current USAF doctrine for base defense boils down to putting bodies, weapons, sensors, and fires in the right place at the right time inside the whole of the base security zone (BSZ). On the other hand, FP, in USAF terms, describes the overall process of protecting people and resources, of which the service considers base defense only one part.

Joint Doctrine for Air Base Defense

According to Joint Publication (JP) 3-10.1, *Joint Tactics, Techniques, and Procedures for Base Defense*, “an early priority in the base defense plan may be to establish patrols outside the perimeter.”²⁸ In the past, the USAF primarily planned to do that with the assistance of host-nation or sister-service forces. However, doctrinal restriction of security forces inside the tactical area of responsibility (TAOR) and reliance on friendly forces for controlling the terrain beyond the TAOR came with risks that the USAF was not prepared to accept in the long term. Even though ID has overcome the limitations imposed by the TAOR, joint doctrine sheds some light on why the service originally chose to accept this risk.

Per JP 3-10.1, the combatant commander must insure that bases are adequately protected.²⁹ Presumably, this means the commander will provide the necessary forces to meet any threat to air bases. However, two problems arise. First, a cursory review of JP 3-10.1 reveals that it applies to a linear, contiguous battlefield. For example, it talks about establishing rear areas, base clusters, control centers, and other control measures designed to share the burden of base defense.³⁰ Other than the Korean theater of operations, US armed forces have largely moved away from this construct, as illustrated so well in US

military operations in Iraq and Afghanistan. Lacking an upgraded concept for base defense, the implication was that the USAF would likely be left on its own to secure a remote yet vital airfield.³¹ Second, these joint tactics, techniques, and procedures assume that security forces assigned to a given base can defeat a level-I threat. Given that a single terrorist or sympathizer might use a standoff weapon from outside the TAOR of that security force, such an assumption may not be valid.

USAF Resources for Air Base Defense

Future contingency operations will no doubt require rapid deployment of USAF and joint assets to unprepared airfields. Maintaining a rapidly deployable and highly proficient base defense force will be a challenge, as fiscal austerity presses on USAF budgets. The current capability for meeting contingency deployments is the 820th Security Forces Group, which is comprised of three deployable squadrons. Originally established in 1997 as the 820th Base Defense Group, it boasts 12 USAF specialty codes with an airborne capability and acts as the “Air Force’s only worldwide deployable, ‘first-in,’ fully integrated, multidisciplined, highly qualified, self-sustaining force protection capability.”³² Maintaining and growing this expeditionary capacity must be a priority to ensure a truly deployable and capable base defense force.

Other provisional security forces units are the sum of subunits, also known as shreds, organized under the AEF model out of fixed-base units in the CONUS and overseas. These shreds leave their home units behind, minimally manned to meet the mission demands of the twenty-first century. The chief risk of the current approach to building provisional squadrons by forming a squadron from the sum of numerous elements is that, if faced with a combat situation, the squadron may not perform optimally because, arguably, it is not really a unit but a composite of several different units. Certainly, good leadership, a positive climate, military discipline, and a common mission serve to bond units together. For example, in the late 1990s the USAF realized that sending individual replacements to Southwest Asia was a bad practice. Overall, the change by Air Combat Command requiring at least a 13-person squad to deploy to Southwest Asia was a great initiative and has gone a long way to mitigating sys-

temic problems facing units composed of entirely individual augmentees.

However, when a unit consists of 10 such squads as well as other larger and smaller elements, all from different bases, gaps are likely to form in its unity and cohesiveness. Moreover, because provisional squadrons formed on the AEF concept are unevenly trained, deployed squadron commanders and operations staffs risk spending their time on integrating new shreds every 90 or 120 days rather than on the tough business of ID. The bottom line is that the USAF's security forces may be spread so thin over CONUS and overseas missions that they risk protecting nothing by trying to protect everything. Even though the risk management model built into the ID concept is designed to incorporate local threat, vulnerability, and criticality in a way to prevent this, the USAF should assess whether the current force structure of its security forces is optimized to provide the full range of ID capabilities.

Accordingly, this is not to say that each air base outside the CONUS needs 1,000 security forces and mounted patrols 20 kilometers from the base. However, it is to say that today we have—and will likely have in the next war—aircraft deployed in locations and situations that our security forces will have to patrol the standoff footprint because other friendly forces simply will not be available to conduct these operations. The aforementioned base defense operations at JBB are a strong indication that this assessment is accurate and will stand the test of time. Thus, security forces need the organization and training to conduct these operations successfully.

AFDD 4-0, *Combat Support*, states that a key agile combat support effect is to provide “forces that are . . . organized, trained, and equipped to provide efficient and effective combat and combat support effects across the full range of military operations.”³³ Further, AFDD 3-10 lists standoff attacks among those for which “Airmen should continually think outside the box and conduct what if scenarios to counter potential future threats and hazards that have not yet been planned for or seen.”³⁴ Arguably, the current structure, mission set, and daily requirements of the security forces do not allow them to become all that these doctrine documents envision, a situation that has implications for the asymmetric threat.

Writing about the 820th, a truly expeditionary unit in an expeditionary air and space force, Herbert Brown declares, “With the capability to deploy within 24 hours of notification, the USAF has finally

established a viable solution to the age-old problem of protecting our deployed assets.³⁵ However, his view of this group as a panacea is premature. Brown does not account for the vast number of steady-state deployments levied on the 820th, nor does he mention the number of forces required as the United States went to war in Afghanistan and Iraq. But he is on target in his assessment of how we should organize and train security forces. Operations in support of the global war on terrorism further illustrate this point.

When the 822nd Security Forces Squadron deployed to Ganci Air Base, Kyrgyzstan, unit leadership established patrols—both mounted and dismounted—off the installation to secure the SAM footprint.³⁶ What makes this patrolling important is the training required to do it well. Lt Col Donald T. R. Deery, retired, USAF, former commander of the 822nd ESFS, commented about the deployment to Kyrgyzstan: “Our unit does nothing but train and deploy to contingency operations.”³⁷ In other words, the squadrons in the 820th Security Forces Group train the way they fight. In another example, members of the 86th Contingency Response Group launched mounted patrols outside the installation perimeter in Bashur, Iraq, in order to limit the possibility of standoff attack.³⁸ Another example of security forces organized and trained to fight can be found today in the Republic of Korea. The 8th and 51st Security Forces Squadrons are forward deployed and prepared for a “fight tonight” scenario. These units live out the ID concept through routine interaction with South Korean counterparts, constant update of combined plans for depth in defense, training exercises, and combined base defense operations centers.

Recommendations

The USAF is an expeditionary service, so its security forces should be equally expeditionary. Making them so will require a new mindset, increased risk, and reorganization. One alternative entails shifting a major portion of these forces from law enforcement, entry control, and administration in the CONUS to new expeditionary units based on the 820th model. Even though the USAF has made strides in implementing civilians to handle some law enforcement functions, this recommendation is more overarching and envisions each CONUS installation adopting a civilian security force to handle all the

functions that USAF security forces need to give up, something that may be difficult in today's fiscal environment.

To support a more deployable force, CONUS units would need to relinquish security missions to a civilian security force or accept more risk in functions such as law enforcement, resource protection, crime prevention, administration, and entry control. Those manpower positions would move to new expeditionary squadrons. Moreover, the old squadrons would retain a core of military manpower under the leadership of competent officers and senior NCOs to perform vital weapons-system security for resources at priority-level II and above. Moving these "bill-paying" positions from conventional to expeditionary squadrons is certainly revolutionary. Other changes are equally radical.

An expeditionary unit needs to focus on training and deploying to fight. For example, when the 23rd Fighter Squadron is at home in Spangdahlem, Germany, its members are training to fight for the next war. However, the 52nd Security Forces Squadron, also based at Spangdahlem, is trying to squeeze training into a schedule that includes registering cars and making sure that base organizations fulfill their resource protection responsibilities. The organizational change mentioned above addresses the need to divest these functions and transform security forces into an expeditionary force while leaving only a precious few members behind to provide close-in security and response capability for key war-fighting resources. As a result, as additional groups of security forces squadrons form, they can focus on training in the way the USAF now fights—as part of an air and space expeditionary task force, building true, sustainable combat skills and capabilities second to none. Organization and training are not the only changes that have to be made. USAF leaders must change their minds about what risks they are willing to take.

Under the ID concept, installation commanders would bear the brunt of accepting the increased risk based on a realistic assessment of the local threat. A key critique of ID is that threat is still largely a postulation of what we think we might face versus a transparent review of the actual local threat. As a result, the Air Force is still frozen in time with the change agent required for a thorough transformation left outside the digital framework of the Integrated Defense Risk Management Program. Moreover, the Air Staff would have its hands full addressing the following resource issues:

1. Location of the units. Related matters include dorms, housing, ranges, and offices. Congressional involvement as major restructure threatens constituents.
2. Funding for a large civilian (contract or civil service) security force in the CONUS.
3. Funding for the balance of equipment required, such as weapons and ammunition.

Even though the USAF combined AFIs 31-101 and 31-301 in the creation of the ID, AFI 10-245, *Air Force Antiterrorism Standards*, is still the doctrinal outsider. Even though a separate AFI for antiterrorism (AT) makes fulfilling Department of Defense (DOD) AT guidance and standards more clear-cut, we would find ourselves on much firmer ground with a single ID document—one that deals comprehensively with threats to air bases, in the CONUS or overseas; eliminates the distinction between threats posed by terrorists and those posed by special forces during a major theater war; and focuses on countering threats based on the capabilities, tactics, or techniques that an enemy could employ to attack our bases.

The threat-level system also needs modification. The DOD has shifted almost exclusively to discussing military forces in terms of capability. If the armed forces have moved more toward this model, then it is time to change the threat-level system accordingly. The current system indicates only the size of the threat. However, a level-I threat comprised of men armed with an 81 mm mortar is much more serious than one from the same group armed only with rifles. Additionally, that same level-I threat potentially could do more damage than a level-II threat attempting direct penetration through a tactical automated security system, fighting positions, and well-controlled response forces. The bottom line is that future enemies are not going to fit into neat packages based on the size or type of element attacking the air base. Conversely, they will possess more easily defined capabilities and should be dealt with accordingly. In other words, if a single terrorist packs enough punch to warrant a response force moving against him, then so be it. That said, the existing threat classification system, codified in the USAF's 2009 ID instruction, should be changed as follows:

- Level I: Capable of conducting a direct attack using tactics such as infiltration, improvised explosive devices, or small-arms assault.

- Level II: Capable of conducting direct and standoff attacks using small arms, mortars, rockets, RPGs, snipers, large-magnitude bombs, and limited biological or chemical agents.
- Level III: Same threat as levels I and II plus capable of conducting company-sized direct or standoff attacks that would require a response from a mobile combat force with heavy weapons.
- Level IV: Same threat as all or part of levels I–III plus capable of launching theater ballistic missiles with or without chemical or biological agents.

Finally, if the ID concept is truly designed to integrate and harness the full capacity of the USAF, it must follow through with its stated goal that base defense is a “fundamental battle competency for all Airmen, whether garrison or deployed” and that “every Airman is a sensor.”³⁹ Without fundamental change to USAF culture and mandated roles in base defense, these slogans are hollow. As an example, for all of the success of the USAF in defending JBB and implementing the ID concept, its weakest point was the integration of the base population in the defense plan. While the Army required all of its personnel to carry weapons at all times (with the exception of fitness activities), the USAF only required the ranks of E-7 and higher to carry a weapon. The wing, instead, conducted occasional “arming battle drills” so that Airmen would be “familiar with their weapon,” carrying it for a few days per quarter.⁴⁰ At a minimum, Airmen in a war zone should be responsible for protecting themselves at all times by carrying a weapon. The promise of ID will not be fulfilled unless all personnel truly play a role in the defense of the air base by defending themselves and their work spaces.

Conclusion

At least superficially, the USAF learned a lesson from the attack on Bien Hoa Air Base and created doctrine to address its base defense needs and the requirements of joint doctrine. Over the past decade, the USAF has fundamentally revised its doctrine and procedures for defending air bases. Most notably, the advent of ID and the BSZ concept and placing responsibility for security of the entire BSZ in the hands of the installation commander have largely closed the gap created by Air Force Policy Directive (AFPD) 31-3 (dated 28 December

2001). Ironically, AFPD 31-3, published a mere three months after the 11 September 2001 terrorist attacks, essentially considered the security forces capable of controlling only those areas out to the maximum effective range of the heaviest weapons system available to the defense force commander and relegated responsibility for threats outside this area to host-nation or sister services.

Clearly, the USAF is concerned with the standoff footprint but in the past considered itself largely incapable of denying its use to the enemy, a stance that leaves the service in a real quandary. In the same way the German U-boat captains found the gap where airborne escorts could not protect Allied shipping during the Battle for the Atlantic, it is only a matter of time until forces opposing the United States find the gap around our air bases and begin to exploit it—if we do not continually assess our doctrine, operational practice, and force structure. Moreover, host nations and sister services, in accordance with their doctrine, may be involved in more significant offensive operations, unable to focus on the needs of expeditionary air and space forces.

Consequently, the USAF needs an expeditionary security force with the force structure and training to meet steady-state AEF needs as well as provide combatant commanders with a unified, highly trained force capable of moving anywhere inside the BSZ to meet the enemy—five, 10, or maybe even 15 kilometers from the air base. This concept does not mandate a stand-alone force. Rather, expeditionary security forces need to work with other support group units, Office of Special Investigations detachments, host nations, and sister services to achieve synergy in base defense operations.

To repeat, radical times demand radical changes. In Vietnam, who would have thought a B-52 could drop a bomb guided precisely to a target by a satellite constellation as was done in Afghanistan? Now such practices are accepted as the norm for USAF operations. Even though the USAF willingly underwent these kinds of revolutionary changes, today's security forces are much like legacy aircraft that flew in Vietnam, capable of being more precise, lethal, and more proficient. Reorganizing, accepting moderate risk at CONUS installations, and creating a more expeditionary security-forces capacity provide a solid foundation for the USAF to create a truly expeditionary force that can protect its own assets, instead of relying on the kindness of others. In accepting these recommendations, the USAF will go a long

way toward insuring that the eagle's talons become significantly sharper.

Notes

1. Williamson Murray and Allan R. Millett, *A War to Be Won: Fighting the Second World War* (Cambridge, MA: Belknap Press of Harvard University Press, 2000), 253.

2. *Ibid.*, 255.

3. Richard G. Davis, *The 31 Initiatives: A Study in Air Force–Army Cooperation* (Washington, DC: Office of Air Force History, 1987), 125.

4. Gen John P. Jumper, “Expeditionary Air Force: A New Culture for a New Century” transcript, Air Force Association Symposium, Orlando, FL, 26 February 1998, <http://www.afa.org/aef/pub/ol19.asp>.

5. Glen E. Christensen, “Air Base Defense in the Twenty-First Century” (monograph, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, KS, 2007), 8, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA470671>.

6. Bradley Spacy, “The Future of Security Forces in Combat,” *Air Force Print News Today*, 24 January 2006.

7. Gen T. Michael Moseley, to all USAF major command commanders, memorandum, 8 January 2006.

8. Air Force Policy Directive (AFPD) 31-1, *Integrated Defense*, 7 July 2007 (incorporating change 1, 22 April 2009), 2.

9. *Ibid.*

10. Don Branum, “Balad Airmen Look Back: 2008 in Review,” 332nd Air Expeditionary Wing Public Affairs, Joint Base Balad, Iraq, 1 January 2009.

11. Shannon W. Caudill et al., “Defending the Joint Force: Lessons Learned from Joint Base Balad,” *Air and Space Power Journal* 25, no. 1 (Spring 2011): 89–90.

12. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961–1973* (Washington, DC: Office of Air Force History, United States Air Force, 1979), 1.

13. Dennis M. Drew, *Airpower in the New World Order* (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 1993), 3.

14. Air Force Doctrine Document (AFDD) 3-10, *Force Protection*, 28 July 2011, 1.

15. David A. Shlapak and Alan Vick, “*Check Six Begins on the Ground*”: *Responding to the Evolving Ground Threat to U.S. Air Force Bases* (Santa Monica, CA: RAND Corporation, 1995), 37.

16. Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND Corporation, 1995), 68.

17. Steven Metz and Douglas V. Johnson II, *Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts* (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 2001), 1, <http://www.au.af.mil/au/awc/awcgate/ssi/asymmetry.pdf>.

18. Clifton L. Dickey, “Air Base Defense for the Air Expeditionary Force: More Than Defending the Redline” (thesis, School of Advanced Airpower Studies, Maxwell AFB, AL, 1998), 1–2.

19. *Ibid.*, 9.

20. Air Force Instruction (AFI) 31-101, *Integrated Defense*, 9 October 2009 (incorporating through change 2, 7 March 2013), 8.
21. Maj David Young (McConnell AFB, KS), interview by the author, 4 April 2003. Major Young also recounted four additional strikes in which the enemy attacked on foot with small arms.
22. Alyssa J. Rubin, "Audacious Raid on NATO Base Shows Taliban Reach," *New York Times*, 16 September 2012, http://www.nytimes.com/2012/09/17/world/asia/green-on-blue-attacks-in-afghanistan-continue.html?pagewanted=all&_r=0.
23. AFDD 1, *Air Force Basic Doctrine, Organization, and Command*, 14 October 2011, 34.
24. AFDD 3-10, *Force Protection*, 28 July 2011, 3.
25. *Ibid.*, 31.
26. Air Force Policy Directive (AFPD) 31-3, *Air Base Defense*, 28 December 2001, 1.
27. AFI 31-101, *Integrated Defense*, 13.
28. Joint Publication (JP) 3-10.1, *Joint Tactics, Techniques, and Procedures for Base Defense*, 23 July 1996, IV-12.
29. *Ibid.*, II-1.
30. *Ibid.*
31. Kevin Dougherty, "Leader of Bashur Patrollers Understands Importance of His Job," *European Stars and Stripes*, 10 April 2003. The article refers to the 173rd Airborne Brigade moving south to conduct offensive operations. That movement left Air Force security forces solely in charge of base defense while relying heavily on local Kurds to provide key intelligence.
32. US Air Force, Fact Sheet, 820th Base Defense Group, Moody AFB, GA, 14 October 2010, <http://www.moody.af.mil/library/factsheets/factsheet.asp?id=4459>.
33. Air Force Doctrine Document (AFDD) 4-0, *Combat Support*, 28 July 2011, 3.
34. AFDD 3-10, *Force Protection*, 14.
35. Lt Col Herbert T. Brown, *Current Air Base Ground Defense Doctrine: Are We Postured to Meet the Expectations of the AEF?* (research report, Maxwell AFB, AL: Air Command and Staff College, April 2001), v-vi.
36. Linda D. Kozaryn, "The Road from Baltimore to Bishkek," *American Forces Press Service*, 14 May 2002, http://www.defenselink.mil/news/May2002/n05142002_200205148.html.
37. Quoted in Linda D. Kozaryn, "822d Security Forces: On Guard in Kyrgyzstan," *American Forces Press Service*, 28 June 2002, <http://www.defendamerica.mil/awt/jun2002/awt062802a.html>.
38. Kevin Dougherty, "Security Forces Take on First Patrols of Key Base at Bashur," *European Stars and Stripes*, 10 April 2003.
39. AFPD 31-1, *Integrated Defense*, 2; AFDD 3-10, *Force Protection*, 3.
40. 332nd Air Expeditionary Wing, Public Affairs, US Air Force, "Arming Up," 25 February 2010, <http://www.332aew.afcent.af.mil/photos/mediagallery.asp?galleryID=1503&page=62>.

Chapter 8

Setting the Right Glide Slope Preparing the Air Force for the Next Counterinsurgency Campaign

Paul J. Kasuda

Today's military forces face asymmetrical threats arrayed throughout a nonlinear battlefield environment. No longer are enemy and friendly forces positioned in a linear fashion with a clearly defined forward edge of the battle area (FEBA). In years past, friendly forces enjoyed some semblance of security in the rear area, as hostilities were typically associated with the front line. The United States Air Force (USAF) was typically positioned in areas well behind the FEBA, operating in a relatively permissive environment. Today's environment requires the USAF and joint force to station air assets and operate directly in the midst of the nonlinear battlespace. This was especially true in Operation Iraqi Freedom (OIF).

As the operational mission in Iraq shifted from a regime change to stability operations, US forces shifted their strategy to a new type of mission, counterinsurgency (COIN). Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, defines COIN as the "comprehensive civilian and military efforts taken to defeat an insurgency and to address any core grievances."¹ Deployed in the heart of the nonlinear battlespace environment, USAF members now find themselves in the midst of ongoing COIN operations. US airpower assets provide unique capabilities to COIN operations in the form of both kinetic and nonkinetic support. However, there is a seam in USAF doctrine and training for support and synchronization of COIN operations on the ground. The typical "air-centric" approach to presenting USAF air and space power to combatant commanders has lost sight of the fact that Airmen are engaged in COIN operations on the ground. Despite improvements

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to irregular warfare (IW) doctrine in 2013, the USAF still needs to improve its existing IW and COIN guidance to ensure its future adaptability to IW operational environments. Additionally, the USAF must address IW and COIN training and education outcomes and COIN capabilities to account for Airmen performing combat support on the ground, specifically as it pertains to influencing the battlespace around an air base.

This chapter examines how the USAF IW and COIN guidance has evolved. It also discusses USAF COIN combat support operations and concludes that the USAF has not fully adapted to COIN practices as it pertains to COIN operations in the base security zone surrounding its air bases because it lacks both doctrinal guidance and proper training for its Airmen. I will first provide a brief overview of COIN operations and show how Airmen are engaged in COIN operations on the ground. Discussions in this area will highlight how Airmen operate in the nonlinear battlespace and are an invaluable asset to the battlespace owner (BSO). I will then move the discussion to current COIN doctrine, showing a lack of USAF ground-specific guidance. Next, I will discuss current training for Airmen operating in the deployed environment, showing a lack of preparedness for Airmen to be effective in COIN operations on the ground.

This chapter concludes with recommendations regarding the need to update existing doctrinal guidance to enhance training with regard to COIN operations and a recommendation for developing an expeditionary wing-level organizational structure to support COIN operations on the ground. These recommendations are based on an examination of the USAF experience at Joint Base Balad (JBB), Iraq, and an exploration of the 332nd Air Expeditionary Wing's discovery of a seam in the USAF's ability to synchronize COIN operations on the ground, a critical gap that directly affected the security and defense of air assets on the ground.

Airmen and COIN on the Ground

The battlefields of today are much different from times past. US military forces operate on a nonlinear battlefield comprised of a host of asymmetrical threats. In previous eras, US air bases were located in the rear area, well behind conventional forces arrayed in a classic

force-on-force engagement with clearly identifiable lines of operations. As OIF demonstrated, this is no longer the case. Maj Gen Mary Kay Hertog, a former director of USAF security forces commented, “OIF has taught us there is no rear area.”²

Throughout OIF, USAF bases were located within the defined battlespace of an assigned ground BSO.³ The BSO is responsible for the execution of all the lines of operation in the ground COIN campaign plan in that particular assigned area of operation (AO). As air bases are located within the BSO’s battlespace, it is crucial that Airmen develop a working relationship that strives toward a unity of effort in supporting the BSO’s COIN strategy as it benefits security and synchronization with the air base. Therefore, it is necessary to facilitate support for the BSO’s campaign plan, as there is a direct benefit to the air base through an improved security environment. Such was the case with COIN operations in OIF and specifically at JBB.

The BSO is also responsible for coordinating and leveraging the capabilities of all coalition, host nation, and other partner units, including nonmilitary entities like the provincial reconstruction teams and nongovernmental organizations (NGO). If properly synchronized, these mutually supporting operations create a symbiotic relationship, unity of effort, and ultimately a more efficient use of resources. As such, air bases play a pivotal role in supporting COIN operations on the ground. The following portion of the chapter discusses how USAF ground-based Airmen provide support to these COIN operations.

USAF Airmen deployed to OIF found themselves right in the middle of COIN operations, whether placed under the tactical control of US Army units under a joint expeditionary tasking (JET) or as a member of an expeditionary wing deployed in a battlespace where COIN operations were being conducted. A relatively small number of Airmen deployed in support of JET. Examples of JETs performed by Airmen include skill sets ranging from law and order detachments to detainee operations to provincial reconstruction teams. What is sometimes overlooked is the fact that Airmen assigned to expeditionary wings were both directly and indirectly involved in ongoing COIN operations. JBB illustrates how “regular” Airmen were involved with COIN operations as well.

The 332nd Air Expeditionary Wing (AEW) was assigned base operating and support integrator (BOS-I) responsibilities at JBB. As such, complete integration with the BSO for base security purposes

was a necessity. Along with this came the need to integrate with the BSO to support the ongoing COIN campaign plan. JBB interacted with the local populace on numerous levels. The base provided a large source of employment through various contract mechanisms, hiring local citizens from surrounding communities that provided valuable service and support on the installation. The 332nd AEW was also involved with various construction projects, which included a medical treatment facility and local police station located adjacent to the installation as a collaborative project with host-nation representatives. Additionally, the 332nd AEW routinely treated local populace trauma cases, ranging from vehicle accidents, improvised explosive device (IED) injuries, and gunshot wounds. The wing also partnered with local nurses and doctors, allowing them to participate in medical procedures on base and gain health-care services advice for use in the local communities. JBB also sponsored “Kids’ Day” events, where children from the local areas were brought on base and entertained through various demonstrations and interactions with US servicemen and women. In addition, as the BOS-I, the 332nd AEW was responsible for outside-the-wire security, specifically required to conduct COIN operations in the battlespace surrounding the base, counter the indirect fire threat (rockets and mortars), and control entry onto the installation—all of which involved daily contact with the local population.

Returning to the notion of COIN operations, using military, economic, and civic actions to defeat an insurgency, it becomes clear that Airmen were engaged in some level of COIN operations both directly and indirectly. It is important to recognize that the USAF and other operating bases in the BSO’s AOs can have profound positive or negative second- and third-order effects across the battlespace. This impact can include decisions made inside the wire, whether those decisions revolve around Air Provost services (law and order operations), contracting, construction, or something as simple as hosting an Iraqi children’s health and wellness day. If these operations and activities are poorly coordinated and relationships are not clearly understood, they can undermine the BSO’s relationships with local national key leaders and adversely affect his or her efforts along a number of lines of operation, thus undermining his or her ability to influence the battlespace.

The Doctrine That Drove COIN Operations in Iraq

Doctrine is defined in Joint Publication (JP) 1-02 as the “fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives.”⁴ Furthermore, as Maj Kenneth Bebbe points out, “The purpose of doctrine is to help us prepare to fight present and future conflicts by codifying the experiences of the past. . . . Subsequently, *doctrine shapes the manner in which the Air Force organizes, trains, equips, and sustains its forces*” (emphasis in original).⁵ Simply put, doctrine provides the foundation upon which operational planning, preparation, and mission execution are based. This portion of the chapter will discuss joint, US Army, and USAF COIN doctrine and will illustrate how the air-centric USAF doctrine fails to adequately address the role Airmen perform on the ground during COIN operations.

US Army Field Manual (FM) 3-24, *Counterinsurgency*, published in December 2006, includes a detailed explanation of COIN campaign planning considerations, concepts of force employment, developing host-nation security forces, leadership and ethics for COIN, as well as a guide for action. It also contains a five-page appendix on airpower in COIN. This appendix recognizes the force multipliers that air and space forces bring to the COIN fight and provides information on both the kinetic and nonkinetic support missions the USAF can bring to bear. This comprehensive doctrine document provides necessary information for ground forces to understand the nature of counterinsurgencies and develop effective COIN campaign plans.

If the USAF-Army cooperation on AirLand Battle doctrine in the early 1980s is considered the high point of joint partnership, it could be argued that the lack of USAF participation in the crafting of COIN doctrine may well be the low point. The USAF missed an opportunity to shape COIN doctrine for the war. The Army invited the USAF to participate by extending invitations to Air Combat Command and Air Force Special Operations Command, but both declined.⁶ This was a failure to envision the importance of the Army’s effort as the primary shaping factor for future operations in both Iraq and Afghanistan. It was also an abdication of responsibility, as over 8,000 Airmen were augmenting the Army’s combat support elements as COIN enablers on the ground.⁷

Dr. William Dean, an Air Command and Staff College faculty member and an accomplished historian focused on insurgency, convinced his college's leadership to finance his participation at the Army's COIN doctrine forum. As such, he became the only participant from the USAF writ large. He collaborated with another scholar, Dr. James S. Corum, to write the five-page annex on airpower for the manual. Based largely on the 10-point conclusion of Corum's *Air Power in Small Wars*, the annex did a masterful job of capturing the major contributions of airpower to a COIN operational environment.⁸

Like the Army, the USAF recognized the need to adjust its doctrine documents with regard to COIN operations. The USAF was prompted to address its IW doctrine because of the publication of the Army's Field Manual 3-24, *Counterinsurgency*, which became the seminal doctrine for the campaigns in Iraq and Afghanistan.⁹ The USAF solution was Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, originally published in August 2007, and later renumbered to AFDD 3-24, to match the joint publication, Army, and Marine numbering convention. Its content was updated on 28 July 2011. AFDD 3-24, *Irregular Warfare*, retaining its distinct titling compared to joint or ground component doctrine, which punctuates a different approach to COIN, viewing it as a small subset of IW vice the laser-like focus of Department of Defense (DOD) leaders and planners on COIN-specific operational considerations.

As the 2007 version of AFDD 3-24 was the primary source for guidance in conducting USAF COIN operations in Iraq, its utility and gaps will be examined. The doctrine provided detailed guidance on various air and space considerations with regard to IW and included information on air and space power capabilities and planning considerations for IW operations. Although AFDD 3-24 did provide information on specific airpower considerations for IW, it fell short of providing necessary and practical guidance to Airmen with regard to COIN operations on the ground.

Although thorough in its approach to explaining airpower considerations within the larger context of IW, the specific COIN guidance contained in these areas was largely air platform or "iron" centered, highlighting how airpower within the air and space domain supports COIN operations.

AFDD 3-24 provided information on how the civil engineer and medical communities provide support to IW operations; however, it failed to elaborate on other combat support operations like base de-

fense, liaison with the BSO, and USAF support to the local COIN campaign plan. Airmen assigned to JBB were engaged with local nationals on a daily basis and used by the BSO in support of the overall COIN campaign plan. In this light, a review of AFDD 3-24 indicates a lack of doctrinal guidance on ground-specific roles Airmen perform in COIN operations and a failure to recognize the need to synchronize air base COIN and civil engagement efforts with the BSO.

In addition to the lack of stand-alone COIN guidance, AFDD 3-24 sparsely references existing joint and ground component guidance. In comparing the USAF and US Army COIN doctrine, James Corum stated, “In most respects the two doctrines stand in notable contrast with each other in style, methodology, and substance.”¹⁰ It seemed as if the USAF, in sticking to its staunch “air-mindedness” approach, was overlooking the fact that its Airmen were on the ground and intricately involved in COIN operations. Corum further elaborated on his discussion of USAF COIN guidance by saying, “The core of the Air Force doctrine consists of data about Air Force high tech capabilities, a repetition of slogans found in Air Staff statements, and broad assertions about airpower with no examples to back up the assertions.”¹¹

Recognizing the importance of airpower’s role in COIN operations, Corum further elaborated on his advocacy of FM 3-24, stating, “Airpower is an important tool in counterinsurgency, and [FM 3-24] lays out some basic guidelines for the employment of airpower in counterinsurgency.”¹² Proponents of USAF doctrine argue that the US Army has relegated the USAF role in COIN to a mere support role, depicting its usefulness in a simple annex. USAF major general Charles Dunlap, a former deputy judge advocate, has spoken out against FM 3-24. He charged that “FM 3-24 does superbly articulate a thoughtful *land-power* perspective on the complicated challenge of counterinsurgency. It does not purport to be, however, a full-dimensional joint approach.”¹³ He argues that the US Army does not adequately address the usefulness or the proper command and control of airpower assets. He goes on to say, “At its core, FM 3-24 enthusiastically reflects the Army’s hallowed concept of ‘boots on the ground;’” and “‘targets’ of COIN efforts typically include *nonkinetic* contacts with the friendly population. . . . [FM 3-24] seeks to win their [the people’s] ‘hearts and minds.’ To accomplish that, the doctrine contemplates huge numbers of COIN forces physically ‘closing’ with the target population through various engagement strategies.”¹⁴

In a separate article, Dunlap asserts that air-mindedness “reflects an Airman’s desire to avoid the carnage of ground-force engagements wherever possible. Moreover, whereas soldiers and marines may seek the ‘close fight,’ airmen look for opportunities to obtain the desired effects from long distance—that is, without giving the enemy the opportunity to close.”¹⁵

In analyzing the USAF’s minimal direct references to FM 3-24, one can argue that the USAF is missing the point that Airmen are in fact “boots on the ground” engaged in COIN operations. In today’s nonlinear battlefield, Airmen live and operate on the ground in the middle of ongoing COIN operations. Although the USAF developed doctrinal guidance to prepare its forces to execute both kinetic and nonkinetic air- and space-centric support to COIN operations, it failed to develop the same doctrinal guidance to support its ground-based Airmen.

FM 3-24 led directly to the October 2009 publication of JP 3-24, *Counterinsurgency Operations*, which provides joint guidance on COIN operations. It describes in detail concepts pertaining to both insurgencies and counterinsurgencies and provides the following guidance for supporting COIN operations: information operations; public affairs and media support; detainee operations; security-sector reform operations; and disarmament, demobilization, and reintegration operations.¹⁶ The publication also gives guidance on a four-step process in developing COIN operational plans while also providing various planning considerations for conducting COIN operations. It provides the necessary foundation for services to build their respective guidance on COIN operations.

USAF COIN Training

The USAF has come a long way in preparing its Airmen for deployment operations over the last decade. Recognizing the emergence of the nonlinear battlespace and the fact that Airmen find themselves performing operations in hostile environments, the USAF took significant steps to improve its predeployment training of Airmen, which focused on the necessary combat skills. However, there remained a gap in USAF training with regard to COIN operations. Below is a brief discussion on how USAF training fails to prepare Airmen for COIN operations.

Air Force Instruction 36-2201, *Air Force Training Program*, provides guidance and requirements for all USAF training. Chapter 8 of this instruction covers expeditionary skills training (EST) requirements. EST is organized into four separate tiers. Tier 1, or foundational expeditionary skills (ES) training, is required for all Airmen and is “delivered through accessions and initial occupational training, and sustained through developmental education. Primary focus is to help our Airmen establish a ‘Strong Warrior Ethos’ while also providing them a solid foundation for the KSAs [knowledge, skills, and abilities] to prepare them to survive, operate, and succeed across the full range of military operations.”¹⁷ Tier 2, or deployment-ready ES training, is also required for all Airmen and is “a requirement to maintain mission-ready status to produce a deployment-ready Airman.”¹⁸ Further divided into two subtiers, ES proficiency training and home station predeployment training, Tier 2 training as a whole entails a variety of computer-based training, classroom learning, and hands-on instruction. Tier 3, or advanced ES training (mission specific), is designed for select Airmen and is focused on predeployment training that “supports both standard and non-standard USAF missions” and “often includes timely updates on the latest enemy tactics, techniques and procedures (TTPs).”¹⁹ Completion of this advanced training prepares an Airman for a specific deployment tasking. Tier 3 training provides mission-specific, expeditionary skills for the individual Airman and/or team, and often uses training ranges for predeployment field scenarios and “small team leadership opportunities that are not available at home station.”²⁰ Finally, Tier 4, advanced ES training (USAF Expeditionary Center assigned), focused on rapid development and field training for “skill sets needed to meet critical/emerging requirements” and “subject to rapid curriculum change.”²¹

The shortfall with the training requirements outlined in the USAF tiered training approach is that there is little to no specific COIN training for the bulk of Airmen deploying into present-day combat environments. A review of the training curriculum shows some cultural awareness training, but there is little to no actual COIN training in any Tier 1 or 2 or most Tier 3 training venues. The bulk of Airmen deployed under normal taskings receive virtually no specific COIN training. When one turns to Joint Base Balad as an example, one finds that Airmen assigned to typical units on the base received no prior COIN training. It is critical that Airmen understand COIN doctrine and philosophy and effectively train their forces to integrate and sup-

port the BSO's COIN campaign plan objectives. Airmen directly influence the AO through well-coordinated COIN efforts and individual actions while in contact with local nationals. Conversely, Airmen, through cultural ignorance and uncoordinated or unapproved COIN outreach efforts, can negatively influence the security situation for the AO and undercut the BSO's effectiveness.

To address this training shortfall, JBB developed COIN-specific training that was delivered to all newly arrived Airmen during their "Right Start" orientation briefings. This training included information on COIN definitions, guidance on how the USAF fits into COIN operations, and specifics regarding an individual's COIN responsibilities—all of which could be covered in predeployment EST training.

The lack of specific COIN training, coupled with the lack of specific ground-focused doctrine and guidance discussed previously, creates a gap in Airmen's ability to effectively conduct and support COIN operations.

A Day Late and a Dollar Short: The Air Force's New Doctrine

In March 2013 the USAF released new IW guidance through the publication of AFDD 3-2, replacing AFDD 3-24 under a new numbering convention. While the language of the document makes some notable improvements in explaining the non-air platform elements of IW and captures some lessons learned, primarily from Iraq, it comes too late to do much good for Airmen in conflict. By the time this new document was released, the Iraq campaign had been over for nearly two years, and the Afghanistan withdrawal was in full swing. Having said that, the doctrine "shifted from a counterinsurgency-centric view to an overarching perspective of IW that encompasses the following key activities: stability operations, counterterrorism, counterinsurgency, foreign internal defense, and unconventional warfare."²² The new doctrine claimed the following:

Air Force doctrine is compatible with existing joint doctrine, but expands and elaborates upon it, because joint doctrine does not explicitly describe the philosophical underpinnings of any one Service, nor does it describe how a Service organizes to support a joint force commander. These are Service, not joint, prerogatives. The ideas presented here should enable Airmen to better describe what the Air Force can provide to the joint effort. AFDD 3-2 should

influence creation of corresponding joint and North Atlantic Treaty Organization doctrine, and may inform the doctrine of other Services as well.²³

Importantly, the new doctrine recognizes that the overuse of kinetic instruments can produce negative second- and third-order effects. It states, “Operational focus shifts toward less-kinetic means of defeating the threat while protecting the population, both of which are often co-located. Therefore, seemingly tactical decisions in the IW context can have significant strategic implications.”²⁴

Recommendations

The USAF should do three things to improve its ability to deploy Airmen to COIN operational environments. It must bridge the gap in its guidance and doctrine, improve COIN training, and develop a better organizational model that is postured to synchronize and contribute to the ground COIN campaign.

The USAF must first adjust its current doctrinal guidance on COIN. Although the USAF has published stand-alone doctrinal guidance like AFDD 3-22, *Foreign Internal Defense*, it does not have a stand-alone COIN doctrine document. Instead, it provides, from an air asset-centered approach, guidance on COIN operations in the broader context of IW. A new stand-alone doctrine document needs to significantly expand upon the agile combat support guidance with specific attention to the ground roles Airmen play in COIN. COIN-specific doctrine should be developed and numbered to correlate with joint and service COIN doctrine. Stronger and more detailed references to FM 3-24 and JP 3-24, along with specifics detailing how Airmen work with various ground component forces, must be included in this new doctrinal guidance. Since there is currently no joint planning effort to provide IW doctrinal guidance, the USAF should adjust its guidance to fall in line with the existing joint guidance on COIN.

This recommendation should be presented to the next Air Force Doctrine Working Group, which should validate this doctrinal change. Subject matter experts and experienced COIN ground operators, such as previous 332nd Air Expeditionary Wing leaders, should be included in the development of COIN-specific handbooks and manuals to capture and codify the lessons of successful COIN synchronization. Their first-hand experiences can provide insight on how this doctrinal gap adversely affects the deployed mission. It is

important that the authors write this new doctrine with the larger Airman audience in mind. The authors should avoid using the narrow aperture of focusing on the small number of JET-tasked or special operations Airmen as typically the only Airmen involved in COIN operations. A stand-alone COIN doctrine, with an added focus on “how” Airmen perform COIN on the ground, will provide the foundation to develop requisite training and organizational restructuring.

In addition to updating its COIN doctrine, the USAF must also adjust existing training requirements. Current USAF EST does not include necessary COIN training. All four EST tiers should include the basics of IW and COIN concepts and doctrine. Tier 1 training should include basic concepts of COIN, including what it is and what roles Airmen may play in supporting COIN operations. This should include more detailed training on cultural awareness and how simple tactical actions may have adverse strategic implications. Tier 2 COIN training should cover specific actions Airmen may be involved with in COIN operations such as medical interventions, civil engineer support, community policing efforts, and indirect roles such as sponsoring local community engagement events on the base. Tier 3 and 4 COIN training should target specific leadership roles in COIN operations and further explain how the USAF integrates with the ground component commander or BSO. Training at this level should also include how to interact with locally assigned joint teams as well as other battlefield partners like the Department of State organizations and NGOs.

Consideration should also be given to improving cultural awareness training for NCOs and officers, especially since establishing and maintaining relations with host nation personnel are critical to successful COIN operations and are typically done at the line unit level. The USAF should also consider an appropriate level of mandatory language training for its Airmen. This alone would prove to be beneficial for any Airmen working with and alongside host-nation personnel. COIN training must be universal. The USAF must educate its personnel, especially key leaders, on current COIN doctrine and the underpinning philosophy behind COIN operations; failure to do so has negative consequences in the battlespace and creates friction with the BSO by potentially undercutting his campaign plan aims and information operations message.

The US military, the USAF in particular, must learn from its own past, because there is much history and material from which to benchmark training and organizational approaches. For instance, the Marine Corps's *Small Wars Manual*, originally published in 1940, captures many of the tenets seen in today's COIN and IW doctrine:

One of the dominating factors in the establishment of the mission in small war situations has been in the past, and will continue to be in the future, the civil contacts of the entire command. The satisfactory solution of problems involving civil authorities and civil population requires that all ranks be familiar with the language, the geography, and the political, social, and economic factors involved in the country in which they are operating. Poor judgment on the part of subordinates in the handling of situations involving the local civil authorities and the local inhabitants is certain to involve the commander of the force in unnecessary military difficulties and cause publicity adverse to the public interests of the United States.²⁵

James Corum and Wray Johnson further highlight the need for a shift in training: “[The] U.S. military education system, especially the staff colleges and senior service schools, need to spend a good deal more time addressing the issue of small wars. Currently, U.S. military schools are mired in curricula better suited for conventional war than for the types of unconventional wars likely to be fought in the next decades. There is very little history, theory, or doctrine on counter-insurgency taught in the U.S. military staff colleges today.”²⁶ The USAF seems to forget that many of its early leaders, Billy Mitchell included, cut their teeth as young leaders fighting the Philippine insurgency from 1899 to 1902.²⁷

Finally, the USAF should develop and implement an AEW-level COIN organizational structure. In late 2009, the 332nd Air Expeditionary Wing at JBB developed a new COIN structure that integrated all base-level COIN support roles into the BSO's ongoing COIN campaign plan. Figure 8.1 identifies this three-tiered COIN synchronization construct. Under this construct, the executive council, chaired by the vice wing commander, was responsible for reviewing and recommending various courses of actions regarding base COIN efforts. Accordingly, the planning team was responsible for working directly with the BSO to integrate base COIN efforts with the existing COIN campaign plan. This construct also proposed that the various working groups, focused on governance, security, and economics, develop proposed projects and actions to directly support ongoing COIN operations.

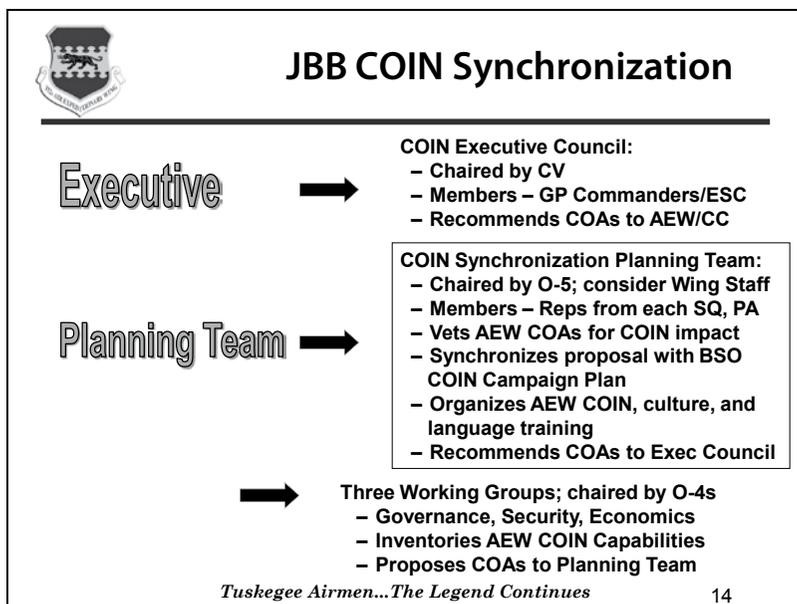


Figure 8.1. JBB COIN synchronization structure. (From Lt Col Shannon W. Caudill, 332nd Air Expeditionary Wing, Counterinsurgency Synchronization Briefing, September 2009.)

In addition to the synchronization construct depicted above, the 332nd AEW went further and established a formal organization structure (fig. 8.2). This structure worked well to organize the various levels of leadership and personnel into a cohesive team focused on coordinating base-level COIN activities. Prior to formalizing this structure, different base units were working virtually independent of each other, engaging in various COIN activities with the BSO. For instance, the contracting office was working with local contract venues, completely unaware of the adverse impacts those contractual arrangements were having on the battlespace outside the fence line. The medical community, engaged in treating trauma injuries among local populations and interacting with local hospitals, was not working in concert with ongoing efforts of the BSO to enhance medical sustainment capabilities within the local communities. The Kids' Day events, where local children were invited to attend informational and recreational activities on the base, were not being coordinated with the BSO, who could have been using these events to help foster the overall COIN campaign efforts.

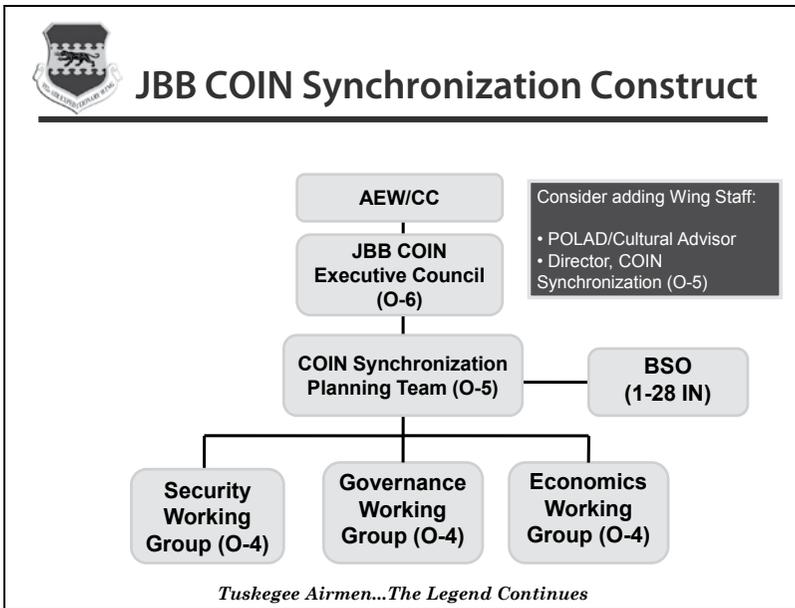


Figure 8.2. 332nd AEW organization structure. (From Lt Col Shannon W. Caudill, 332nd Air Expeditionary Wing, Counterinsurgency Synchronization Briefing, September 2009.)

The 532nd Expeditionary Security Forces Squadron commander, Lt Col Shannon Caudill, developed the formal wing COIN synchronization structure adopted by the 332nd AEW commander. This structure orchestrated the various COIN support activities on the base and helped foster a tremendous working relationship with the BSO. The end result was a thoroughly coordinated and synchronized effort enhancing the joint execution of the BSO’s COIN campaign. The USAF should either adopt this structure as is or use it as a baseline for development of similar organization structures. Importantly, the USAF’s new IW doctrine recognized some of the positive lessons of Joint Base Balad, Iraq, including the importance of partnering with the ground BSO for Airmen to synchronize with joint partners in a COIN environment:

The 332d (Expeditionary) Security Forces Group (SFG) at Joint Base Balad, Iraq, provided inside and outside-the-wire security to ensure force protection, dominating the base boundary to ensure successful sortie generation. The SFG coordinated closely with the battlespace owner (US Army) to ensure information sharing and the seams in the defense were covered. The SFG also inte-

grated organic air ISR assets to aid aggressive patrolling to further enhance base defense efforts. Finally, Security Forces and OSI were able to establish and leverage existing human networks to gauge US COIN efforts at various mass gatherings in and around the base boundary. The combined COIN and HUMINT efforts of the entire 332d Air Expeditionary Wing resulted in an overall decrease of indirect fire attacks against the base by more than 50 percent.²⁸

While the new doctrine highlights this short vignette, the USAF would do well in taking COIN guidance one step further by creating a COIN handbook or manual with more specificity for Airmen to use as templates for future conflict. The current guidance, while much improved, simply lacks the information about lessons learned and organizational templating that will better enable Airmen to operate in a future COIN campaign.

Conclusion

Today's battlespace environment has changed significantly from its traditional linear battlefield to a nonlinear one with a host of asymmetrical threats strewn throughout. In this dynamic environment, the emergence of new missions has become the norm. Operation Iraqi Freedom highlighted the challenges of operating in an insurgent environment and the need for coalition forces to adapt to COIN techniques. The reemergence of COIN and IW as important capabilities has taught our military forces several valuable lessons. There is little doubt that airpower plays a pivotal role in supporting COIN operations. However, from the ground perspective, there appears to be a significant seam in the USAF preparation and ability to conduct ground-based COIN operations using Airmen, despite the fact that the USAF has been and currently is engaged in both direct and indirect support of ongoing COIN operations. The typical air-mindedness approach to presenting USAF air and space power to combatant commanders has lost sight of the fact that Airmen are engaged in COIN operations on the ground. The USAF must overcome these obstacles. As Robert McLaughlin points out, "It is imperative that military leaders at all levels become experts at operating as counter-insurgents."²⁹ In an attempt to build institutional expertise in COIN, this analysis provides the USAF with three recommendations. First, the USAF guidance on COIN operations needs greater specificity to provide Airmen a better starting point for a future COIN operation. The new IW guidance states that

much confusion exists between irregular warfare and counterinsurgency (COIN), as these two terms are often used interchangeably to describe conflicts that are other than traditional. IW is defined as “a violent struggle among state and non-state actors for legitimacy and influence over the relevant population(s). IW favors indirect and asymmetric approaches, though it may employ the full range of military and other capacities, in order to erode an adversary’s power, influence, and will.” COIN, on the other hand, is a specific subset of IW involving civilian and military efforts taken to defeat an insurgency and address core grievances. Irregular warfare is a much wider-ranging umbrella concept that covers multiple areas of non-traditional warfare.³⁰

While the new IW guidance states that COIN is a specific “subset,” it fails to provide meaningful guidance to spell out the operational concerns and best practices for this subset. For instance, AFDD 3-2, which covers all aspects of IW and its subsets, is only 60 pages in length, while joint and sister service COIN-specific doctrine is 249 pages (JP 3-24) and 282 (FM 3-24) pages, respectively. The USAF should develop a stand-alone COIN doctrine document that focuses more narrowly on the kinetic and nonkinetic roles air and space power contribute to COIN operations, while simultaneously providing guidance to the Airmen on the ground engaged in the COIN effort.

Second, adjustments in EST need to be made, providing specific COIN training for all Airmen deploying to COIN operational environments. James Corum stated that “the United States and its allies must put more effort into small wars training” and that “the US military education system, especially the staff colleges and senior service schools, need to spend a good deal more time addressing the issue of small wars.”³¹

Finally, the USAF needs to develop and adopt a formal wing-level COIN synchronization construct in order to execute COIN support missions on the ground effectively. While the new COIN doctrine heralds the COIN efforts of the 332nd Air Expeditionary Wing, Joint Base Balad, Iraq, it has not implemented a new organizational template to include manpower for COIN expertise, cultural advisors, or liaisons. Without such changes, the USAF is doomed to repeat the same problems with synchronization and will be unable to fully frame the operational environment in which it operates.

In summary, the USAF’s current COIN guidance and organizational template for operating in a COIN environment are not on the appropriate glide slope. The time is now for the USAF to codify the hard-earned lessons of Iraq and Afghanistan COIN operations by providing better COIN predeployment training, updating its organi-

zational structure to include more COIN-trained liaisons to improve synchronization with friendly ground forces, and publishing more specific and relevant guidance for Airmen operating in the ground dimension. With these necessary changes in hand, the USAF will be postured to be a better joint partner and more effective fighting force in future COIN campaigns.

Finally, the US military is in the midst of its “rebalance” or “pivot” to the Asia-Pacific. Some military leaders want to forsake COIN and IW capabilities because they believe the focus of US military planning and investment will be laser-like on the Pacific at the exclusion of the Middle East and IW, but that shows a fundamental misunderstanding of the DOD’s guidance and an ignorance of insurgency. The department’s new strategic guidance unveiled in January 2012 stated that the US “will have a global presence emphasizing the Asia-Pacific and the Middle East.”³² Additionally, according to Dr. William Dean, the aforementioned Air Force COIN scholar, there are over 26 insurgent movements in the Asia-Pacific at the writing of this essay.³³ With these facts in mind, Airmen must continue to improve and refine their ability to conduct war in a complex, insurgent environment—not ignore its importance only to repeat the same mistakes again in a future conflict. More must be done to prepare Airmen for the next COIN campaign, or needless blood and treasure will be wasted as we relearn lessons we should have codified and incorporated as core competencies.

Notes

1. Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 15 November 2008, amended 15 November 2012, 71.

2. Aeneas R. Gooding, “Doing It All: Security Forces—The USAF COIN Force?” (thesis, School of Advance Air and Space Studies, Air University, Maxwell AFB, AL, 2009), 25.

3. The term “battlespace owner” is not an approved joint or service term, but JBB’s joint forces and ground force commander used it to describe his authority over the geographic area surrounding the base. The term has been used by the Joint Warfighting Center and United States Joint Forces Command and has been utilized in numerous joint and military publications.

4. JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 95.

5. Kenneth Bebbe, “The Air Force’s Missing Doctrine: How the US Air Force Ignores Counterinsurgency,” *Air & Space Power Journal* 20, no. 1 (Spring 2006): 28.

6. William Dean, III, faculty, Air Command and Staff College, e-mail correspondence with Col Shannon W. Caudill, 15 May 2013.

7. Glen E. Christensen, "Air Base Defense in the Twenty-First Century" (monograph, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, Kansas, May 2007), 8.
8. James S. Corum and Wray R. Johnson, *Air Power in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 423–39.
9. James S. Corum, "Air Power in Small Wars: Current Operations," *Baltic Security & Defence Review* 12, no. 1 (2010), 138.
10. Ibid.
11. Ibid., 140.
12. Ibid., 93.
13. Charles J. Dunlap, Jr., "Developing Joint Counterinsurgency Doctrine: An Airman's Perspective," *Joint Force Quarterly* 49, no. 2 (2008): 86.
14. Ibid., 87–88.
15. Charles J. Dunlap, Jr., "Air-Minded Considerations for Joint Counterinsurgency Doctrine," *Air & Space Power Journal* 21, no. 4 (Winter 2007): 64.
16. Joint Publication (JP) 3-24, *Counterinsurgency Operations*, 5 October 2009, iv.
17. Air Force Instruction (AFI) 36-2201, *Air Force Training Program*, 15 September 2010, 94.
18. Ibid.
19. Ibid., 94.
20. Ibid., 96.
21. Ibid. Tier 4 was dropped when this AFI was updated on 8 March 2011.
22. Air Force Doctrine Document (AFDD) 3-2, *Irregular Warfare*, 15 March 2013, Summary of Changes.
23. Ibid., vi.
24. Ibid., 4.
25. US Marine Corps, Fleet Marine Force Reference Publication (FMFRP) 12-15, *Small Wars Manual*, 1940, 41.
26. Corum and Johnson, *Air Power in Small Wars*, 437–39.
27. Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (Bloomington: Indiana University Press, 1964), 5–7.
28. AFDD 3-2, *Irregular Warfare*, 34.
29. Robert F. McLaughlin, "Counterinsurgency and the Surge in Iraq: Balancing Doctrine and Strategy" (master's research paper, US Army War College, Carlisle Barracks, PA, 2009), 3.
30. AFDD 3-2, *Irregular Warfare*, 2–3.
31. Corum and Johnson, *Air Power in Small Wars*, 437, 439.
32. Leon Panetta, secretary of defense, "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense," 5 January 2012, 5, http://www.defense.gov/news/Defense_Strategic_Guidance.pdf.
33. William Dean III, faculty, Air Command and Staff College, interview with Col Shannon W. Caudill, USAF, 24 May 2013.

PART 4

Organizing for the Future

Chapter 9

Nowhere to Hide

The Growing Threat to Air Bases

Shannon W. Caudill
Benjamin Jacobson

Wearing US Army uniforms, the attackers penetrated the air base's defenses under the cover of night. Armed with rifles, rocket-propelled grenade launchers, and suicide vests, the 14-man team began its deadly mission against an air base in Helmand Province, Afghanistan, jointly manned by the North Atlantic Treaty Organization's (NATO) International Security Assistance Force (ISAF). Hours of combat ensued, and the morning light revealed the destruction of six McDonnell Douglas AV-8B Harrier II ground-attack aircraft and six refueling stations and damage to two other aircraft and six aircraft hangers.¹ In the aftermath, 14 insurgents and two US Marines lay dead while eight coalition military members and one contractor were wounded. In September 2012 this insurgent operation constituted the most successful ground attack against ISAF's air assets to date in the Afghanistan conflict.

Italian general Giulio Douhet's observations regarding the fragility of aircraft on the ground still rings true today, as the aforementioned Helmand air base attack demonstrates.² Indeed, poorly defended air bases will continue to be susceptible to organized ground assaults. Previously, the most successful post-Vietnam air base attack occurred during El Salvador's civil war in 1982, when 100 insurgents attacked an El Salvadoran air force base, destroying five Dassault M.D.450 Ouragan jet fighter-bombers, six Bell UH-1B Iroquois helicopters, and three Douglas C-47 Skytrain military transport aircraft while damaging five more platforms. Clearly, this "well-planned and executed operation . . . demonstrated the tactical superiority" of the insurgents against the government's base defense force.³

Protecting air bases and air and space assets in the future will become exponentially more complex and expensive due to the promulgation of technology, abundance of open-source intelligence, and growth in adversary capabilities. Looking forward, we see that tradi-

tional threats such as airborne assault, indirect fire (IDF) through rockets and mortars, and direct attack by suicide squads will continue as staples of potential enemy action. Consequently, we must examine emerging threats that enable new modes of air base attack, including the development of precision munitions, the spread of remotely piloted vehicles, the proliferation of shoulder-launched surface-to-air missiles (SAM), an escalating insider threat, and other variants of a new technological bounty for terrorists and insurgents. The defense of air assets will become even more problematic in the face of a spectrum of threats enabled by technology and an accelerating insider threat. This growth and proliferation of technology will enable small groups to gain an even greater advantage against base defenders and air operators.

Certainly, Airmen need to thoughtfully consider the high probability of these emerging threats and the associated costs of ensuring continued operations. Formerly, a service member and a rifle filled a gap in a sector of base defense. Well-defended air bases drive the enemy to explore alternative means of affecting air operations. Naturally, any rational actor desires the quickest, cheapest route to success after selecting a target. If he does not seek a spectacular attack designed to produce casualties and dramatic television footage (as espoused by groups such as al-Qaeda), then he will likely wish to impede air operations and bleed the base dry through harassment that produces casualties over time.

When examining the threat, however, we must constantly ask ourselves what the enemy will target because it is not necessarily aircraft on the ground. Targets and objectives depend upon the attackers, ranging from terrorist groups to conventional forces to special operations, and upon the political objectives and actual capabilities that they can bring to bear against an air base. In Vietnam, enemy forces found ground attacks against airfields a drain on their resources. As a result, they adapted to disrupt air operations rather than attack airfields directly because “whether the raids resulted in aircraft, facility, or runway damage, sortie rates were impaired. Standoff weapons [IDF in today’s parlance], as well as various forms of command-detonated explosives, soon became the weapons of choice amongst the many belligerents engaged in conflict since the 1960s.”⁴

The threat of terrorism has driven most base-defense operations to focus on the defeat of vehicle-borne improvised explosive devices (VBIED). Top-tier terrorist groups have long desired headline-

grabbing attacks that are big on visual imagery, shock, and body count. Images of the US Marine barracks in Beirut, Lebanon, or the US Air Force's (USAF) Khobar Towers in Khobar, Saudi Arabia, became the adversary's desired outcome of an attack. We see the same intent at play in the Taliban's detonation of a truck bomb on the 10th anniversary of 11 September 2001—a strike that wounded 89 people, including 77 Soldiers.⁵ This chapter examines some of the more alarming threats—such as VBIEDs, which we expect the enemy to continue to use in future attacks—and the emerging technology that could enable him to assail our air bases.

The Growing Precision of Indirect Fire

IDF has become the popular choice among insurgents for attacking an air base. Fired at a distance and often rigged to fire after the attacker has departed, it offers a degree of survivability. In Vietnam, Viet Cong and North Vietnamese forces hit US air bases 475 times between 1964 and 1973, primarily with IDF, destroying 99 US and South Vietnamese aircraft and damaging 1,170.⁶ In Iraq, insurgents used IDF to harass air bases, but it proved largely ineffective because of a poorly trained enemy and active external base defenses. In Afghanistan the enemy employed IDF not only to harass coalition forces but also to mask and cover ground attacks. On 22 August 2012, enemy forces even managed to damage the aircraft of the visiting chairman of the Joint Chiefs of Staff.⁷

Mortars and rockets, aimed at a base by attackers with limited targeting information, rely on the technical expertise of the operator—factors that hinder their overall effectiveness. However, a new age in precision IDF weapon systems is now upon us. On 31 March 2011, Soldiers from the 4th Brigade Combat Team fired a 120 mm precision-guided mortar round from Forward Operating Base Kush-amond, Afghanistan, hitting within four meters of the target.⁸ Normally a mortar fires a “dumb” round—one that has no onboard guidance system. Over time, this technology will likely spread to insurgent and terrorist groups, improving their ability to pick and choose targets with extraordinary accuracy and making aircraft and key facilities much more vulnerable.

Defeating this type of weapon system demands a truly integrated technological defense. Both the United States and Israel have pio-

neered defensive systems designed to counter the increased precision of IDF weapons. In Iraq, Joint Base Balad and other locations used a jointly manned counterrocket artillery mortar system to defend against enemy IDF. The defense establishment will need to ensure a comprehensive defense system in the future because precision rounds will make base attack much simpler and give defending forces less margin for error. Moreover, the capability of this defense technology is improving. For instance, during the November 2012 Israeli conflict with Hamas in Gaza, Palestinian militants launched more than 1,500 rockets at Israel; however, that country's Iron Dome, a "portable anti-rocket system built to take down short-range missiles," intercepted about 400 of them.⁹ This system may offer a template for a portable defense system for air operations. Should precision IDF rounds become part of the operational environment, our Airmen will not have the luxury of an enemy's incompetent firing of dumb rounds.

Remotely Piloted Vehicles

Military planners contemplating air base defense must consider the threats posed by remotely piloted vehicles (RPV) by formulating a plan to tackle a range of remote threats, both ground and airborne. Who is cleared to engage such vehicles and with what weapons? For ground-based vehicles, the answer is more clearly defined and in line with established contingencies; however, a defensive gap may exist in protecting against airborne threats. The fact that we have yet to fully explore protocols for these defenses leaves a seam that a technologically savvy enemy could exploit. We must develop modeling, simulation, and defenses to account for these new threats before a protest group disrupts flying operations or—worse yet—before a terrorist organization uses RPVs for reconnaissance or attacks against our air assets.

The use of the vehicles (RPVs, robots, drones, etc.) is moving beyond exclusively military use. After all, civilians have flown remote-controlled airplanes since the 1930s. Today, though, the sophistication, range, and video capability allow civilians to access technology once reserved only for military and intelligence organizations. Take the case of the protest group Showing Animals Respect and Kindness (SHARK). This group planned to use a Mikrokopter drone to videotape a live pigeon shoot as a means of deterring and interfering with

a legal hunting outing. On 21 February 2012, SHARK set up operations at Broxton Bridge Plantation near Ehrhardt, South Carolina. Law enforcement officers and a local attorney tried to prevent the protest group from flying its drone, but the group flew anyway, only to have hunters on the scene shoot down the drone.¹⁰

This same technology is capable of carrying weapons or conducting reconnaissance for groups targeting an airfield. Indeed, it has already done so. For example, although US policy makers have concerned themselves with al-Qaeda in recent years, Hezbollah has proven itself to have global reach and staying power. It is credited as the first terrorist group to pioneer the use of suicide bombers as a weapon of mass destruction, delivering large vehicle bombs to specific targets.¹¹ Hezbollah has recently shown technological prowess through its use of explosive-laden RPVs and missile technology, even managing to cripple an Israeli warship.¹² The success of the organization comes from its financial and logistical backing by Syria and Iran, the latter supplying advanced weapons and reconnaissance equipment.

Starting in November 2004, Hezbollah shocked Israelis by launching an RPV, the Mirsad 1, which flew over Israeli towns and returned to Lebanon unharmed. At a Hezbollah rally, the organization's leader, Hassan Nasrallah, exclaimed, "You can load the Mirsad plane with a quantity of explosive ranging from 40 to 50 kilos and send it to its target. . . . Do you want a power plant, water plant, military base? Anything!"¹³ No doubt this technology will spread to other terrorist and protest groups over time.

To punctuate this point, examine the case of Rezwana Ferdaus, a 26-year-old US citizen. Authorities arrested her on 28 September 2011, charging her with plotting to attack the Pentagon and US Capitol with "large remote controlled aircraft filled with C-4 plastic explosives" and providing "material support and resources to a foreign terrorist organization, specifically to al Qaeda."¹⁴ According to the Federal Bureau of Investigation, Ferdaus planned to couple her "aerial assault" by three explosive-laden drones with a ground attack that included "six people, armed with automatic firearms and divided into two teams." Ferdaus explained that "with this aerial assault, we can effectively eliminate key locations of the P-building [Pentagon] [and] then we can add to it in order to take out everything else and leave one area only as a squeeze where the individuals will be isolated, they'll be vulnerable and we can dominate."¹⁵

Proliferation of Shoulder-Launched Surface-to-Air Missiles

A flying wing can realize mission success only by generating aircraft sorties, regardless of threats from the operational environment. Protecting aircraft from SAMs during takeoff, the most vulnerable phase of flight, is extremely challenging due to constraints on their maneuverability caused by weight and low altitude. Consequently, heavy transport aircraft and their valuable cargo, possibly munitions and/or passengers, present extremely tempting targets during take-off. Conversely, aircraft on approach are short on fuel and must maintain predictable speeds and flight paths. In either case, SAMs represent a threat to such aircraft. For instance, rebels in the current Syrian conflict allegedly possess some “fifteen to thirty SA-7 man-portable air-defense systems [MANPADS]” and have “reportedly shot down at least five rotary-wing and six fixed-wing aircraft,” claiming at least one downed by a MANPADS.¹⁶ According to the USAF Counterproliferation Center, “Currently, 27 terrorist groups including Al Qaeda have confirmed or reported possession of MANPADS. Since 1994, there have been ten high profile attempts to target commercial aircraft with four being shot down—including one carrying the Presidents of Rwanda and Burundi. Furthermore, MANPADS fit Al Qaeda’s mode of operation perfectly and are relatively easy to use, convenient to transport, widely available, inexpensive, and certainly lethal.”¹⁷

As technologies developed by foreign competitors continue to advance and proliferate, integrated defense tactics, techniques, and procedures for integrated base defense will have to keep up with their employment. Recently the Russian-made KBM SA-24 “Grinch” MANPADS proliferated to Venezuela, Libya, and Syria.¹⁸ Of course, Libya’s government has been deposed, and at this writing, Syria remains in a state of civil war. The security of MANPADS in such war-torn countries remains doubtful as potential black markets develop and instability attracts nefarious elements. The threat of MANPADS to future US and coalition forces as well as civilian airline operations will likely rise as these systems become more accessible in the fertile ground of civil war and insurgency.

The Expanding Insider Threat

For the foreseeable future, US and coalition forces will operate amid insider threats. In Afghanistan from 2007 to 2011, Pentagon statistics reveal a total of 42 attacks by members of the Afghan National Security Forces on US and NATO personnel, killing 70 coalition troops and wounding 110 others.¹⁹ One of the most egregious and horrific instances of an insider threat occurred on the morning of 27 April 2011, when an Afghan air force captain killed eight US Airmen and one contractor at Kabul International Airport.²⁰ Another incident demonstrated how a determined and crafty suicide bomber could infiltrate a Central Intelligence Agency base in eastern Afghanistan and kill eight Americans.²¹ This disturbing trend intensified in 2012 as uniformed Afghan security forces conducted 46 insider attacks against coalition forces, which killed 60 NATO personnel.²²

More troubling still is the growing threat from within the ranks of US personnel. On 11 May 2009, a US Soldier killed five fellow-American military members at a military counseling center in Camp Liberty, Baghdad.²³ On 5 November 2009, a US Army psychiatrist stationed at Fort Hood, Texas, opened fire on his fellow Soldiers, resulting in the death of 13 people and wounding of 32 others.²⁴ The Department of Homeland Security (DHS) is concerned about the threat that veterans could mount in the homeland, noting that extremists and terrorists will “attempt to recruit and radicalize returning veterans in order to exploit their skills and knowledge derived from military training and combat . . . to carry out violence.”²⁵

It is important to remember that one person can do a great deal of harm—witness the numerous “lone wolf” incidents that have occurred in recent years. On 22 July 2011, Anders Breivik, a Norwegian, set off a vehicle bomb near government buildings in Oslo, killing eight, and then massacred 69 people at a youth camp on the nearby island of Utoya.²⁶ On 20 July 2012, American James Holmes walked into a sold-out movie theater near Denver and began shooting; he killed 12 and wounded 58.²⁷ Trained and experienced US military members and veterans could wreak even greater havoc. Whether stateside or overseas, commanders must ensure that they provide and exercise a comprehensive interior security plan—one that includes an aggressive psychological screening program to identify insider threats.

Obtaining Maps of Air Bases

Enemy forces planning a ground assault of an air base used to rely on collaborators who had access to the target base to facilitate the mapping of terrain and key facilities, as well as attain pace counts that enable IDF attacks. Today the information superhighway offers access to satellite imagery and other open source intelligence that conspire to make the job of a would-be attacker much easier. One such website, that of the Federation of American Scientists (FAS), describes itself as “an independent, nonpartisan think tank and registered 501(c)(3) non-profit membership organization . . . dedicated to providing rigorous, objective, evidence-based analysis and practical policy recommendations on national and international security issues connected to applied science and technology.”²⁸ GlobalSecurity.org, an offshoot of FAS founded by John Pike, one of its former members, claims to be “the leading source of background information and developing news stories in the fields of defense, space, intelligence, WMD [weapons of mass destruction], and homeland security.”²⁹ Its website features satellite images of military bases around the world, many of which the US government considers classified. Other sites, such as Google Maps, make available imagery and street maps. In sum, people now have a multitude of ways to acquire detailed maps of air bases that would facilitate attacks on those locations.

Social Media: Flash Mobs, Terrorism, and Networking Base Attacks

Instantaneous communications will dramatically improve the enemy’s information operations and base attacks, allowing him to draw upon elements of a sympathetic local populace to create situations that humiliate an air base’s leadership or overwhelm its defenses. Thus, intelligence and law enforcement must stay one step ahead of an increasingly savvy adversary by becoming more adept in their collection efforts. Basic technology, such as cell phones, has affected society in unusual ways by creating unprecedented means for communicating and coordinating actions. Take for example the phenomenon of the “flash mob,” a group of people summoned via cell phone, social media, and viral e-mails for the purpose of performing some sort of act at a specific location. The web and even commercials of

telecommunications companies are replete with footage of benign flash mobs that appear in a public place to carry out some sort of unusual or artistic act like freezing in one place or performing a coordinated dance routine. Although they do this in the name of entertainment, what happens when someone uses this same technology for nefarious purposes?

In summer 2011, for example, an epidemic of flash mobs hit Philadelphia. Planners organized the mobs to carry out robberies, assaults, looting, and chaos. These incidents included random beatings of pedestrians, a rampage through a Sears store, and assemblages of hundreds of people at designated locations designed to choke traffic. Margaret Rock, editor at Multimedia.com in Chicago, offered the following: "I don't know why, but what started out as something used for good has shown its dark side."³⁰ Later that same summer, riots in London, Birmingham, Manchester, and elsewhere developed, causing British security officials great concern. Scotland Yard identified and arrested nearly 3,000 people suspected of physically rioting or inciting violence across the country by using BlackBerry Messenger, Twitter, and Facebook.³¹ According to one text, "If you're down for making money, we're about to go hard in east London."³² David Cameron, British prime minister, observed that "everyone watching these horrific actions will be struck by how they were organized via social media. . . . So we are working with the police, the intelligence services and industry to look at whether it would be right to stop people communicating via these websites and services when we know they are plotting violence, disorder and criminality."³³

The rapid pace of technological advancement has spread to every corner of the globe. Cell phones are now powerful computers in their own right, networking with other devices globally. Nowhere is this more apparent than in developing countries that had poor communications because of the cost of hard-wiring infrastructure for landlines. Cell phones now make that expense moot since towers and satellites allow such countries to plug into the global communications grid. As of 2008, 80 percent of the world's population had access to a cellular network, and by the end of 2006, developing countries bought 68 percent of the world's mobile phones.³⁴

The same technology that enables global information sharing and advancement also supports the networking of terrorist and criminal groups. According to a new study by Israel's University of Haifa, al-Qaeda, Hamas, Hezbollah, and the like have invested in social net-

working such as Facebook and Twitter to recruit, raise funds, and gather intelligence. Prof. Gabriel Weimann, author of the study, argues that “today, about 90 per cent of organized terrorism on the internet is being carried out through social media” and that the latter is “enabling the terror organizations to take initiatives by making ‘friend’ requests, uploading video clips and the like and they no longer have to make do with the passive tools available on regular websites.”³⁵

How will this technology and social networking affect base security in the future? Protestors, mobs, and terrorist groups could easily be summoned with no prior notice to military intelligence or law enforcement, quickly assembling near a base’s entry-control point or perimeter to protest, riot, or attack. In many instances, such areas would have only a handful of guards available to counter the assembled groups—a scenario that could easily overwhelm the few personnel on scene and escalate beyond their capacity to quell such action.

Cyber Attacks: A Potential “Easy Button” for Air Base Attack

Technological advances have pushed the US military into a “cyber force” largely dependent upon a network of computers and communications links to ensure not only the effective use of forces during contingency operations but also the day-to-day mission of force preparation and training. Thus far, insurgent forces have lacked the capability and training to conduct large-scale cyber attacks against military installations. However, that will likely change as state-sponsored terrorist organizations and insurgent forces partner to defeat a common enemy. Utilizing a cyber attack that affects air operations or base-defense sensors and cameras to facilitate a kinetic strike may be a cost-effective and efficient choice.

Attacks via cyberspace could result in degraded flight operations, as occurred at the Indira Gandhi International Airport when a malicious code, utilizing scripts specifically designed to exploit that system’s weakness, shut down check-in counters and boarding gates and significantly affected operations.³⁶ A similar assault could disrupt air-traffic-control nodes, networked maintenance schedules, and training operations as well as threaten armed or unarmed RPVs operated by the USAF and other government agencies. Take for example the recent hacking of a drone similar to those operated by the DHS as

part of a bet between a Texas college professor and his students. For less than \$1,000, this team successfully “spoofed” the RPV, effectively “re-missioning” it.³⁷ This low-budget academic prank demonstrates how easily an adversary or terrorist group could re-mission RPVs and turn them into flying missiles against an air base or other target.

Red Flag, the USAF’s combat-training exercise involving US and allied forces, has integrated cyber and space elements from the USAF Space Command to address effects associated with attacks on cyber and space assets. At the March 2011 Red Flag, a USAF official commented, “We know many threats around the world are working diligently to access, corrupt, or deny our use of [both unclassified and classified computer systems].”³⁸ Assets and personnel associated with integrated defense systems may also become targets. Moreover, adversaries might attempt to disrupt or manipulate the increasing use of cyberspace for communications, including encrypted radio transmissions, classified and unclassified messaging, and biometric identification systems at our access gates. A *Washington Post* investigation found that certain types of software platforms used by government and the private sector—including a Tridium company system called Niagara—are more vulnerable than others. Marc Petock, Tridium’s vice president for global marketing and communications, noted that “some Defense Department facilities in the United States also depend on Niagara. That includes the giant Tobyhanna Army Depot in Pennsylvania” and some “high security” military facilities.³⁹

The rapidly evolving cyber domain promises many benefits: reduced manpower requirements, increased efficiency, better targeting, and ease of access/use. However, these same technologies present significant opportunities for a clever and determined adversary to create a back door through which he can penetrate and defeat the entire security system.

Marrying Modern Technology with Special Forces

Not too long ago, planners at NATO bases concentrated on the USSR’s plans to attack air bases. During the Cold War, the Soviets explored a number of ways to assault and disable bases, primarily by employing the *Spetsnaz* (special forces). A review of the *Spetsnaz* airfield-attack profiles in declassified Cold War-era Central Intelligence Agency reports would prove useful because they provide in-

sights into methods for direct strikes on these targets. These included the airdrop near an air base of 30 special operators, who then broke into “four operations teams, each team with specific responsibilities including capturing vehicles and personnel for the purpose of infiltrating the target [air base],” using SAMs and explosive devices to destroy aircraft.⁴⁰ Additionally, “in a second method, a Spetsnaz company (approximately 10 teams of five to 12 men) operated against a heavily defended airfield. The company could not get closer than 2 to 3 km to the target. During the first night Block Strelas [three-tubed SAM launchers mounted on a tripod] were positioned as close as possible to either end of the field, and then attacks were initiated against pipelines, powerlines, communication lines, security personnel, and crews heading toward the airfield.”⁴¹ This would disrupt airfield operations, create the impression that a larger Soviet force was in the area, and draw more NATO forces in for defense and away from the front lines. Imagine well-trained enemy special forces enabled by many of the aforementioned technological advances. Base defense would become incredibly difficult, and the complexity of countering the threat would escalate significantly.

Conclusion

Understanding and countering these growing threats will play a major role in the ability to project airpower effectively in the future. One solution—basing aircraft as far from hostilities as possible—strains aircraft and aircrews with longer flight times. However, it does not address the likely requirement that mobility aircraft land near or in the combat zone to support ground operations. Nor does remote basing speak to the technological means of attack through cyberspace, technologically enabled terrorists, or special forces hitting a presumably safe air base. Thus, Airmen must conduct a truly full-spectrum threat analysis and take into account these potential vulnerabilities in force-protection planning.

Aircraft are extremely fragile. One well-placed mortar round can render several hundred million dollars’ worth of aircraft worthless or can wipe out a barracks occupied by essential personnel such as the pilots or aircraft technicians. The USAF and coalition forces will have to make hard choices about base defense driven by mission requirements, economic constraints, and the rising threat posed by a deter-

mined enemy enabled by some of the aforementioned technology. Airmen and joint leaders must either stay abreast of these issues during the interwar period or risk the elimination and degradation of air assets at the onset of the next hard-fought campaign.

Notes

1. Barbara Starr, Chris Lawrence, and Joe Sterling, "ISAF: Insurgents in Deadly Attack in Afghanistan Wore U.S. Army Uniforms," *Cable News Network (CNN)*, 15 September 2012, <http://www.cnn.com/2012/09/14/world/asia/afghanistan-fatal-attack/index.html>.
2. Giulio Douhet, *The Command of the Air*, trans. and ed. Dino Ferrari, Joseph P. Harahan, and Richard H. Kohn (Tuscaloosa: University of Alabama Press, 2009), 53–54.
3. James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University Press of Kansas, 2003), 334–35.
4. Michael Buonaugurio, "Air Base Defense in the 21st Century: USAF Security Forces Protecting the Look of the Joint Vision" (master's thesis, Marine Corps Command and Staff College, 2001), 8.
5. Jeremy Kelly, "NATO Military Base Attacked by Suicide Bomber in Afghanistan," *Guardian* (UK), 11 September 2011, <http://www.guardian.co.uk/world/2011/sep/11/us-base-suicide-bomber-afghanistan>.
6. Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND, 1995), 68, http://www.rand.org/content/dam/rand/pubs/monograph_reports/2006/MR553.pdf.
7. Barbara Starr, "Shrapnel Hits Joint Chiefs Chairman's Plane at Afghan Base," *CNN*, 21 August 2012, http://articles.cnn.com/2012-08-21/asia/world_asia_afghanistan-dempsey-plane_1_fight-against-afghan-green-on-blue-afghan-man-afghanistan.
8. Todd Christopherson, "Soldiers Fire First Precision-Guided Mortar in Afghanistan," *US Army Homepage*, 7 April 2011, <http://www.army.mil/article/54502/>.
9. Jennifer Rizzo, "U.S. Continues Support for Israel's Iron Dome," *CNN*, 17 May 2012, http://articles.cnn.com/2012-05-17/us/us_israel-missile-system_1_anti-rocket-iron-dome-missile-defense?s=PM:US; and Ernesto Londoño, "For Israel, Iron Dome Missile Defense System Represents Breakthrough," *Washington Post*, 2 December 2012, http://www.wpost.com/world/national-security/for-israel-iron-dome-missile-defense-system-represents-breakthrough/2012/12/01/24c3dc26-3b32-11e2-8a97-363b0f9a0ab3_story_1.html.
10. Rebecca Boyle, "After Animal Activists Track Pigeon Hunt with Drone, Pigeon Hunters Shoot Down Drone," *Popular Science*, 21 February 2012, <http://www.popsci.com/technology/article/2012-02/after-pigeon-hunt-thwarted-shooters-take-down-activist-groups-spy-drone>.
11. Daniel Helmer, "Hezbollah's Employment of Suicide Bombing during the 1980s: The Theological, Political, and Operational Development of a New Tactic," *Military Review* 4 (July–August 2006), http://www.army.mil/professionalWriting/volumes/volume4/november_2006/11_06_1.html.
12. Internet Archive Wayback Machine, "Four Israeli Troops Missing after Warship Hit," *CNN*, 15 July 2006, <http://web.archive.org/web/20060721104952/http://www.cnn.com/2006/WORLD/meast/07/14/mideast/index.html?>

13. Lisa Myers, "Hezbollah Drone Threatens Israel," *NBC News*, 12 April 2005, <http://www.msnbc.msn.com/id/7477528/ns/nbcnightlynews/t/hezbollah-drone-threatens-israel/>.

14. "Massachusetts Man Charged with Plotting Attack on Pentagon and US Capitol and Attempting to Provide Material Support to a Foreign Terrorist Organization," press release, Federal Bureau of Investigation, 28 September 2011, <http://www.fbi.gov/boston/press-releases/2011/massachusetts-man-charged-with-plotting-attack-on-pentagon-and-u.s.-capitol-and-attempting-to-provide-material-support-to-a-foreign-terrorist-organization>.

15. Ibid.

16. Eddie Boxx and Jeffrey White, "Responding to Assad's Use of Airpower in Syria," Washington Institute for Near East Policy, 20 November 2012, <http://www.washingtoninstitute.org/policy-analysis/view/responding-to-assads-use-of-air-power-in-syria>.

17. James C. "Chris" Whitmire, *Shoulder Launched Missiles (a.k.a. MANPADS): The Ominous Threat to Commercial Aviation*, Counterproliferation Papers, Future Warfare no. 37 (Maxwell AFB, AL: USAF Counterproliferation Center, Air University, December 2006), 1, <http://cpc.au.af.mil/PDF/monograph/manpads.pdf>.

18. David Fulghum and Robert Wall, "Russia's SA-24 'Grinch' Lands in Insurgent Hands," *Aviation Week and Space Technology*, 12 March 2012, http://www.aviationweek.com/Article.aspx?id=/article-xml/AW_03_12_2012_p27-433282.xml&p=1.

19. Anna Mulrine, "Taliban Infiltrators in Afghanistan? Pentagon Warns of 'Insider Threat,'" *Christian Science Monitor*, 1 February 2012, <http://www.csmonitor.com/USA/Military/2012/0201/Taliban-infiltrators-in-Afghanistan-Pentagon-warns-of-insider-threat>.

20. Jill Laster, "Motive in Kabul Shooting Deaths Remains Elusive," *Air Force Times*, 17 January 2012, <http://www.airforcetimes.com/news/2012/01/air-force-motive-in-kabul-shooting-deaths-remains-elusive-011712/>.

21. Joby Warrick, "Suicide Bomber Attacks CIA Base in Afghanistan, Killing at Least 8 Americans," *Washington Post*, 31 December 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/30/AR2009123000201.html>.

22. "What Lies behind Afghanistan's Insider Attacks?," *British Broadcasting Corporation* (BBC), 11 March 2013, <http://www.bbc.co.uk/news/world-asia-19633418>.

23. Timothy Williams, "U.S. Soldier Kills 5 of His Comrades in Iraq," *New York Times*, 11 May 2009, http://www.nytimes.com/2009/05/12/world/middleeast/12iraq.html?_r=2.

24. Joseph I. Lieberman and Susan M. Collins, *A Ticking Time Bomb: Counterterrorism Lessons from the U.S. Government's Failure to Prevent the Fort Hood Attack*, special report (Washington, DC: US Senate Committee on Homeland Security and Governmental Affairs, February 2011), <http://www.hsgac.senate.gov/download/fort-hood-report>.

25. Janet Napolitano (Secretary of Homeland Defense), interview by John King, transcript, *CNN*, 19 April 2009, <http://transcripts.cnn.com/TRANSCRIPTS/090419/sotu.01.html>.

26. "Anders Breivik Describes Norway Island Massacre," *BBC*, 20 April 2012, <http://www.bbc.co.uk/news/world-europe-17789206>.

27. M. Alex Johnson and Pete Williams, "Cops: Weeks of Planning Went into Shootings at Colo. Batman Screening," *NBC News*, 20 July 2012, http://usnews.nbcnews.com/_news/2012/07/20/12850048-cops-weeks-of-planning-went-into-shootings-at-colo-batman-screening?lite.

28. "About FAS," Federation of American Scientists, <https://www.fas.org/about/index.html>.

29. "Company History," GlobalSecurity.org, 2013, <http://www.globalsecurity.org/org/overview/history.htm>.

30. John Timpane, "Flash-Mob Violence Raises Weighty Questions," *Philadelphia Inquirer*, 14 August 2011, http://articles.philly.com/2011-08-14/news/29886718_1_social-media-flash-mob-facebook-and-other-services.

31. Neil Lancefield, "3,000 Arrests in London Riots Investigation," *The Independent* (UK), 7 October 2011, <http://www.independent.co.uk/news/uk/crime/3000-arrests-in-london-riots-investigation-2366933.html>.

32. Timpane, "Flash-Mob Violence."

33. Josh Halliday, "David Cameron Considers Banning Suspected Rioters from Social Media," *Guardian* (UK), 11 August 2011, <http://www.guardian.co.uk/media/2011/aug/11/david-cameron-rioters-social-media>.

34. Sara Corbett, "Can the Cellphone Help End Global Poverty?" *New York Times*, 13 April 2008, <http://www.nytimes.com/2008/04/13/magazine/13anthropology-t.html?pagewanted=all>.

35. "Terrorist Groups Recruiting through Social Media," *Canadian Broadcasting Corporation News*, 10 January 2012, <http://www.cbc.ca/news/technology/story/2012/01/10/tech-terrorist-social-media.html>.

36. Rahul Tripathi, "Cyber Attack Led to IGI Shutdown," *Indian Express*, 25 September 2011, <http://www.indianexpress.com/news/cyber-attack-led-to-igi-shutdown/851365/>.

37. "Texas College Hacks Government Drone in Front of DHS," *TV-Novosti*, 27 June 2012, <http://rt.com/usa/news/texas-1000-us-government-906/>.

38. Scott McNabb, "Red Flag Cyber Operations: Part I—Isn't Red Flag a Flyer's Exercise?," Air Force Space Command, 2 March 2011, <http://www.afspc.af.mil/news/story.asp?id=123244481>.

39. Robert O'Harrow, Jr., "Tridium's Niagara Framework: Marvel of Connectivity Illustrates New Cyber Risks," *Washington Post*, 11 July 2012, http://www.washingtonpost.com/investigations/tridiums-niagara-framework-marvel-of-connectivity-illustrates-new-cyber-risks/2012/07/11/gJQARJL6dW_story.html.

40. Central Intelligence Agency, *Warsaw Pact Nonnuclear Threat to NATO Airbases in Central Europe*, NIE 11/20-6-84, 25 October 1984, 35, http://www.foia.cia.gov/docs/DOC_0000278545/DOC_0000278545.pdf. Document is now declassified.

41. *Ibid.*, 36, 39.

Chapter 10

Law Enforcement and Base Defense

Improving Interoperability to Benefit the War Fighter

Shannon W. Caudill
Bryan A. Keeling

Military interventions are actually police functions, although warlike operations often ensue.

—US Marine Corps
Small Wars Manual

Law enforcement (LE) skills are a valued commodity in a counter-insurgency (COIN) environment because they support operations outside and inside the wire. LE investigative and interview skills, police training acumen, and forensic capabilities provide many tools for targeting insurgents who conspire to attack coalition forces. However, often forgotten are the security benefits provided by law and order (L&O) operations inside the wire that use LE capabilities to disrupt and counter on-base enemy intelligence activities, deter and dismantle criminal operations pilfering coalition supplies, and mitigate the insider threat posed on the installation by enemy operatives and psychologically deranged friendly forces. In short LE expertise has become a recognized and critical enabler to the war fighter in security and stability operations and merits elevation by the Department of Defense (DOD) as an area deserving priority synchronization through the establishment of an LE principal staff assistant (PSA).

DOD LE enablers include, but are not limited to, skill sets supporting expeditionary forensics, law and order missions, sectarian violence investigations, foreign police training, and interagency LE integration and information sharing. LE has become a critical function supporting counterterrorism (CT) operations globally. Army Field

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Manual 3-24, *Counterinsurgency*, specifically mentions using military police as foreign police trainers for the following skill sets: weapons handling, small-unit tactics, special weapons employment, convoy escort, riot control, traffic control, prisoner and detainee handling and processing, police intelligence, criminal intelligence, criminal handling, and police station management. Operationally, the COIN field manual envisions LE personnel as enablers of operations by “pushing HUMINT [human intelligence] or law enforcement personnel to the battalion level and below” to “improve TAREX [target exploitation] and DOCEX [document exploitation] by tactical units,” by conducting security operations, and by operating prolonged detention activities.¹ In short, commanders increasingly view LE expertise as a critical enabler of the war fighter in irregular warfare and necessary to support the interagency effort to combat terrorism at home and abroad.

LE Capabilities Support the Base Defense: Four Vignettes

Often unnoticed or undocumented, LE skills have been critical in military operations and base security. L&O operations encompass LE activities that police, control, and protect designated populations and key resources. The goal of L&O activities is to ensure a safe and secure operational environment in the confines of the base. The experiences in Iraq and Afghanistan have only increased the relevance of L&O operations and LE capabilities in support of joint operations. Nation building, stability operations, and COIN operational environments have further demonstrated the demand for LE skills and capabilities. For instance, the Army, as the land component, required between 4,000 and 8,000 United States Air Force (USAF) security forces to conduct L&O operations at joint operating bases across Iraq due to the demand for LE capabilities in policing a diverse joint, coalition, and contractor force.²

Importantly, all services must think of L&O operations, security inside the wire, as a critical requirement to complete the overall mission. Often unappreciated, L&O operations enable a safe and secure operating environment. For USAF leaders, supporting L&O operations can pay big dividends that can prevent the pilferage of mission assets or discovery of a nexus between terrorist and insurgent ele-

ments with criminal activity on the installation. As examples, four vignettes show how LE skill sets can directly affect air operations or interior security of an installation.

In World War II, Gen William H. Tunner found himself struggling to resupply Chinese and American forces over the famed Hump—the Himalayan Mountains. The operational demands of this mission were extreme, but indigenous workers' pilferage of food and other supplies became a mission impediment. Tunner's leaders quickly adapted to this internal mission threat and created a police force to combat the theft. General Tunner described the effort as follows:

Our base at Barrackpore north of Calcutta was patrolled by one of the most unique police forces in the Army Air Force—a group of 259 Indians recruited from pension policemen, veteran soldiers, and retired Indian army officers. They were divided into four companies, one composed of Gurkhas, one of Sikhs, one of Pathans, and one of Hindus, each under the command of an American enlisted man. The American noncoms conscientiously studied the religion, customs, and language of the men in their companies, and could give them a verbal pat on the back—or chew them out—in their own language. Petty thievery decreased noticeably after the Indians began patrolling the beat.³

The security challenges of Iraq and Afghanistan have shown that bases can often be porous. For instance, in 2006 Iraq's International Zone (IZ) was home to over 36,000 coalition members and more than 5,000 Iraqis. The diverse nature of the population, plethora of armed security contractors and Iraqi civilians, and access to weaponry provided a nexus between illegal weapons sales and insurgent groups. This caught the eye of USAF investigators. Heavily defended by US Army units securing its entry control points, the IZ nonetheless was under the constant threat of internal attack due to a rampant weapons trade that included former contract personnel who set up shop in the IZ without coalition forces' authorization.

The interior security of the IZ was the responsibility of the Joint Area Support Group (JASG), which owned the IZ Police, comprised of USAF security forces conducting L&O operations. Elements of the USAF Operations of Special Investigations (AFOSI) and other LE agencies in the IZ brought forward information showing potential illegal arms sales to insurgent groups. Authorized by the JASG commander, AFOSI and the IZ Police conducted a series of raids, resulting in the expulsion of three people from Iraq, one of whom was on the US Terrorist Watchlist, and the seizure of three machine guns, 22 rifles, 75 shape charges, 22 mortar tubes with ammunition, four anti-

tank weapons, eight mines, two rocket-propelled grenade launchers, blasting caps with assorted explosives, badge-making equipment, and classified material.⁴ A Special Inspector General for Iraq Reconstruction (SIGIR) report to Congress detailed one of the raids: “The raid led to the seizure of approximately \$120,000 in cash, automatic weapons, computers, documents, and handguns. On 24 May 2006, another raid netted more than 100 AK 47s, explosives, mortars, and many other automatic weapons and ammunition.”⁵

Active security and LE means not only looking at the threats trying to attack through the exterior defenses to penetrate the base but also closely examining the activities of insiders, particularly contractors, for possible collaboration with criminal and enemy elements. In 2008 the USAF assumed the role as the base operating support integrator for Joint Base Balad (JBB) (formerly known as Logistics Support Area Anaconda and Balad Air Base), Iraq, requiring the USAF to defend the base and conduct L&O operations for the estimated 26,000 coalition and contract personnel to secure the interior.⁶ In 2009 AFOSI, the Air Provost marshal, who was responsible for L&O operations, and air base defense (ABD) leaders at JBB, discovered a black market fuel theft operation taking place on JBB with a supporting network of illegal fueling points off base, potentially funding groups with ties to a variety of anticoalition groups. Rather than execute an LE and security operation autonomously, security forces shared the investigation results with the ground battlespace owner (BSO) and other intelligence organizations. This synchronized effort led to a full analysis and targeted approach to the problem, resulting in a full understanding of the desired second- and third-order effects and avoidance of potential negative information operations themes that could be exploited by those unfriendly to the coalition. Security forces shaped the operation by arresting suspected individuals involved on base and impounding modified vehicles being used to steal fuel for delivery off base to black-market fueling points.⁷

Once the initial operations were complete at JBB, the BSO conducted operations targeting related criminal and insurgent elements outside the wire. At the end of the operation, 24 personnel were detained and transferred to the Iraqi police and court system, 21 trucks were confiscated as evidence to support the Iraqi criminal case, and over 100 local Iraqi warrants were served.⁸ The operation stopped a \$17.5 million fuel theft ring and had a highly disruptive effect on several groups with insurgent ties through the issuance of the Iraqi war-

rants.⁹ Perhaps most importantly, this operation also showed the Iraqis that US forces operated within the framework of Iraqi law, which bolstered the BSO's efforts to build and foster respect for the rule of law in Iraqi communities. Importantly, this synchronized joint operation built trust and improved cooperation between the USAF and ground BSO.¹⁰ Lt Col Keith McCormack, the commander of the operation, summed up the operational approach: "As the Air Provost Marshal at JBB, my LE team could have acted on the fuel theft immediately and stopped it within the wire; however, delaying our LE efforts and rolling all the COIN and security enablers inside and outside the wire proved huge dividends and highlighted the importance of LE operations within the larger COIN effort taking place in the overall battlespace."¹¹

Finally, the use of forensics, a mainstay of professional law enforcement for the last century, came into its own as a war-fighting imperative with the insurgent improvised explosive device (IED) campaign. Naturally, the priority of forensics work was focused on defeating IED networks—the central threat to coalition forces in Iraq and Afghanistan. However, forensics also has broad applicability to defeating indirect fire (IDF), mortars and rockets, and networks—the main threat to air base operations. In the competition for limited forensics resources, IDF was at the low end of the prioritization. The growing importance of battlefield forensics resulted in the 2008 *Capstone Concept of Operations for DOD Forensics*, which stated,

Traditionally, forensics has focused on criminal investigative, judicial, and medical functions. The emerging requirement for Site Exploitation (SE) to gain material that possesses both Intelligence and Law Enforcement value is of critical importance to DOD in the Global War on Terrorism (GWOT). The forensic facts gained from these collected materials significantly contribute to the U.S. and coalition forces' intelligence operations. This results in the identification of friendly and enemy individuals and forces to eliminate enemy threats through disruption, targeting, detention, and subsequent prosecution.¹²

Army and USAF units defending JBB collected IDF investigative materials with latent fingerprints like water bottles and firing tubes and submitted these for forensics analysis. It is likely the materials wound up in a large queue in which IEDs took priority, rarely receiving timely or useable forensics analysis in return. The demands of growing DOD forensics require significant DOD force structure planning and projection. Iraq and Afghanistan demonstrated the criticality of forensics expertise and significantly strained an already

high-demand, low-density skill set. If base defenders had priority or dedicated forensics capabilities, imagine the speed at which IDF networks could be identified and disrupted.

LE's Growing Prominence in the Department of Defense: A Short and Recent History

Clearly, given the above vignettes, LE enables the war fighter, ensures the internal security of operating bases, and protects the assets needed to fulfill the mission. The 2003 *National Strategy for Combating Terrorism* recognized the growing importance of LE capabilities as an instrument of national power on par with the traditional elements of American national security power: diplomatic, information, military, and economic.¹³ While not the federal lead for LE, the DOD surely must improve its integration and support of LE as a critical plank in the US effort to combat terrorism and as a growing enabler for combat operations, as demonstrated in Iraq and Afghanistan. However, the problem is that the DOD has not designated a “top cop” with the vested authority to establish LE policy, integrate and synchronize dispersed DOD LE operations, and improve the DOD’s interagency coordination and cooperation within the federal LE enterprise. This became apparent in 2006, when the department began standing up working groups to develop a DOD-wide suspicious activity reporting process. Recognizing this seam in DOD policy and operations, Gordon England, deputy secretary of defense, tasked the under secretary of defense for intelligence (USD[I]) in October 2006 with facilitating the identification of a DOD LE PSA.¹⁴

In January 2007 the DOD’s Office of the Director, Administration and Management, accepted the DOD LE PSA initiative from USD(I) and then conducted a July 2007 DOD-wide study of the current LE enterprise. An examination of the problems within the DOD LE enterprise revealed many disconnects, inefficiencies, and seams in policy. Services and other DOD LE agencies establish their own LE policies and use their own forms and documentation. DOD agencies, services, and combatant commands have different LE procedures, databases, training standards, and processes. Each service has a “stovepiped” LE data system, none of which talks to one another or shares database information with other federal or local LE agencies. Efforts to integrate DOD LE operations into the federal LE enterprise

and improve interagency cooperation are ad hoc because there is no single point of contact for LE matters within the DOD. The DOD has begun to recognize the potential for LE beyond its normal parameters:

LE-related areas, such as crime prevention, physical security, and criminal investigations often overlap and have grown in complexity and scope. LE expertise is a growing requirement in promoting U.S. security in our global operations and as an enabler for the warfighter in the areas of forensics, law and order missions, extra-judicial killings investigations, foreign police training, force protection, threat reporting, and liaison with local police authorities. However, the Department does not have one proponent office, or other management arrangement, that can authoritatively and comprehensively represent the DOD LE community, align DOD-wide policy, address resources, and synchronize DOD LE efforts within and outside the Department.¹⁵

In the wake of the Fort Hood shootings, the DOD conducted an independent review of the incident and considered the possibility of creating a DOD LE PSA, but ultimately concluded that “because LE is such a small part of the greater DOD mission, it has not risen, to date, to the level requiring a separate PSA.”¹⁶ Instead, the DOD LE stakeholders opted to address the concerns raised by the Fort Hood incident by framing an existing steering group as the answer to DOD LE enterprise shortfalls. The concern, as is always the case with steering groups and committees, is that such bodies have no power to compel the services toward synchronized policy or procedures.

Breaking the Mold: Creating a Truly Synchronized Department of Defense Law Enforcement Enterprise

Improved DOD LE enterprise coordination and integration not only improves support to the war fighter but also supports homeland defense and security of bases stateside. DOD LE support includes the execution of the following in support of US Northern Command missions and operations: receiving, fusing, analyzing, and disseminating accurate, relevant, and timely LE threat information; planning and coordinating the employment of defense criminal investigative organizations (DCIO) and other DOD LE organizations (including military police and security forces); and executing required engagement and coordination with DOD and non-DOD LE agencies.¹⁷ The appointment of a DOD LE PSA would do much to improve service interoperability, federal LE integration, and interagency planning.

Beyond garrison security and LE issues raised in the Fort Hood shootings, Iraq and Afghanistan showed how critical LE skill sets are to irregular warfare and to the COIN strategy invoked. Accordingly, DOD LE must transform to maximize its impact on current and future DOD combat operations and fully integrate into the US government interagency LE effort to defeat terrorism. Without an LE PSA, who will challenge traditional DOD LE capabilities and transform the DOD LE construct to improve its support to the war fighter? One National Defense University study on stabilization and reconstruction operations concluded, “Does the United States need a new type of military police capability? The question is beyond the scope of this study but deserves serious consideration. Other countries field national police forces that bridge a gap between their civilian and their military forces. The United States fills that gap with military police that are organized, trained and equipped to accompany military units to establish security in environments that range from quiet to hostile. However, they do not focus on law enforcement missions.”¹⁸

The Stakeholders

The DOD has a diverse and disjointed LE community, made more confusing by the variety of terminology used to describe its police entities. The US Army and Marine Corps refer to their LE patrolmen as military police (MP), while the USAF refers to police officers as security forces. The Navy calls them masters-at-arms or shore patrol. There are also civilian DOD police agencies providing LE services at various military installations and activities, including the Pentagon Force Protection Agency, which protects the Pentagon and other DOD sites in the National Capital Region.

Regarding criminal investigations, there is even more diversity and varied jurisdictions. Within the DOD, there are four federal LE agencies; these include the DOD Office of the Inspector General’s (DOD IG) Defense Criminal Investigative Service (DCIS), the US Army Criminal Investigation Command (USACIDC), the Naval Criminal Investigative Service (NCIS), and the USAF Office of Special Investigations (AFOSI). AFOSI and the NCIS are full-service investigative agencies similar in function to the Federal Bureau of Investigation (FBI) with differing jurisdictions; they conduct criminal, counterintelligence, and counterterrorism operations and investigations. The Army divides its investigative responsibilities between US-

ACIDC and Army Counterintelligence. USACIDC focuses on criminal investigations, while the Army Counterintelligence component focuses on stopping hostile foreign intelligence services and terrorist organizations from collecting intelligence on the Army. Army Counterintelligence is not a designated federal LE agency, and it has limited investigative authorities as applied to counterintelligence and terrorism. The DCIS is primarily responsible for investigating DOD-level fraud but, since 9/11, has expanded into other areas including membership in select joint terrorism task forces. Specifically, it consists of DOD and interagency LE professionals tasked to investigate large-scale defense contractors and fraud in ongoing DOD programs and operations spanning two or more services.

Excluding Title 18 of the US Code and service-level criminal investigative policies, the Inspector General Act of 1978 is the only DOD-level document governing all DOD criminal investigative actions. Specifically, the act designates that “the Inspector General of the Department of Defense . . . be the principal adviser to the Secretary of Defense for matters relating to the prevention of fraud, waste, and abuse in the programs and operations of the Department.”¹⁹ The law requires the DOD IG to report “fraud and other serious problems, abuses, and deficiencies” to the US Congress. Additionally, each of the seven DOD combat support agencies maintains small elements of police, security, and criminal investigators who have LE authorities and responsibilities to maintain law and order and investigate criminal acts within or against their respective agencies.²⁰

The Need for Law Enforcement Doctrine and Organizational Change

Although none has been codified with major changes to joint doctrine, some Herculean efforts have been undertaken to capture how to best organize combatant commander LE expertise or to cement an interagency approach. The Joint Interagency Task Force–South (JIATF–South), for example, “provides a model of an interagency construct that fuses military, law enforcement, and intelligence operations into a unified organization under one leader.”²¹ The joint interagency coordination group (JIACG) provides another template from which to “closely align” the “US diplomatic, law enforcement, financial control, and intelligence sharing endeavors” and “establish a

'limited' JIACG capability in each combatant command."²² An LE PSA-led effort to examine current LE-related doctrine will ensure combatant commands are organized effectively prior to a wartime crisis and will avoid the shortfalls produced by minimal interagency integration, as documented by a National Defense University case study:

The law-enforcement community, however, enjoyed no formal relationship with [US]CENTCOM [US Central Command] prior to JIACG. In large part, this was because of the command's concerns about violating either the Posse Comitatus Act or intelligence oversight restrictions. The task, therefore, within multiple interagency environments and while still maintaining the tactical synergy achieved in Afghanistan, was to transform the combat-tested JIATF-CT [counterterrorism] into a JIACG capable of developing the operational depth to coordinate theater-level planning and the strategic reach to shape national-level planning.²³

Continued Challenges

There are many challenges and opportunities for a new LE PSA. Starting with the basics, there is currently no accepted DOD definition for law enforcement.²⁴ There is, however, a DOD definition of a "law enforcement agency," which the DOD currently defines as agencies "*outside* the Department of Defense" (emphasis added) that are "chartered and empowered to enforce US laws in the following jurisdictions: The United States, a state (or political subdivision) of the United States, a territory (or political subdivision) of the United States, a federally recognized Native American tribe or Alaskan Native Village, or within the borders of a host nation."²⁵

The DOD LE study initiated by the Office of the Secretary of Defense–Assistant Director of Administration and Management (OSD-ADA&M) queried the Joint Staff, unified combatant commanders, services, and other DOD entities with LE equities or interests; however, its authors did not seek to develop a common definition for DOD LE. John F. Awtrey, director, Office of LE Policy and Support, Office of the Under Secretary of Defense (Personnel and Readiness), worked informally with the services on a draft definition of DOD LE. While not definitive, the Joint Staff (J34) provided an amended version of Awtrey's definition to OSD-ADA&M to assist them in conducting their LE PSA research:

DOD LE is defined as crime prevention, detection, and response, criminal investigation, forensics analysis, apprehension and detention, pretrial and post-

trial release, collection and maintenance of case files (prosecution and adjudication), correctional supervision or rehabilitation of accused and convicted persons, and collection, storage, and dissemination of criminal history record information and criminal intelligence, performed under federal (including the UCMJ [Uniform Code of Military Justice]), state, and local law, by authorized agencies/organizations, in order to protect the public safety. LE includes enforcing federal and state law, issuance of federal citations, detaining suspects, motor vehicle traffic management, traffic investigations, apprehension and restraint of offenders, and crowd control. This includes development of policy and plans for the training and employment of LE personnel, emergency response, and apprehension of persons who commit crimes, and confinement of pretrial and Level One offenders.²⁶

While certainly not all-inclusive of every aspect of LE skill sets and mission areas, the Awtrey definition provides a sound starting point for defining the parameters of LE for the new PSA. The need for a transformative, expeditionary DOD LE capability has become more critical as overseas contingency operations (OCO) matured. A 2007 article in *Joint Force Quarterly* highlighted the need for DOD attention to LE capabilities in support of the OCO: “Even leaving aside the complexities of stabilization and reconstruction, addressing the direct threat requires the expertise and technological capabilities of law enforcement agencies, both in the conflict arena and at great distances, in order to terminate or restrict support to terrorism. Moreover, the effective utilization of law enforcement capabilities requires the cooperation of networks of not only law enforcement organizations but also military organizations across the globe.”²⁷

Since DOD LE is undefined and has yet to be codified by any overarching DOD policy maker or guidance, it will undoubtedly result in friction with existing authorities, programs, and policies from other DOD offices. Programs with LE elements include antiterrorism, force protection, security, counterintelligence, counterespionage, homeland defense, suspicious activity report, high-risk personnel, and the DOD polygraph program.

All of the aforementioned programs have codified DOD or joint definitions and/or have program authorities vested in an appointed PSA or other designated policy maker, who will certainly guard their areas of authority and parameters of jurisdiction. Developing a new DOD LE construct will be a challenge as the PSA establishes policies and budget authorities for DOD LE programs on behalf of the Office of the Secretary of Defense (OSD). It may also require analysis of existing portfolios and a study on whether some should migrate to

the new LE PSA. For instance, given congressional concerns about intelligence oversight, does it make sense that the USD(I) is the PSA for installation security, a mission area that is heavily dependent on the use of LE expertise? Regardless, these types of policy and portfolio issues will need to be addressed.

Joint Training and Interoperability

The DOD must improve the interoperability of its LE assets. Military police and investigators are high-demand, low-density assets in the GWOT. As mentioned earlier, the US Army utilized USAF and Navy LE personnel to fill its own military police manpower shortfalls in Iraq, placing a strain across the services—a shared price in the war on terrorism. As a Harvard University John F. Kennedy School of Government Rule of Law and Stability Operations Workshop noted, “A synthesis between military and police-trained units could significantly enhance the efficiency of stability operations.”²⁸

An opportunity to improve interoperability can be found in streamlining and standardizing LE forms. The services each have their own version of a witness statement, which is essentially the same form in different formats. Standardized forms would enable a standardized data management system by establishing the same required data fields. Services providing in lieu of forces had to receive training on the use of Army forms so that the data could be entered into the Army’s COPS data system. If the services were to utilize a single form and data system, they could eliminate this redundant training and greatly improve interoperability and information sharing. This is not unprecedented, as the DOD utilizes standardized forms for prisoner and detainee transfers.

In 2011 the criminal investigative agencies witnessed successes in joint training and interoperability by their headquarters being collocated in one facility at Marine Corps Base Quantico, Virginia. Both AFOSI and NCIS are in the process of fusing their watch centers to enhance coverage for their respective services and the greater DOD. Additionally, AFOSI, NCIS, and Army Counterintelligence have benefited from joint counterintelligence and LE training under the Defense Intelligence Agency’s (DIA) Joint Counterintelligence Training Academy at Quantico. Additionally, AFOSI and NCIS are full interagency partners in utilizing the Federal LE Training Center in Brunswick, Georgia. This common interagency training serves as a

foundation for future task force–type relationships that will pay large dividends for combatant commanders’ mission execution of the global war on terrorism.

The best, but relatively unknown, example of a predominantly DOD LE program that successfully combines joint and interagency training is DIA’s Defense Academy for Credibility Assessment (DACA). Since 1996 DACA (formerly known as the DOD Polygraph Institute) has served as the executive agent for all federal government polygraph training and certification.

Forensics: The Growing Enabler

As shown in the earlier forensics vignette, improving capacity for battlefield forensics has the potential for greatly improving military operations designed to counter indirect fire, improvised explosive device networks, and the criminal-terrorist nexus. The DOD has traditionally employed forensics to establish facts for criminal justice actions for use in a court of law or UCMJ proceedings or to determine the identification of human remains and manner of death. OCO produced both legal and operational needs for forensics across the spectrum of combatant operations. However, emerging war-fighter requirements transcend traditional forensics roles and provide the joint force commander (JFC) a powerful tool in identifying enemy combatants and terrorist networks and other roles that enable his protection of the force through a greater understanding of his operating environment. The DOD must maximize its use of forensic functions and capabilities to fully enable the JFC on the battlefield. Despite the apparent value of a programmed forensic capability, neither the required capabilities nor the responsibilities to source these capabilities have been identified or validated, resulting in an ad hoc, incremental, and disjointed approach.

The majority of DOD forensics expertise and infrastructure comes from the LE community. While the DOD biometrics community has nurtured the development of forensics capabilities-based assessment and concept of operations, it recognized that forensics does not belong under the biometrics banner for the long term. On 26 April 2011, the DOD formally codified a departmental DOD forensic enterprise (DFE), which has the authority to establish “policy and assigns responsibilities within the DOD to develop and maintain an enduring, holistic, global forensic capability to support the full range

of military operations (ROMO).²⁹ The memo assigns the under secretary of defense for acquisition, technology, and logistics (USD [AT&L]) the PSA responsibilities, the secretary of the Army as the DOD executive agent (EA) for forensics, and the secretary of the Air Force as the DOD EA for digital and multimedia forensics. While this is a welcome and needed step, it carves out only a portion of the LE enterprise for synchronization.

The Need for Interagency Integration

DOD LE must integrate into a common framework with the federal LE enterprise, sharing information, training, and expertise on multiple levels. Within legal limitations, the LE PSA's efforts must challenge old paradigms about the DOD's integration and coordination with outside LE agencies at the international, federal, state, local, and tribal (Native American) levels. This should include updating DOD Directive (DODD) 5525.5, *DOD Cooperation with Civilian Law Enforcement Officials*, which was last updated in December 1989.³⁰ The world has changed since the end of the Cold War, and the events of 11 September 2001 necessitate a complete reevaluation of DOD LE policy, similar to what has been or is being done across the rest of the federal LE construct.

As an example, DOD LE entities must work with federal, state, and local LE through joint terrorism task forces (JTTF) to maximize interagency information sharing and coordination within the United States. According to the FBI, JTTFs are small cells of highly trained, locally based investigators, analysts, linguists, and other specialists from dozens of US LE and intelligence agencies. As of 2013 JTTFs were established in 100 cities nationwide and 56 field offices with over 4,400 members, including special agents, state/local LE officers, and professionals from other government agencies (the Department of Homeland Security, the Central Intelligence Agency, the Transportation Security Administration, etc.).³¹

The lack of an LE PSA is readily apparent to interagency partners. In January 2007 the Department of Justice's National Gang Intelligence Center released a controversial report entitled *Gang-Related Activity in the US Armed Forces Increasing*. General officers and a senior executive service civilian, representing the Army, USAF, and Navy criminal investigative services, wrote a united letter to the director of the FBI disputing some of the assertions and analysis. A

major concern for the service representatives was the lack of staffing prior to release of the report. However, without an LE PSA, the other federal partners are left to wonder whom they should staff LE matters to in the DOD and who represents the true position and concerns of the DOD LE establishment.

Law Enforcement Enterprise Cultural Barriers

Law enforcement agencies received a great deal of criticism in the wake of the 9/11 terrorist attacks regarding their failure to share information across the federal LE and intelligence enterprise. LE culture, outdated information sharing protocols, and misunderstandings about federal intelligence statutes all contributed to this failure. As the 9/11 Commission report noted, “It is hard to ‘break down stovepipes’ when there are so many stoves that are legally and politically entitled to have cast-iron pipes of their own.”³² This is especially true in the LE enterprise. As noted by the study, “Twelve major DOD Component LE stakeholders oversee and execute DOD LE policy and programs—most of whom desire to maintain decentralized execution of DOD LE policy. . . . None of the sixteen OSD PSA desire to lose their established OSD LE policy oversight responsibilities.”³³

The DOD LE culture shares many of the same traits as other federal and state LE organizations. LE personnel are very protective of their jurisdictions and distrusting of others outside their own organization, even those in sister LE agencies. As a result, bureaucratic and jurisdictional rivalries create an environment in which cooperation becomes difficult and is typically based on informal professional relationships. An LE PSA will no doubt find that the various LE-related organizations in the DOD share these same cultural traits and will resist efforts to forge a new DOD LE construct. These LE cultural barriers have been present at every step in the post-Fort Hood deliberations on creation of an LE PSA. Ultimately, a 2010 DOD study on the feasibility of appointing a DOD LE PSA cited institutional and bureaucratic forces as undermining the creation of this new organizational template: “There is little interest among the organizations involved for the major realignment of functions, responsibilities, authorities, staff, and resources involved in moving well established policy oversight functions integral to the historic and legal mandates of the offices involved. In the course of this study none expressed any

interest in doing so. In fact an initiative by USD(I) in 2005 to move oversight of military working dogs (an LE related function) from USD(I) to USD(P&R) was unsuccessful.”³⁴

Conclusion

The appointment of a DOD LE PSA is necessary to strengthen the DOD’s LE enterprise, fully exploit its expertise and skill sets in irregular warfare environments, build a fully networked LE data system, and support the war fighter. The promise of an LE PSA is a transformed DOD LE enterprise, better able to bring its considerable expertise to bear in defeating terrorist networks and supporting the war fighter, defending installations and air bases through improved and networked LE systems, and increasing information sharing with interagency and international partners. Kenneth H. Poole, director, Joint Special Operations University (JSOU) Strategic Studies Department, wrote the foreword to a JSOU report entitled *Convergence: Special Operations Forces and Civilian Law Enforcement*, which highlights the importance of LE operational capabilities and its utility in the COIN operational environment:

John B. Alexander’s monograph about the convergence of Special Operations Forces (SOF) and civilian law enforcement activities is timely considering the U.S. Government’s revamped strategies to promote more capable and effective governments and improve security in southwest Asia. The strategic concept includes fully resourcing security training for military and police forces. U.S. strategic objectives envision two outcomes: (a) governments that can provide effective internal security with limited international support and (b) military and police security forces that can lead the counterinsurgency and counterterrorism fight with reduced U.S. assistance.³⁵

There will likely be another Fort Hood incident or an actual Fort Dix–style plan that makes it to the execution phase, possibly at an overseas location or in the midst of combat operations. The growing instability in Mexico with the ascendance of narcoterrorism on America’s borders will require an interagency effort. These events will cause another round of teeth gnashing about how to improve, synchronize, and integrate the DOD LE enterprise. Band-Aid steps that satisfy the LE stakeholders by preserving their autonomy will no longer be sufficient. The lessons learned from these events will likely show the current LE synchronization effort through the Force Protection Senior Steering Group lacking, because the group has no

power over the services to compel or synchronize policy, standardization, or DOD LE budgetary priorities.

It is critical to fully integrate DOD LE capabilities and expertise in air base defense and improve its operationalization and mobilization in current and future irregular wars. While there are many challenges to synchronizing and improving DOD LE operations, the fruits of this effort will integrate the DOD both internally and externally into the larger national LE effort, which creates many additional synergies in itself. In short, the DOD increasingly needs “cops” and other LE experts to support the growing interagency effort to combat terrorism at home and abroad, target insurgent cells that are attacking coalition nodes like air bases, and develop a truly synchronized departmental LE enterprise.

Notes

1. Army Field Manual (FM) 3-24, *Counterinsurgency*, December 2006, 3–29, http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/fm3_24.pdf.

2. Glen E. Christensen, “Air Base Defense in the Twenty-First Century” (graduate monograph, Fort Leavenworth, KS: School of Advanced Military Studies, United States Army Command and General Staff College, 2007), 8, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA470671>.

3. William H. Tunner, *Over the Hump* (New York: Duell, Sloan, and Pearce, 1964), 96.

4. Col Kenneth R. Dahl, “Summary Report of Det 3, 732 ESFS, Mission Accomplishments,” Baghdad, Iraq, memorandum, 2 August 2006.

5. Special Inspector General for Iraq Reconstruction, *Quarterly Report to Congress* (Washington, DC: US Departments of Defense and State, 31 July 2006), 183, http://www.sigir.mil/files/quarterlyreports/July2006/Report_-_July_2006.pdf#view=fit.

6. Don Branum, “Balad Airmen Look Back: 2008 in Review,” 332nd Air Expeditionary Wing Public Affairs, 1 January 2009, <http://www.balad.afcent.af.mil/news/story.asp?id=123129950>.

7. Lt Col Keith McCormack, commander and air provost, 332nd Expeditionary Security Forces Squadron, interview and e-mail correspondence with Col Shannon W. Caudill, 8 April 2013.

8. Military Times Hall of Valor, “Douglas C. Loudin,” *Military Times*, 2013, <http://projects.militarytimes.com/citations-medals-awards/recipient.php?recipientid=33641>; and McCormack, interview and e-mail correspondence.

9. Inspector General, United States Department of Defense, *Semiannual Report to the Congress, April 1, 2010–September 30, 2010*, 86; and McCormack, interview and e-mail correspondence.

10. McCormack, interview and e-mail correspondence.

11. *Ibid.*

12. Director of Defense Research and Engineering, *Capstone Concept of Operations for DOD Forensics* (Washington, DC: Department of Defense, 18 July 2008).

13. US Government, National Strategy for Combating Terrorism, The White House, February 2003, 1, http://www.globalsecurity.org/security/library/policy/national/counter_terrorism_strategy.pdf.

14. Gordon England, deputy secretary of defense, to Stephen Cambone, under secretary of defense for intelligence, memorandum, 12 October 2006.

15. Directorate for Organizational and Management Planning Office of the Director of Administration and Management Office of the Secretary of Defense, *A Study of DOD Law Enforcement Policy Oversight Responsibilities* (Washington, DC: Department of Defense, 16 April 2010), 5.

16. Ibid.

17. US Northern Command, "Concept of Execution: Law Enforcement Support Requirements," 20 July 2006.

18. Hans Binnendijk and Stuart Johnson, eds., *Transforming for Stabilization and Reconstruction Operations* (Washington, DC: National Defense University, 12 November 2003), 75, http://www.au.af.mil/au/awc/awcgate/ndu/stab_rec_ops.pdf.

19. Title 5–Appendix, *Inspector General Act of 1978*, 5 USCA Appx § 1 (2001) § 1, <http://www.DoD.dig.mil/IGInformation/igact.pdf>.

20. Department of Defense Directive (DODD) 3000.06, *Combat Support Agencies*, 10 July 2007, <http://www.dtic.mil/whs/directives/corres/pdf/300006p.pdf>.

21. Martin J. Gorman and Alexander Krongard, "A Goldwater-Nichols Act for the US Government: Institutionalizing the Interagency Process," *Joint Force Quarterly* 39, no. 4 (2005), <http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA479861>.

22. US Joint Forces Command, Joint Warfighting Center, Joint Doctrine Series, Pamphlet 6, *Doctrinal Implications of the Joint Interagency Coordination Group*, 27 June 2004.

23. Matthew Bogdanos, "Transforming Joint Interagency Coordination: The Missing Link between National Strategy and Operational Success," Case Studies in National Security Transformation, no. 9 (Washington, DC: Center for Technology and National Security Policy, National Defense University, 2007), <http://www.ndu.edu/jrac/docUploaded/NDU-Transforming%20IA%20Ops.pdf>.

24. Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 8 November 2010, amended 15 November 2012.

25. Ibid., 182.

26. John Awtrey, e-mail to J34, 1 Aug 2007.

27. M. E. Bowman, "Law Enforcement Technology, Intelligence, and the War on Terrorism," *Joint Force Quarterly* 46, no. 3 (2007): 19, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA521074>.

28. Carr Center for Human Rights Policy and US Army Judge Advocate General's Legal Center and School, *Implementing the Rule of Law and Human Rights in Stability Operations*, workshop report (Cambridge, MA: Harvard University, 25–26 September 2006), 16, http://www.hks.harvard.edu/cchrp/pdf/September2006_RuleofLaw_ConferenceReport.pdf.

29. DODD 5205.15E, *DOD Forensic Enterprise (DFE)*, 26 April 2011, <http://www.dtic.mil/whs/directives/corres/pdf/520515e.pdf>.

30. DODD 5525.5, *DOD Cooperation with Civilian Law Enforcement Officials*, 20 December 1989, <http://www.dtic.mil/whs/directives/corres/pdf/552505p.pdf>.

31. Federal Bureau of Investigations, "Protecting America from Terrorist Attack: Our Joint Terrorism Task Forces," n.d., http://www.fbi.gov/about-us/investigate/terrorism/terrorism_jtfts.

32. National Commission on Terrorist Attacks upon the United States, *9/11 Report* (New York: St. Martin's Press, 2004), 575.

33. Office of the Director of Administration and Management Office of the Secretary of Defense, Directorate for Organizational and Management Planning, Department of Defense, "A Study of DOD Law Enforcement Policy Oversight Responsibilities," 16 April 2010.

34. Ibid.

35. John B. Alexander, *Convergence: Special Operations Forces and Civilian Law Enforcement*, JSOU Report 10-6, (MacDill AFB, FL: Joint Special Operations University, July 2010), ix, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA526456>.

Chapter 11

Conclusion

Ten Propositions on the Defense of Air Bases

Shannon W. Caudill
Christopher L. Corley

Modern aircraft are expensive and fragile. They make lucrative targets for an enemy mindful of mitigating or destroying America's traditional airpower advantage. The long, sophisticated process of manufacturing modern war planes, as well as the production of the pilots who fly them, makes the loss of just one a significant event. In the case of losing one B-2 stealth bomber or a C-17 mobility aircraft loaded with passengers, such an attack would be a potential strategic and political disaster. Airfields provide American and coalition forces the means to project power and enable the effectiveness of ground forces. Air bases will continue to be magnets for attack because the cost-benefit analysis shows that the investment of training small teams to attack aircraft worth millions—sometimes billions—of dollars is well worth the risk. Yet, military leaders repeatedly place the defense of air bases low on the spectrum of investment and resource commitment.¹

Inspired by retired Air Force colonel Phillip S. Meilinger's *Ten Propositions Regarding Airpower*, this chapter serves to consolidate some of the key observations, themes, and learning points from the previous chapters. It is the hope of the authors that their essays will generate discussion and debate for Airmen of all ranks and backgrounds—not just a parochial debate among security forces. Today's

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USAF strategy for defending air bases is known as integrated defense (ID) (formerly known as air base defense, air base ground defense, or integrated base defense). ID provides the requisite secure foundation from which the USAF launches combat operations and protects its personnel and resources. Without strong ID capabilities, USAF and joint force personnel and resources are more vulnerable to attacks that potentially decrease combat effectiveness and sortie rates. Importantly, if the USAF ID mantra “every Airman is a sensor” is to have long-term meaning, then a true integration of all units and personnel should be included in the base defense plan, a point which will be elaborated on later.

Airmen should create truly synchronized base defense efforts by fostering organizational constructs and leaders that rapidly adapt to the operational environment. Establishing a successful and effective base defense posture relies on a proactive base security system that utilizes all available assets, especially joint, coalition, and host-nation partners. This can only be done through a joint and combined integration of base defense forces, understood and supported by all commanders involved and backed by a robust and regularly tested command and control system.

This discussion goes beyond the tactical elements of base defense to the larger framework of how we prepare leaders at all levels, especially those being groomed for group and wing command, to accept the defense of the air base as a fundamental component of airpower. More needs to be done to educate and prepare senior leaders, especially those who will command Airmen and air forces in a combat zone. Two former wing commanders from Iraq and Afghanistan believe the USAF should improve its senior leader training to address this shortfall.

Reflecting on his year as the wing commander at Joint Base Balad (JBB), Iraq, Maj Gen Brian T. Bishop stated, “I would change the approach to Air Force base defense by addressing senior leader training in this area to ensure a better understanding of missions and capabilities. It took me a while to be comfortable with Airmen conducting the outside-the-wire [OTW] mission, not because I didn’t think they could do it, but rather it was because I didn’t want to set up an us versus them mentality with the BSO [battlespace owner], our Army counterparts.”²

Supporting this viewpoint, Brig Gen Thomas H. Deale, a former wing commander in Afghanistan, observed,

We could improve senior leader training in regards to base defense. There isn't anything in the predeployment training that I received that specifically prepared me for my responsibilities in base defense. Having experience helps a lot, and I credit my time as a wing commander in Korea as essential. You have to have some basic knowledge of how things work. You get that through personal experiences accumulated over the course of a career. One thing we must do is continue the left seat and right seat exchanges of information and orientation prior to deployment and change of command. In combat, you do not have time for on-the-job training. You may be attacked at any moment and as such, you must be ready to assume commander responsibilities from day one; your Airmen rightly expect that from their leaders.³

As we reflect on the successes and failures of USAF operations in Iraq and Afghanistan, there must be a holistic debate and discussion on air base defense. Shaped by the lessons of Afghanistan and Iraq, this concluding chapter puts forth 10 propositions on modern air base defense in an irregular warfare environment. Based on the experiences and innovations of this past decade, the USAF and its joint partners would be well served by codifying many of these tenets into doctrine, procurement, and training of future forces. The authors and contributors who shaped these propositions hope this material will provide a starting point for improving the intellectual understanding of the complexity of defending air bases in a complex, irregular warfare operational environment.

Ten Propositions on the Defense of Air Bases

1. The Brain Is Mightier than the Bullet.
2. Control of Base Defense Forces Should Be Centralized.
3. Influence the Base Security Zone . . . or Someone Else Will.
4. Unity of Effort—Synchronize the Fight.
5. Everyone Must Have a Role in Base Defense . . . and Know It!
6. Intelligence Drives Maneuver: A Joint-Interagency Approach Is Critical.
7. Air-mindedness Includes Using Air Assets for Base Defense.
8. Law Enforcement Skills Are Critical to Base Defense and Irregular Warfare.
9. At the End of the Day, Tactical Leadership Is the Linchpin.
10. Nowhere to Hide: Anticipate Future Threats and Countermeasures.

1. The Brain Is Mightier than the Bullet.

From wing commanders to noncommissioned officers on combat patrol, the USAF needs to create an organizational climate in which learning organizations thrive by challenging assumptions, taking the initiative in building partnerships, and proactively engaging the local population and friendly forces in the operational environment surrounding its air bases. As such, we should produce leaders who *adapt* and *learn*—key words in today’s military lexicon. Army Field Manual 3-24, *Counterinsurgency*, the seminal doctrine used by US and coalition forces in Iraq and Afghanistan, uses the phrase “adapt” 89 times but mentions the phrase “learn” or “learning” 179 times—because it is the learning that leads to the ability to adapt to new circumstances or information.

A fundamental question for the military leader is, How do I create a learning organization—one that encourages experimentation, adapts following failure, and rewards those who take smart risks? This is where an examination of counterinsurgency (COIN) philosophy and organizational culture is relevant to the task. COIN doctrine challenges leaders to “promote learning,” “learn and adapt,” and “develop an effective system to circulate best practices throughout their command.”⁴

Airmen would do well to study organizational theory and examine examples from business and industry on how best to create and sustain adaptive learning organizations—the kind needed in complex, irregular warfare environments. *Forbes* magazine did an exposé on methods that created effective, adaptable learning organizations. An abbreviated list included the following recommendations: (1) remembering that learning is “informal,” (2) promoting and rewarding expertise, (3) unleashing the power of experts, (4) demonstrating the value of formal training, and (5) allowing people to make mistakes.⁵ The article closed with the observation that “there are lots of ways to build a learning organization, and they all get back to management. If you build a culture that gives people time to reflect, develop and share expertise, stay close to customers, and learn from mistakes, you will outdistance your competition and thrive in the face of huge market change.”⁶

Leaders should do their part to create an environment in which reflection, debate, and collective learning are possible. Doing so requires trust up and down the chain of command and leaders who

take their roles as mentors seriously. Central to this effort should be challenging military professionals to read about relevant issues like COIN and base defense, followed by discussions and debates about the merits of different tactics or case studies. JBB, Iraq, provides an example of outside-the-box thinking: recognizing that cultural and language skills were needed to address a base defense issue. The entry control points (ECP) experienced a spike in defensive shooting incidents when unarmed civilians accidentally drove down the entry control lane toward the base. The solution was to hire Iraqi private security guards whose job it was to wave off civilians from entry to avoid fratricide and explain in their language the security situation. Inculcation of culture and language skills furthers the effectiveness of the defense force in the operating environment. Not only did this solution completely stop these episodes, it helped the base present an Iraqi face to the local populace and provided jobs, which supported the larger COIN campaign plan.

Using jobs and profit as a weapon in the battlespace is a smart application of assets and access. As an example, commanders at Bagram Air Base, Afghanistan, and JBB used the presence of bazaars on both installations as leverage with local tribes and influencers. When mortar or rocket attacks originated from specific geographic points, commanders denied merchants from those areas access to the bazaar or closed the entire bazaar to place pressure on locals to better protect their land from insurgents or, better yet, to identify the insurgents to coalition forces.⁷

All members of the unit should know that the commander's intent includes smart risk-taking, relationship building in the battlespace, and a robust feedback and lessons learned loop to ensure continuous improvement and self-critique. Development of flexible and adaptable leadership talent should take priority both informally through recurring mentorship and formally through the revamping of legacy training models. USAF leaders should encourage Airmen to analyze, write, and debate the complexities of modern battlefields, especially striving to understand the demands of operating among insurgent strongholds and the issues of protecting air assets in areas prone to asymmetric enemy operations. Investing in our intellectual capital is the way forward to creating a "thinking" force that will be quicker to adapt to new enemy tactics. Ultimately, this effort requires the creation of a laboratory for ideas designed to meet the unique demands of the operational environment. It is not enough to know the tactics of

base defense and interlocking fields of fire. One must also learn the nonkinetic actions that can often deter, dissuade, disrupt, or disable enemy operations in the base security zone.

2. Control of Base Defense Forces Should Be Centralized.

Centralized control and decentralized execution are tenets of airpower.⁸ Similarly, throughout history, centralized control of air base defense forces has proven essential to effectively countering attacks on air bases. During the Tet offensive on 31 January 1968, simultaneous attacks occurred at Bien Hoa and Tan Son Nhut Air Bases, Republic of South Vietnam. During these attacks, defenders relied heavily upon centralized control to properly position responding forces to repel enemy attackers and to mount counterattacks on enemy forces already inside the perimeter.

Similarly, the complex attack on Forward Operating Base Fenty, in Jalabad, Afghanistan, on 13 November 2010, highlights the importance of centralized command and control.⁹ Precise positioning of the quick reaction force (QRF) and the integration of joint and coalition support forces were essential in massing the necessary firepower required to repel a complex insurgent attack. Without the coordinated response of base defense forces, these attacks could have proven disastrous due to the speed at which things occur in irregular warfare.

Proper command and control provided by a joint base defense operations center (JDOC) are essential to enable senior decision makers with overall situational awareness to properly direct and position friendly forces to counter attacks. Centralized control also prevents individual units (with good intentions) from responding to an event autonomously, leading to confusion and possibly fratricide, and inadvertently subverting the efforts of another responding force. This lack of a coordinated response could also lead to gaps in the overall scheme of the defense. Centralized control of responding forces under the defense plan ensures a controlled response that preserves the integrity of the defensive scheme of maneuver.

JBB provides another recent example of centralizing base defense under one leader. From 2008 to 2011, the 332nd Air Expeditionary Wing organized its base defense assets under the JBB defense force commander, an Air Force security forces colonel responsible for ensuring ID of the base by executing force protection and defensive operations.¹⁰ This individual worked to leverage the joint assets operat-

ing in the vicinity of JBB to guarantee a collaborative approach with partner joint units and host-nation forces that would produce operational gains and “mitigate potential risks and defeat adversary threats to Air Force operations.”¹¹

Furthermore, the defense force commander synchronized his ID operations through the JDOC, collocated with a BSO’s tactical operations center. The JDOC directed and integrated all subordinate security systems and communications elements, serving as a tactical integrator of both ground intelligence affecting the air base and guidance for BSO effects that drove the base defense effort. Major General Bishop emphasized this point, observing, “My defense force commander, Col John Decknick, understood the mission, laid foundational relationships with the Battlespace Owner and partners, and integrated our efforts to eliminate seams in the defense. As a result, the BSO was confident in our Airmen as they performed the outside-the-wire mission.”¹²

A truly joint team, JBB’s defense structure included tactical control of the counterrocket artillery mortar (CRAM) joint intercept battery. CRAM Soldiers and Sailors were responsible for employing the system’s intercept, sense, respond, and warn capabilities as a unique defense against enemy indirect fire (IDF) attacks and as a localized warning to populated areas of the base.¹³ Countless lives were saved simply by the alarm warning them to take cover several seconds before impact. Placing CRAM under tactical command of the USAF defense force commander ensured the best possible integration of CRAM capabilities into the overall physical security and force-protection architecture of JBB and the counter-IDF plan. As the threat of terrorist and insurgent forces using precision munitions and remotely piloted vehicles (RPV) grows, the US military will likely need a CRAM-like system as a key enabler under one defense force commander.

Major General Bishop further elaborated, stating, “My biggest take-away for base defense is the JDOC. You integrate everything through the JDOC: outside-the-wire operations, air support through the JTACs [joint terminal attack controller], CRAM, sensors, intelligence, etc. From the command perspective, I had a very high level of confidence in what the JDOC team was doing to protect the base.”¹⁴

3. Influence the Base Security Zone . . . or Someone Else Will.

Airmen should properly frame the operational environment of the area adjoining the base boundary to gain an understanding of the power brokers, key influencers, and potential threats in the battlespace. Some operating locations will have a clearly delineated ground BSO, as was the case in Iraq and Afghanistan. At some locations, it may be less clear, or an authoritative or capable BSO may not exist. Regardless, base defense requires continuous engagement with the local population surrounding the base. If a ground BSO is clearly identified, he or she usually has primary responsibility for interaction with the local populace and officials. If this is the case, Airmen should not write off their own involvement and should maintain some influence in the battlespace through a proactive and engaged approach.

One case study highlights the need for continuous and adaptive engagement with forces in the battlespace. Shortly after the Iraq War began, many observers in the press and politics lauded the initial British COIN strategy in southern Iraq as the template for victory in the rest of the country. After the invasion of Iraq in 2003, British troops quickly adapted a peacekeeping model and began foot patrols of Basra, wearing regimental berets instead of helmets and driving unarmored vehicles. However, what was praised widely as the way forward disintegrated into a disastrous rout over time. As Shiite criminal and Mahdi Militia groups organized, British casualties began to mount. During a period in 2006–7, as many as 80 percent of recorded attacks in Iraq targeted British forces, which directly affected the political support for British action.¹⁵ This in turn caused the British government to press its military forces to quickly transfer security control to the Iraqi security forces.

Over the course of a year, the British forces in Basra went from patrolling the streets from six main bases to withdrawing all forces to their contingency operating base at Basra Air Station. The net effect was to abandon the battlespace to the enemy, isolate and barricade the remaining British forces at one base, and become a magnet for IDF. The lesson for US forces defending air bases is to stay engaged in the battlespace to maintain accurate intelligence, gain support of the populace, and leverage local authorities for the security of the installation. Basra is a cautionary example of how we should maintain the initiative in the battlespace and constantly adapt to the changing tactics of the enemy. In short, if the population is not safe, neither are US

forces. The base must not be walled off from the local populace, with no interest in the security situation or their well being.

David Kilcullen's seminal paper *Twenty-Eight Articles of Counterinsurgency* offers the following wisdom for success in COIN operations, all of which is applicable in the defense of air bases:

Whatever else you do, keep the initiative. In counterinsurgency, the initiative is everything. If the enemy is reacting to you, you control the environment. Provided you mobilize the population, you will win. If you are reacting to the enemy—even if you are killing or capturing him in large numbers—then he is controlling the environment and you will eventually lose. In counterinsurgency, the enemy initiates most attacks, targets you unexpectedly and withdraws too fast for you to react. Do not be drawn into purely reactive operations: focus on the population, build your own solution, further your game plan and fight the enemy only when he gets in the way. This gains and keeps the initiative.¹⁶

At Air Command and Staff College, a professor recently relayed a story about a security forces major who was involved in a seminar on COIN. When the professor asked the major why he lacked an enthusiasm for the topic of COIN, the major responded, “Why should I? My responsibility stops at the fenceline.” This thinking is outdated and cedes operational control to the enemy and operational influence to a friendly force that may not have protection of the air base as a primary concern. Brigadier General Deale emphasized the importance of thinking outside the perimeter fence line by stating, “You must understand the strategic and operational value of everything that is going on within your battlespace, even if you do not own it.”¹⁷

4. Unity of Effort—Synchronize the Fight.

Synchronization of base defense resources is central to mounting any successful defense strategy. It is especially important when defense forces are comprised of joint and coalition forces sharing a complex battlespace. Regardless of who owns the ground OTW, Airmen should establish themselves as reliable partners who bring forth their expertise and assets to play a positive role in furthering the COIN or stability campaign plan. The lessons learned in Iraq and Afghanistan provide templates for engagement and synchronization in the battlespace. It is important to accept that host-nation and coalition forces have different rules of engagement, some known and others hidden from partners, and American forces have different

statutes and authorities that potentially limit their roles in combat operations. A successful synchronization effort takes into account all of these differences to distill the key areas in which unity of effort can be achieved. Seek understanding of partners' capabilities and limitations, and then act to incorporate them into the base defense as much as they are capable of, willing, or authorized to participate.

At JBB, for example, Airmen learned to leverage nonkinetic assets and operations to achieve lasting effects in support of the ground BSO's COIN and stability campaign plans. The wing hosted biweekly COIN and civil-engagement synchronization meetings to ensure full support to the BSO from the Army, USAF, and Department of State partners at JBB. Equally, the BSO embraced USAF and other partner units as a means of realizing his overall campaign objectives along three decisive lines of operation: security, economic development, and governance. No fewer than five times per week, wing representatives and joint intelligence support element (JISE) analysts met with the BSO and partner units to optimize coordination and information sharing. Those meetings included synchronizing operations and targeting and reviewing intelligence fusion, the BSO's weekly effects summary, and notes from numerous synchronization meetings at the field-grade- and company-grade-officer levels. For operators this meant providing support such as intelligence, surveillance, and reconnaissance (ISR) data on the locations of high-value individuals, sweeps over IDF hot spots, aerial monitoring of security for Iraqi election polls, and aerial show-of-force flights by F-16s over terrain from which IDF attacks frequently originated.

The BSO was responsible for synchronizing all friendly forces in his area of operations, which included conducting kinetic and nonkinetic actions, maintaining situational awareness of all forces, and controlling fire-support coordination measures. The BSO leveraged the capabilities of all coalition, host-nation, and other partner units, including nonmilitary entities such as the Department of State's provincial reconstruction teams and nongovernmental organizations. Their accomplishments proved that, if properly synchronized, such mutually supporting operations create a symbiotic relationship and unity of effort, ultimately yielding a more efficient and effective use of resources. US Joint Forces Command noted that the BSOs are learning to take advantage of all available operational enablers: "Many joint players . . . operate in the battlespace owners' areas of operation. . . . Battlespace owners are becoming increasingly more comfortable

with these ‘non-assigned’ players in their battlespace.”¹⁸ For Airmen, the goal is to create a common operating picture and achieve a unity of effort that better protects the installation, establishes security and influence in the base security zone, and, ultimately, better protects flying operations to support the larger strategic mission.

It is important to recognize that all operating bases in the BSO’s area of operations can have profound positive or negative second- and third-order effects across the operational environment. These include decisions that may appear confined to the base itself, whether they are air provost services (law and order operations), contracting, construction, or simply hosting a local children’s event. If such operations and activities are poorly coordinated and if local national ties and perceptions are not clearly understood, they can undermine the BSO’s relationship with key local officials and adversely affect efforts along multiple lines of operation. As Brigadier General Deale summarized, “To be effective at base defense, you have to have an accurate/detailed perspective of the threat and mission environment as well as the organizational dynamics of friendly forces and the resources that will interact to effectively provide for the defense. You must integrate and synchronize your efforts with the greater battlespace commander . . . you’re not just on your own.”¹⁹

Importantly, Airmen should remember that the relationship with ground BSOs should be given a great deal of attention and care. Additionally, the BSO may change periodically, whether a new unit and commander rotate in from the same service, or, as in the case of Tallil Air Base, Iraq, a completely new BSO is appointed from a different coalition partner.²⁰ Ultimately, the synchronization efforts demonstrated at JBB and elsewhere provide examples of how air bases can truly optimize battlespace effects among coalition and joint partners to improve the aerodrome operating environment.

5. Everyone Must Have a Role in Base Defense . . . and Know It!

Defending air bases, their requisite airpower assets, and joint personnel should be a mission in which all Airmen (and joint members) are invested and play an active role. Today, USAF doctrine states that every Airman plays a role in the new integrated defense concept. Air Force Doctrine Document 3-10, *Force Protection*, states, Every Airman is a sensor, and protecting the force is everyone’s duty. All Airmen are responsible for force protection, whether reporting

suspicious activity while engaged in their primary duties, augmenting base defense, or assisting in response to a natural disaster.”²¹

Despite the rhetoric, the USAF has not lived up to this bumper sticker slogan. For instance, unlike the members of sister services at operating bases in Iraq, Airmen stood out because they were not required to carry a personal weapon for their own defense, and the majority played no role in base defense. Also fueling this disconnect was a propensity to contract security taskings to private firms. The prevailing thought was, if we have a security concern, simply write a check for more contractors. Given fiscal constraints, those days are likely over or will be highly limited in the future. But more importantly, the inclination to rely on contractors has denigrated or hindered the concept of Airmen becoming sensors and playing a role in base defense.

If Airmen continue to be separated from any obligation to their own defense or that of defending the base they operate, there may be a price to pay down the line, either from an insider threat or direct attack by an enemy force. Indeed, it may take a calamity on the scale of what the British suffered in World War II to sort out the future of Air Force base defense. Dismayed at how few of his Royal Air Force personnel participated in the defense of British air bases on Crete from German air assault and their subsequent loss, British prime minister Winston Churchill lamented,

Every man in Air Force uniform ought to be armed with something—a rifle, a Tommy-gun, a pistol. . . . Every airman should have his place in the defence scheme. . . . It must be understood by all ranks that they are expected to fight and die in the defence of their airfields. . . . The enormous mass of non-combatant personnel who look after the very few heroic pilots, who alone in ordinary circumstances do all the fighting, is an inherent difficulty in the organization of the Air Force. . . . Every airfield should be a stronghold of fighting air-groundmen, and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers.²²

Base defense should be comprehensive and involve the entire military population in one form or another. This requires leaders who will confront complacency and challenge those in their command who disavow any responsibility for their own security. A positive example of how Airmen can play a constructive role in base defense comes from Bagram Air Base, Afghanistan. In 2011, all Airmen were required to be armed for base defense and personal protection.²³ In addition, the base was broken into defensive sectors, and each sector

had smaller defensive strongholds. All joint personnel, not just security forces, manned the defense of these internal sectors. Not only did this ensure a comprehensive defense, it enabled the limited number of security forces and military police to focus their efforts on the perimeter and exterior of the base.

The fiscal restraints of future military operations will undoubtedly limit the use of contractors in base defense. This will necessitate the further integration of Airmen and all base personnel into the defensive scheme. As has been noted about the USAF's ID doctrine, there is the intent of policy and doctrine and then there is the reality of how it is applied or rejected by the dominant organizational culture. The Marines have the motto that Every Marine a rifleman. If ID is to be truly transformative, it should evolve to include the concept that every Airman is a defender, denoting an inherent obligation by Airmen to defend their joint and coalition partners, their assigned sector, and themselves from an attack or insider threat. Brigadier General Deale noted that "base defense is not just the defender's activities; it has to be a defense in depth with all Airmen engaged."²⁴

6. Intelligence Drives Maneuver: A Joint-Interagency Approach Is Critical.

The failure to commit adequate intelligence assets to air base defense can lead to spectacular and devastating attacks. The terrorist organization the Liberation Tigers of Tamil Eelam (LTTE), also known as the Tamil Tigers, made an audacious attack on the Bandaranaike International Airport and its adjoining Sri Lankan air force base. Using suicide squad tactics, terrorists infiltrated the military runway through storm drains on 24 July 2001.²⁵ Their attack destroyed or damaged 26 civilian and military aircraft and "revealed the weakness of strategic and tactical intelligence collection, analysis, dissemination and review and second, force protection. . . . There was no prioritization of intelligence gathering, projection and sharing to erode the LTTE network."²⁶

USAF intelligence assets have historically emphasized air operations to the detriment of intelligence about ground-based defense threats—a situation that proved highly problematic in Vietnam. As the Office of Air Force History observed, "Hobbling external security [in Vietnam] was the lack of reliable intelligence on enemy activities

within striking distance of bases. This rose chiefly from the Air Force's failure to generate tactical ground intelligence.²⁷

In contrast to bases in Vietnam, JBB enjoyed a true commitment of intelligence assets for base defense. To remedy historical shortfalls in ground intelligence analysis, the 332nd Air Expeditionary Wing at JBB stood up a dedicated, ground-focused force-protection intelligence organization in November 2008 modeled after the joint intelligence cell template operated by the previous Army defense force commander.²⁸ Led and manned by USAF ISR professionals, the JISE received assistance from contracted intelligence analysts. Robust ground intelligence operations fully enabled Army and USAF ground forces to defend JBB through proactive deterrent patrols in areas where IDF tended to originate.

The BSO fully leveraged USAF intelligence analysis and capacity to create synergy with his own intelligence staff, thereby optimizing the JISE's capabilities. This completely synchronized effort supported intelligence fusion designed to drive defense operations in the base security zone. The JISE's goal of attaining predictive battlespace awareness required foreknowledge and the ability to shape operations based not only on reviewing the enemy's past actions but also on predicting actions the enemy would likely take in the future. Classic approaches to intelligence based on analyses of historical trends tend to drive a defense posture that responds after attacks occur. In those paradigms, ground forces are no more than "shot responders" in a counter-IDF fight, essentially sweeping for the enemy in the location from which the IDF round came, as indicated by radar and spotter reports. This reactive approach becomes a frustrating exercise comparable to a game of "whack-a-mole": chasing the enemy around the battlespace without generating any lasting effects. Though only temporary, these results nevertheless require a tremendous expenditure of energy and resources.

The JISE's analysis led to an intelligence-driven targeting process that enabled Air Force security forces to move from a mostly reactive defensive posture to a proactive scheme of maneuver. Lasting effects of this strategy require dominance of the human terrain within and outside an installation as well as an understanding of the relationships among key groups, tribes, and individuals. This reality drove Airmen to study and gain insights into the violent extremist networks operating in the area and to participate actively in mapping and pressuring these networks through a constant presence. Both Air Force

Office of Special Investigations and security forces Airmen fed the intelligence cycle by gathering information from relationships they had established in the battlespace, thereby closing the intelligence gap between themselves and the enemy network.

Joint ID operations adopted an intelligence-driven model that followed the following four lines of operation based on JISE analysis: (1) denying the enemy unobserved freedom of movement, particularly in traditional attack locations; (2) mapping out insurgent networks and identifying key leaders, weapons facilitators, and support nodes; (3) establishing patterns of life (e.g., determine who met with whom, when and where they met, and how they moved, shot, and communicated); and (4) mapping out the human terrain to discover fault lines among locals who hate the coalition, those who grudgingly tolerate but do little to help coalition forces, and, finally, those who might be willing to support efforts to secure the installation and the area surrounding it.

This effort prompted the development of an intelligence-collection plan and operational framework that cycled over a two-week period, maximizing the existing ground combat power. However, intelligence analysis of historical data produced a strategy that denied the enemy access to his favored locations for launching attacks during the most likely times for hostile activities. Each intelligence objective had a list of subobjectives for signals intelligence resources, a similar list for airborne ISR resources, and so forth, including one for security forces Airmen during their combat patrols.

Importantly, the USAF's most recent irregular warfare doctrine recognized some of the positive lessons of Joint Base Balad, Iraq. These included the intelligence synergy achieved when Airmen "co-ordinated closely with the battlespace owner (US Army) to ensure information sharing and the seams in the defense were covered." The wing leveraged "existing human networks to gauge US COIN efforts at various mass gatherings in and around the base boundary . . . [and] combined COIN and HUMINT efforts of the entire 332nd Air Expeditionary Wing [which] resulted in an overall decrease of indirect fire attacks against the base by more than 50 percent."²⁹

7. Air-mindedness Includes Using Air Assets for Base Defense.

Leveraging air assets directly enables base defense. Vietnam showed the utility of gunship, ground attack, and helicopter employment in

detering and repelling enemy ground attacks from the air. In Iraq from 2008 to 2012, JBB's base defense effort integrated and incorporated air assets into its defensive scheme. JBB utilized JTACs as needed to support the base defense by requesting air support. Additionally, the wing fostered a collaborative atmosphere among many joint players who provided aerial support to the defense mission on a largely ad hoc and volunteer basis.

Through the standard air tasking order and collection-management processes, the JISE obtained regular Global Hawk and Joint Surveillance Target Attack Radar System geospatial products as well as nationally derived intelligence products delivered through the combined air operations center's forward-deployed Air Force National Tactical Integration Cell. Despite the usefulness of these planned ISR assets, they were dwarfed by contributions of the expeditionary operations group and Army aviation units, both fixed and rotary wing, which delivered countless hours of "residual" ISR. To realize the most value from planned and residual airborne assets, the JISE had to produce, execute, and assess a comprehensive collection plan.

The JISE was effective at pulling together disparate units to reach a commonly desired end state: protecting their own people from IDF attacks. Because of the absence of an insurgent air threat and very few opportunities to strike targets kinetically, pilots and air planners welcomed the opportunity to fly residual ISR to protect the base, utilizing their remaining fuel and loiter time after completing their primary missions. Members of the operations group collected intelligence, logging hundreds of hours as they followed insurgent leaders to meetings at all times of the day and night, and Army aviation units loitered at a distance, capturing imagery of insurgents' patterns of life. The JISE orchestrated a collection plan adaptable to residual flight schedules to piece together persistent ISR at 15- to 60-minute time intervals—the length of time that a residual asset would make itself available for the local ISR effort.

The JISE collection coordinator produced a daily collection plan known as the "residual deck." For each collection target, the plan included specific elements of information needed by JISE analysts to fill gaps in their knowledge of the target, his activities, and insurgent networks associated with him. JISE partner analysts supplied crucial information about the activity patterns of each target by maintaining this information on a simple spreadsheet compiled each week. Planning also factored in predictable attack patterns of the enemy that

took advantage of sandstorms, rain, and the moon's cycle. Given the nature of the Iraqi insurgency, successful ISR operations had to include ground-based collection by patrols in close contact with high-value individuals and the populace surrounding them.

Another example comes from the Afghanistan theater of operations. On 19 May 2010, Afghan insurgents mounted a coordinated and complex attack on Bagram Air Base in Afghanistan. Synchronization and collaboration of available air assets included Predator RPVs, F-16 and F-15 fighter aircraft, AH-64 attack helicopters, OH-58 observation helicopters, and Scan Eagle RPVs, which enhanced battlespace awareness and helped senior decision makers deconflict priorities to maximize available resources and properly position responding forces from the JDOC. Drawing on his experience as a wing commander in Afghanistan, Brigadier General Deale added, "There is an 'airminded' approach to air base defense; it is not just a large forward operating base to defend. Airmen need to ensure that defense of an air base goes well beyond perimeter security, to include defending the mission by addressing the SAM [surface-to-air missile] threat and approach corridors—integrating military deception and other innovative methods to assure the continuity of air operations."³⁰

As we see in vignettes from Iraq and Afghanistan base defense techniques, air assets can play a decisive role in the defensive scheme. Ultimately, prior coordination and synchronization of combat aircraft into the base defense scheme enabled US aircraft providing close air support capability to kill insurgents outside the wire, including those who were too close to the perimeter wall to be observed and engaged by security forces personnel manning tower positions on the base perimeter. Airmen must bring all of their skill sets to the table to defend the air base, not trap themselves into one-dimensional thinking about ground threats. In short, airmindedness matters and acts as a base defense enabler.

8. Law Enforcement Skills Are Critical to Base Defense and Irregular Warfare.

COIN is not a panacea nor is it a strategy; it's a tactic to support a larger strategic framework.³¹ If the nation's overall strategy is flawed, no amount of well-intentioned COIN tactical successes and initiatives will save the operation in the long run. To put it mildly, one cannot simply sprinkle "COIN" across a region and expect miracles

to happen. However, regardless of how the larger campaign is going across the theater, Airmen must seek to influence the populations who live in the threat rings around the air base. The concept of community policing is a fundamental tenet of law enforcement and bears a striking resemblance to the core areas of COIN and stability operations. The Department of Justice defines *community policing* as “a philosophy that promotes organizational strategies, which support the systematic use of partnerships and problem-solving techniques, to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime.”³² The very same law enforcement skills that make security forces and military police effective in their home station missions can have dramatic effects as mission enablers in an irregular warfare environment.

Conflicts in both Iraq and Afghanistan resulted in an increased demand for law and order capability and revalidated the importance of basic law enforcement skills within the ID construct. Following the merger of the law enforcement and security missions within the security forces career field in the mid-1990s, SF underestimated the future requirements for law enforcement capability in base defense operations and irregular warfare. Subsequently, law enforcement skills deteriorated following the first Gulf War. High demand for this capability in Operations Iraqi Freedom and Enduring Freedom validated law enforcement as an important contributor to COIN operations and base defense. Law enforcement supports the nine stated desired effects of ID by aiding deterrence, detection, assessing, warning, defeating, delaying, defending, and recovery operations.³³ Law enforcement personnel often augment QRFs and internal response forces in support of primary ID forces.

Additionally, law enforcement personnel play an important role in law and order maintenance, theft prevention, good order and discipline, enforcement of General Order 1 provisions, traffic safety, accident investigation, detainee operations, and detainee air transport. Air bases in combat zones are not US-only installations. Force structure caps and host-nation limitations force heavy reliance on coalition, contractor, host-nation, and foreign national support. Theft of coalition supplies and materials by local nationals, contractors, friendly forces, or foreign nationals working inside the perimeter can affect the outcome of insurgent attacks outside the wire. In addition, black markets materialize, which can undercut good order and disci-

pline, encourage the pilfering of supplies, and even lead to the sale of weapons by contractors and others that may enable the enemy.

Two modern examples show how the nexus of criminal activity can enable anticoalition forces. In 2006 illegal arms sales in the International Zone in Baghdad, Iraq, threatened internal security and provided potential enablers to insurgent groups and criminal elements.³⁴ In 2009 at JBB, investigators discovered a black market fuel theft operation that was fed by a supporting network of illegal fueling points off the installation, potentially funding groups that were attacking the base.³⁵ Both illustrate that even places regarded as secure are ultimately porous because trusted elements with access will ultimately use that access for nefarious purposes. Active and skilled law enforcement professionals provide the means necessary to identify the seams and gaps in the defense that would otherwise go undetected.

The need for law enforcement expertise is often overlooked, but history captures its necessity. In World War II, Gen William Tunner found himself struggling to resupply Chinese and American forces over the famed Hump: the Himalayan Mountains. The operational demands of this mission were extreme, but the pilferage of food and other supplies by indigenous workers became a mission impediment. Tunner's leaders quickly adapted to this internal mission threat and created a police force to combat the theft. General Tunner described the effort:

Our base at Barrackpore north of Calcutta was patrolled by one of the most unique police forces in the Army Air Force—a group of 259 Indians recruited from pension policemen, veteran soldiers, and retired Indian army officers. They were divided into four companies, one composed of Ghurkas, one of Sikhs, one of Pathans, and one of Hindus, each under the command of an American enlisted man. The American noncoms conscientiously studied the religion, customs, and language of the men in their companies, and could give them a verbal pat on the back—or chew them out—in their own language. Petty thievery decreased noticeably after the Indians began patrolling the beat.³⁶

Effective law enforcement operations deny the enemy and his support network the ability to pilfer supplies and materials. Moreover, such operations allow coalition forces to concentrate on the mission. Law enforcement closes important avenues of ingress and egress used by smugglers and thieves and denies the enemy the ability to exploit these porous avenues of base access. Finally, the need to establish a healthy operating environment cannot be overstated. The stresses of combat create an environment rich in problems like sexual assault,

vehicle accidents, and dereliction of duty, all of which can poison unit cohesion, dampen mission focus, and sap military strength. Skilled law enforcement personnel provide the base defense key mission enablers, both internally and OTW.

9. At the End of the Day, Tactical Leadership Is the Linchpin.

One cannot simply create dynamic leaders in predeployment training. Doing so takes time and care in their development. But it is certainly a necessity. After all, in today's environment, poor tactical decisions can have profound strategic consequences. Noted COIN expert David Kilcullen summarized it best:

Rank is nothing; talent is everything. Not everyone is good at counterinsurgency. Many people don't understand the concept, and some who do can't execute it. It is difficult, and in a conventional force only a few people will master it. Anyone can learn the basics, but a few "naturals" do exist. Learn how to spot these people and put them into positions where they can make a difference. Rank matters far less than talent—a few good men under a smart junior non-commissioned officer can succeed in counterinsurgency, where hundreds of well-armed soldiers under a mediocre senior officer will fail.³⁷

Leaders should identify and nurture leadership talent at every step of the promotion chain. We must strive to challenge these leaders early and often with exercises and training that encourage adaptive thinking and leadership beyond the normal scope of tactical kinetic operations. Failure to do so will make base defense in a complex, irregular warfare environment much less successful in a future war. It is gratifying to see in the leadership of the USAF a growing acknowledgement of the importance of tactical leadership, including its use of the vignette "Security Police Defense of Tan Son Nhut and Bien Hoa Air Bases, January 1968" in its leadership doctrine.³⁸ Franklin Ybarbo, an Airman during the battle at Tan Son Nhut, sums up his view of successful base defense by stating, "The American initiative and ingenuity was enough to defeat the enemy."³⁹

Today's junior leaders must comprehend and display competency in a broad range of tactical situations in complex environments. Just as the two-ship or four-ship formation in the fighter pilot community is the cornerstone of flying tactical operations, small unit leadership has been and will continue to be the foundation of tactical effectiveness. As noted in Brig Gen Allen J. Jamerson's foreword to this book, there is a need for strong tactical leadership. He states that "in addi-

tion to smart, adaptable leaders, we need to develop competent tactical leaders capable of defending air bases in these uncertain environments. Future Airmen should be challenged early in their careers during diverse training scenarios to learn and mature the basics of traditional combat base defense operations supporting complex situations such as those presented by stability and support operations.”

It is also important to note that the definition of *tactics* has decidedly changed. Tactics include more than the exchange of gunfire or simply the application of violence against an enemy. Now, tactics also mean the nonkinetic aspects of irregular warfare operations such as liaising with local indigenous leaders or interacting with nongovernmental agencies—skills not easily acquired. The USAF should focus more resources on training junior leaders and noncommissioned officers in the art of making tactical decisions in complex environments throughout their careers.

In short, Airmen need to take the concept of “mission command” seriously to ensure they are proactive and disciplined in taking the initiative within the established commander’s intent. To be effective joint leaders, Airmen should have a thorough understanding of the operational environment, build and mentor adaptive teams, understand the organizational culture of joint and friendly forces, and create opportunities for action through innovation and relationship building.

10. Nowhere to Hide: Anticipate Future Threats and Countermeasures.

Protecting air bases and aerospace assets in the future will grow exponentially more complex and expensive due to the promulgation of technology, abundance of open-source intelligence, and growth in adversary capabilities. Looking forward, traditional threats like airborne assault, IDF through rockets and mortars, and direct attack by suicide squads will continue to be staple courses of potential enemy action. It is important to examine emerging threats enabling new modes of air base attack, including the development of precision munitions, the spread of RPVs, the proliferation of shoulder-launched SAMs, a growing insider threat, and other variants of a new technological bounty for terrorists and insurgents. Looking to the future, the defenses of air assets will become even more problematic with

ever-increasing vulnerabilities across the spectrum of threats enabled by technology and a growing insider threat. This growth and proliferation of technology will enable small groups to gain an even greater advantage against base defenders and air operators.

Airmen need to thoughtfully consider the probability of these emerging threats and the associated costs of ensuring continued operations. The simple application of an Airman with a rifle to fill a gap in the defensive perimeter used to solve base defense problems. That is no longer the case. Well-defended air bases drive the enemy to explore alternative means to affect air operations. Naturally, any rational actor desires the quickest, cheapest route to success once a target is selected.

When examining the threat, however, one should constantly ask what the enemy will target, because it is not necessarily aircraft on the ground. Targets and objectives depend upon the attackers, ranging from terrorist groups to conventional forces to special operations, and upon the political objectives and actual capabilities they can bring to bear against an air base. In Vietnam, enemy forces found ground attacks against airfields a drain on their resources. As a result, they adapted their tactics to focus on disrupting versus destroying air operations because “whether the raids resulted in aircraft, facility, or runway damage, sortie rates were impaired.”⁴⁰ Both Iraq and Afghanistan provide modern examples of IDF attacks that temporarily closed airfields, thus delaying sorties with a negative mission impact.

Understanding and countering these growing threats will play a major role in the ability of the United States and its allies to effectively project airpower in the future. One solution is to base aircraft as far from hostilities as possible, which strains aircraft and aircrews with longer flight times, reduces potential loiter times, and potentially reduces the persistence of airpower. However, it does not address the likely requirement for mobility aircraft to land near or in the combat zone to provide support to ground operations. Nor does remote basing address the technological means of attack through cyberspace, reach and lethality of technologically enabled terrorists, or special forces engagement by a determined enemy. These concerns require Airmen to conduct a truly full-spectrum threat analysis and ensure these potential vulnerabilities are addressed in force-protection planning.

Aircraft are extremely fragile. One well-placed mortar round can render several hundred million dollars' worth of aircraft useless. The destruction of a barracks occupied by the technical experts needed for air operations, such as the pilots or aircraft mechanics, would render air platforms useless. The USAF and coalition forces will have to make hard choices in the future about ID, which will be driven by mission requirements, economic constraints, and the growing threat posed by a determined enemy enabled by some of the aforementioned technology. That threat ring is no doubt growing. Airmen and joint leaders will need to stay abreast of these growing threats during the coming interwar period or risk the elimination and degradation of air assets at the onset of the next hard-fought campaign.

Airmen should also learn from history and apply the lessons. For instance, the attack on Hickam Field during the Japanese bombing of Pearl Harbor showed most US aircraft were destroyed on the ground because they were parked wingtip to wingtip, simplifying strafing runs for Japanese aircraft and creating added destruction from secondary explosions. We see examples of that today in which billions of dollars worth of aircraft are parked wingtip to wingtip, making it easier for one mortar round or a tornado to destroy mission-critical aircraft. All Airmen, regardless of background, need to think about how best to protect air bases, the aircraft and missions those bases support, and the joint force and its coalition partners to ensure we can be successful in an environment with severe fiscal constraints. Finally, the USAF must not learn the wrong lessons from Iraq and Afghanistan. While there were many successes, the enemies in both of these conflicts were not optimally trained, organized, or equipped. It would be wrong to simply cite air base defense efforts in Iraq and Afghanistan as the proper template for future defense. Vietnam showed what a determined, well-trained, and committed foe could accomplish in attacking air bases. Only the 2012 Camp Bastion attack in Afghanistan remotely resembles the level of complexity and effectiveness of airfield attacks in Vietnam. In the future, the merging of competent enemy forces with precision weapons and modern technology will likely be the impetus for real change needed to treat the defense of airfields with the seriousness of purpose it truly deserves. Given the replacement cost and lengthy manufacturing timetables of modern aircraft, the USAF and its coalition partners would not be able to sustain Vietnam-level ground attack losses.

Conclusion

The USAF needs thinkers, especially when shaping a base defense strategy for its dispersed and threatened airfields. Central to this effort is ensuring leaders and Airmen of all ranks and backgrounds understand the demands of base defense and the effects, positive and otherwise, of their own actions in the battlespace. Understanding the complexity of irregular warfare operational environments and seeking countermeasures to growing threats will continue to play a major role in the ability to project airpower effectively in the future. The USAF should invest in studying, analyzing, and programming to meet the threat posed by an ever more complicated base defense threat. Additionally, the USAF should consider tracking and analyzing each air base attack using a database and resources on par with the Air Force Research Institute's Theater History of Operations Reports (THOR) database, which plots and tracks every bomb dropped in the history of US airpower.⁴¹ Using research and mapping tools pioneered by THOR, the USAF could learn much from the historical data, patterns, and development of air base attacks.

The USAF would do well to improve the understanding of base defense principles and operational considerations with senior leaders beyond security forces. Per Major General Bishop's earlier comment, it is essential that the USAF develop such understanding collaboratively, so as to avoid the creation of an antagonistic and territorial attitude with its sister services. Brigadier General Deale added, "The senior Airman at any location has got to be equipped to lead the base defense. We also need defense force commanders who know their business and can effectively shape the perspectives of the senior Airman on scene to ensure an effective defense."⁴² One point to consider is the use of the term "integrated defense." While the concepts of ID have much improved the way in which security forces conceptualize defense, the term itself does not resonate with leaders at all levels. During the research for this book, non-security forces general officers rarely referred to the term and preferred to cite "base defense" or "air base defense." On a number of occasions, general officers reviewing or contributing to this book project asked if the acronym "ID" referred to "identification." Perhaps the USAF should keep the principles outlined in new "integrated defense" doctrine but change the name to something that resonates more clearly with leaders and is more specific to the task at hand like "air base defense." After all, the

goal is not just to improve the concepts of base defense but also to increase its buy-in and understanding. In short, the art of base defense is by its very nature a collaborative effort, requiring leaders who understand the principles of base defense, receive the right level of training and preparation for leading base defense in a complex environment, and can communicate and synchronize their efforts through effective partnerships in the battlespace.

Finally, the United States is now committed to a strategic rebalance to the Asia-Pacific, both military and diplomatic. The military component is comprised of a new and evolving concept called AirSea Battle (ASB). In July 2009, the secretary of defense directed the Navy and Air Force to develop ASB to address the challenges of antiaccess/area denial (A2/AD), which analysts view as the central challenge of the future operational environment in the Pacific.⁴³ The central premise of A2/AD is for an enemy force to deny the United States and its allies the access to bases or sea lanes that would allow it to project forces into the region and respond to aggression. However, much of the focus of A2/AD has been on the employment of long-range precision weapons and evolving technologies by potential enemies. Literally nothing has been written about the air base threats posed by enemy-aligned indigenous groups, insurgents, and special forces, all of which could play a role in a final line of denial under the A2/AD concept.

ASB must holistically address all of these threats. ASB's name is designed to evoke and template the success of AirLand Battle (ALB), an operational concept jointly developed by the Army and USAF in the early 1980s. As part of ALB, the services developed the "31 Initiatives" to address gaps and seams in their operational approach, improve and synchronize procurement, and reduce redundancies. Four of these initiatives dealt specifically with the defense of air bases.⁴⁴ If ASB is to guarantee access of friendly forces to project military power within the theater of operations, then a similar accommodation must be made in agreeing on a joint approach to meeting the threat to air bases. As such, the lessons contained in this book and the aforementioned conclusions should help inform leaders on the requisite need to include integrated defense of air bases as a component of future joint ASB agreements.

These propositions in their totality show air base defense to be a challenge that can be met only by agile, dynamic thinkers, backed by an Air Force and joint force that value air base defense as a central

component to airpower itself. The complexity of the threat posed to air bases will only grow. It is central to these propositions that Airmen debate and engage with one another about the future of air base security and the required defenses for a multitude of operational environments like those found in irregular warfare and, in particular, counterinsurgency.

Notes

1. Alan Vick, *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases* (Santa Monica, CA: RAND, 1995), 108, http://www.rand.org/content/dam/rand/pubs/monograph_reports/2006/MR553.pdf.

2. Maj Gen Brian T. Bishop, commander, Carl A. Spaatz Center for Officer Education, interview with Col Shannon W. Caudill, 17 January 2014.

3. Brig Gen Thomas H. Deale, vice commander, Carl A. Spaatz Center for Officer Education, interview with Col Shannon W. Caudill, 17 January 2014.

4. US Army Field Manual (FM) 3-24, *Counterinsurgency*, December 2006, 1–26.

5. Josh Bersin, "5 Keys to Building a Learning Organization," *Forbes*, 18 January 2012, <http://www.forbes.com/sites/joshbersin/2012/01/18/5-keys-to-building-a-learning-organization/>.

6. *Ibid.*

7. Brig Gen Robert D. Thomas, commander, Holm Center for Officer Accessions and Citizen Development, interview with Col Shannon W. Caudill, 15 January 2014.

8. Air Force Doctrine Document (AFDD) 1, *Air Force Basic Doctrine, Organization, and Command*, 14 October 2011, 37.

9. Quentin Sommerville, "Afghanistan: Taliban Insurgents in Attack on NATO Base," *British Broadcasting Company (BBC)*, 13 November 2010, <http://www.bbc.co.uk/news/world-south-asia-11749196>.

10. Air Force Policy Directive (AFPD) 31-1, *Integrated Defense*, 28 October 2011, 8.

11. *Ibid.*, 2.

12. Bishop, interview.

13. US Army, "Army Programs: Counter-Rocket, Artillery, Mortar (C-RAM)," 2006, <http://www.dote.osd.mil/pub/reports/FY2006/pdf/army/2006cram.pdf>.

14. Bishop, interview.

15. David H. Ucko, "Lessons from Basra: The Future of British Counter-insurgency," *Survival* 52, no. 4 (21 July 2010): 131–58.

16. David J. Kilcullen, "Twenty-Eight Articles: Fundamentals of Company-Level Counterinsurgency," *IO Sphere*, Summer 2006, <http://www.au.af.mil/info-ops/iosphere.htm#06summer>.

17. Deale, interview.

18. Gen Gary Luck, Col Mike Findlay, and the Joint Warfighting Center Joint Training Group, *Insights and Best Practices: JTF Level Command Relationships and Joint Force Organization*, Focus Paper no. 4 (Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, November 2007), 5, <https://intelshare.intelink>

.gov/sites/jko/starfish/education/Shared%20Documents/Insights%20and%20Best%20Practices,%20Joint%20Warfighting%20Center/Insights_and_Best_Practices_-_JTF_Level_Command_Relationships_and_Joint_Force_Organization.pdf.

19. Deale, interview.
20. Maj Jeffery Becker, USAF, e-mail correspondence with Col Shannon W. Caudill, 4 May 2013.
21. Air Force Doctrine Document 3-10, *Force Protection*, 3, July 28, 2011.
22. Winston S. Churchill, *The Second World War*, vol. 3, *The Grand Alliance* (Boston: Houghton Mifflin, 1985), 692–93.
23. Capt Lucas Hall, commander, 821st Security Forces Squadron, Thule AB, Greenland, e-mail correspondence with Col Shannon W. Caudill, 18 April 2013.
24. Deale, interview.
25. Rohan Gunaratna, “Intelligence Failures Exposed by Tamil Tiger Airport Attack,” *Jane’s Intelligence Review*, 1 September 2001.
26. Ibid.
27. Roger P. Fox, *Air Base Defense in the Republic of Vietnam, 1961–1973* (Washington, DC: Office of Air Force History, 1979), 171.
28. Col Timothy Farrell, USAF, retired, e-mail correspondence with Col Shannon W. Caudill, 4 May 2013.
29. Air Force Doctrine Document (AFDD) 3-2, *Irregular Warfare*, 15 March 2013, 34.
30. Deale, interview.
31. Gian P. Gentile, “A Strategy of Tactics: Population-centric COIN and the Army,” *Parameters* 39, no. 3 (Autumn 2009), 2, <http://strategicstudiesinstitute.army.mil/pubs/parameters/Articles/09autumn/gentile.pdf>.
32. Office of Community Oriented Policing Services, US Department of Justice, “Community Policing Defined” (Washington, DC: US Department of Justice, January 2008), 3, <http://www.cops.usdoj.gov/Publications/e030917193-CP-Defined.pdf>.
33. AFPD 31-1, 3.
34. Special Inspector General for Iraq Reconstruction, *Quarterly Report to Congress* (Washington, DC: US Departments of Defense and State, 31 July 2006), 183, http://www.sigir.mil/files/quarterlyreports/July2006/Report_-_July_2006.pdf#view=fit; and Col Kenneth R. Dahl, “Summary Report of Det 3, 732 ESFS, Mission Accomplishments,” Baghdad, Iraq, memorandum, 2 August 2006.
35. Lt Col Keith McCormack, commander and air provost, 332nd Expeditionary Security Forces Squadron, interview and e-mail correspondence with Col Shannon W. Caudill, 8 April 2013.
36. William H. Tunner, *Over the Hump* (New York: Duell, Sloan, and Pearce, 1964), 96.
37. Kilcullen, “Twenty-Eight Articles,” 34.
38. Air Force Doctrine Document (AFDD) 1-1, *Leadership and Force Development*, 8 November 2011, 66.
39. Ibid.
40. Michael P. Buonaugurio, “Air Base Defense in the 21st Century: USAF Security Forces Protecting the Look of the Joint Vision” (paper, Marine Corps Command and

Staff College, Quantico MCB, VA, 2001), 8, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA401262>.

41. Air Force Research Institute, "Theater History of Operations Reports," 8 March 2014, <http://www.au.af.mil/au/afri/thor/>.

42. Deale, interview.

43. Air Sea Battle Office, Department of Defense, *AIR-SEA BATTLE: Service Collaboration to Address Anti-Access & Area Denial Challenges*, May 2013, 1, <http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf>.

44. Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, DC: Office of Air Force History, 1987), 48, www.afhso.af.mil/shared/media/document/AFD-100525-029.pdf. *The specific air base ground defense initiatives were: (3) Counter Heliborne Assault, (8) Air Base Ground Defense, (9) Air Base Ground Defense Flight Training, (11) Mobile Weapon System.*

Afterword

Dr. William T. Dean III

Defending air assets on the ground in the midst of an insurgency has been a challenge over the course of history. One need only look at the Americans in Vietnam and the Russians in Afghanistan to see how airpower can be tested when its aircraft and people are sufficiently threatened in the performance of their mission. Sound air base defense (ABD) begins with ensuring that airpower leaders understand counterinsurgency (COIN) theory and how it applies to securing the terrain affecting air operations. This book, an anthology of essays on ABD and COIN, explores the diverse issues associated with defending air assets and joint personnel in a demanding and complex COIN environment. It provides a service to the Airmen of the US Air Force (USAF) and leaders of the joint force by adding to the historiography and COIN lessons learned needed to improve operations in irregular warfare (IW) environments in the future.

American Airmen are today confronted with the demands of IW, formerly known as low-intensity conflict (LIC), and its subset, COIN. Many Airmen come to the task with disdain and hope that fighting this type of war is an anomaly—a side show from preparing for a future conventional war, the kind of war “we want to fight.” In his 1997 essay in *Paths of Heaven*, Dr. Dennis M. Drew noted that “the Air Force has ignored LIC as much as possible, preferring to think of it as little more than a small version of conventional war. . . . The reluctance of the world’s most powerful air force to address the peculiarities of LIC, combined with the predictions of many people that such a conflict will be more common in the future, creates an important void in US airpower theory.”¹

The US Army, Marines Corps, and USAF were anemic at best in their study and development of doctrine of IW since the Vietnam War. In the 1980s, the focus was AirLand Battle in Central Europe against the Soviets. When the Cold War ended, there was an intellectual vacuum and perhaps confusion. In the twenty-first century, when the United States began to fight a global war against al-Qaeda and its affiliates, it was intellectually unprepared. The Army and Marines scrambled to develop doctrine, which they accomplished in 2006 with the herculean efforts of Gen David Petraeus. Army Field

Manual (FM) 3-24, *Counterinsurgency*, is a sophisticated population-centric approach; however, airpower was relegated to an annex. The new doctrine emphasized nonkinetic approaches to COIN. In 2007 the USAF responded with its own doctrine: Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, and AFDD 3-22 *Foreign Internal Defense (FID)*.² Theorists and operators inside the USAF quickly realized that this doctrine was anemic and superficial. In the fall of 2011, the USAF began rewriting this doctrine, which was published 15 March 2013 as an improved and sophisticated IW doctrine—AFDD 3-24, *Irregular Warfare*. Despite the much-improved USAF doctrine, the question of base defense is not included, nor did its authors pay much attention to combat support, synchronization with the ground battlespace owner, or nonkinetic approaches to COIN. Observers expect IW environments to be the predominant setting for US forces for the foreseeable future, yet the USAF fails to render its own historical successes in IW any justice because it does not highlight or publish much about this historiography. The USAF must do a better job of relating the stories and lessons learned of its twenty-first century IW campaigns in Colombia, the Sahel, the Horn of Africa, Iraq, Afghanistan, and the Philippines. In short, there needs to be a deliberate effort to educate Airmen on past and future roles of airpower and Airmen in IW campaigns.

In May 2012, the US Army and Marines began to rewrite FM 3-24. Observers expect airpower will receive much more attention in the revision. General Petraeus was quoted as saying that COIN campaigns are the equivalent of graduate-level study due to the multidisciplinary understanding required to comprehend the subject, while conventional warfare is undergraduate-level work. This means Airmen and Soldiers must study the latter as part of their preparation to conduct an IW campaign. This requires a more systematic study of IW at all levels of professional military education. Currently, the USAF Special Operations School at Hurlburt Field, Florida, offers the only detailed study of IW. The study of IW is not just for USAF Special Operations Command (AFSOC), and it is not a “boutique” field of study; rather all Airmen should study the past, present, and future of IW alongside conventional air warfare, nuclear war theory, and cyber operations.

The USAF and other air forces have a venerable history of operations in IW. For the United States alone, scholars can point to the air commandos in Burma and other unconventional warfare (UW) op-

erations during World War II. Maj Gen Edward Lansdale, USAF, developed a sophisticated UW campaign in the Philippines in the 1950s that went far beyond aviation. He developed human intelligence (HUMINT) networks, engaged in FID with Philippine air and ground forces, and launched innovative and effective psychological operations (today called military source operations). In Tibet during the 1950s, famous IW aviators like Harry C. “Heinie” Aderholt led effective UW operations, which were followed by others in Laos, Cambodia, and Vietnam a decade later. During the Korean War, the USAF had the best HUMINT networks and launched effective UW campaigns there. In Vietnam, Operations Farmgate and Jungle Jim were the largest USAF FID operations ever, and yet scholars have produced very little serious work regarding them. Particularly in Vietnam, base defense facilitated these other IW operations. In El Salvador in the 1980s, US advisors showed the Salvadorans how to develop ABD for their newly enlarged air force. Thus, ABD is directly related to FID, a fact that has borne itself out in operations in Colombia. The USAF needs to encourage more research and publication of IW- and COIN-related histories to adequately capture this important component of its mission and history. Currently, there are either superficial or classified studies on this topic. There is a great deal of work and study to be done; this book is an important step in addressing this shortfall.

If Airmen will commit to the study of IW, the effort will help to develop and grow IW leaders who are fully prepared to play vital roles in the joint fight. Some of this involves taking a broader view of IW. The role of USAF ground-defense personnel, namely security forces, is often ignored but is crucial in IW, not only for base defense but also for the development of FID and HUMINT networks. HUMINT is absolutely essential for effective IW air campaigns. In the 1990s, the USAF abandoned HUMINT squadrons, but approximately two years ago, this capacity was revived with the creation of a HUMINT squadron. In 2006 it was a US intelligence officer who found the hiding place of Abu Musab al-Zarqawi, the leader of al-Qaeda in Iraq, resulting in an air strike that eliminated this dangerous terrorist. With a more robust HUMINT capacity, one would hope that USAF ABD will be even more effective. Thus, changes must be made in organizational structure and emphasis in operations to grow IW leaders.

This point is well articulated in the book *The Fourth Star*, which details the COIN campaign in Iraq. It captures a scene in which Gen

George W. Casey, Jr., the newly appointed commanding general in Iraq, queries his staff on COIN:

“Okay, who’s my counterinsurgency expert?” asked General Casey, sounding impatient. It was his first day in command and his first meeting with the staff he had inherited from General Sanchez, who had left Iraq for good that morning. A dozen Army, Navy, Air Force, and Marine officers sent to Iraq from posts around the world stared at him, stumped by his question. Finally Air Force major general Steve Sargeant spoke up. He had spent his career flying jets, an experience that was largely irrelevant to a fight against low-tech Iraqi guerrillas. “I guess that must be me, sir,” said the general, who was in charge of strategic plans at headquarters. The Air Force officer’s hesitant answer drove home to Casey how little progress the military had made during its first year in coming to grips with the kind of war it was fighting.³

One must hope that by improving IW blocks in professional military education and ongoing professional study, a future USAF general will be able to answer this query in the affirmative with assurance. Growing prepared future IW leaders should be a goal for all of the services. The Air Advisor Academy at McGuire AFB, New Jersey, and courses at Hurlburt are helpful, but more still needs to be done. In the Iraq and Afghanistan campaigns, high-ranking officers arrived in theater with minimal IW and COIN training. The lessons learned from the campaigns of the twenty-first century have not been well incorporated into training and education. The Air Staff’s A9, the directorate responsible for analyses, assessments, and lessons learned, must be more directly involved in shaping education and training. There is no USAF equivalent of the Army’s Combined Arms Center. Here, Airmen could learn from the Army and conduct some needed reforms in education, training, organization, and personnel. Simultaneously, the USAF needs to avoid stovepiping in regard to the roles and missions of airpower. Ultimately more cross-fertilization and an acceptance that IW mission sets will remain in high demand are needed.

This book is a step in getting Airmen to think more broadly about airpower and IW. Excessive focus on conventional missions and the potential threats in Asia will render the USAF unprepared to face current and future IW mission demands. The Soviet Union made this mistake in the 1980s in Afghanistan. It failed to develop adequate ABD, and the mujahedin were able to attack and do great damage to Russian air operations. Americans, especially Airmen, do not like fighting IW and are tempted to write off such campaigns as anomalies so they can return to conventional campaigns, with which they are

much more comfortable. This is a serious mistake, one that shows an American propensity to disavow history for political expedience. This book is an important part of the intellectual preparation needed for future IW campaigns, illustrating how to create the stable operating environment needed for air operations through sound ABD practices.

Notes

1. Dennis M. Drew, "Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 321.
2. The USAF has since renumbered AFDD 2-3 as AFDD 3-24, bringing the publication in line with Army and joint doctrine numbering.
3. David Cloud and Greg Jaffe, *The Fourth Star: Four Generals and Their Epic Struggle for the Future of the United States Army* (New York: Three Rivers Press, 2009), 161.

Abbreviations

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|---------|--|
| 1AFDS | No. 1 Airfield Defence Squadron |
| 2AFDS | No. 2 Airfield Defence Squadron |
| A2/AD | antiaccess / area denial |
| AB | air base |
| ABD | air base defense |
| ABN BDE | airborne brigade |
| ACO | North Atlantic Treaty Organization Allied Command Operations |
| ACS | air commando squadron |
| ACU | Army combat uniform |
| ACW | air commando wing |
| ADF | airfield defense force |
| ADG | aerodrome defense guard |
| AECTU | air expeditionary combat task unit |
| AEF | air and space expeditionary force |
| AETF | air and space expeditionary task force |
| AEW | air expeditionary wing |
| AFDD | Air Force doctrine document |
| AFEC | Air Force Expeditionary Capability |
| AFI | Air Force instruction |
| AFOSI | Air Force Office of Special Investigations |
| AFP | Royal Canadian Air Force Police |
| AFPD | Air Force policy directive |
| AFSOC | Air Force Special Operations Command |
| ALB | AirLand Battle |
| AMS | air mobility squadron |
| AO | area of operation |
| AOC | air operations center |
| APOD | aerial port of debarkation |
| ARVN | Army of the Republic of Vietnam |
| ASB | AirSea Battle |
| ASF | airfield security force |
| AT | antiterrorism |
| AU | Air University |
| AWACS | airborne warning and control system |

| | |
|-----------|---|
| BCT | brigade combat team |
| BDF | base defense force |
| BDG | base defense group |
| BDOC | base defense operations center |
| BOS-I | base operating support integrator |
| BSO | battlespace owner |
| BSZ | base security zone |
| C2 | command and control |
| C4ISR | command, control, communications, computer and intelligence, surveillance, and reconnaissance |
| CA | civil affairs |
| CAA | close approach area |
| CAP | combat air patrol |
| CAS | Canadian Air Staff |
| CAS | close air support |
| CATGME | Canadian Air Task Group Middle East |
| CBG | Canadian Brigade Group |
| CBRN | chemical, biological, radiological, and nuclear |
| CDS | chief of the Defence Staff |
| CF | Canadian Forces |
| CFPM | Canadian Forces provost marshal |
| CFPSAA | <i>Commandement des forces de protection et de sécurité de l'armée de l'air</i> |
| CI | counterintelligence |
| CIMIC | civil-military cooperation |
| CINCPAC | commander in chief, Pacific Command |
| CINCPACAF | commander in chief, Pacific Air Forces |
| CMAC | Capital Military Assistance Command |
| CMBG | Canadian mechanized brigade group |
| CMD | capital military district |
| COA | course of action |
| COIN | counterinsurgency |
| COMAFFOR | commander, Air Force forces |
| COMUSMACV | commander, US Military Assistance Command, Vietnam |
| CONOP | concept of operations |
| CONUS | continental United States |

| | |
|--------|---|
| COPS | Centralized Operations Police Suite |
| CPA | coalition provision authority |
| CPA | <i>commandos parachutistes de l'air</i> |
| CRAM | counterrocket, artillery, and mortar |
| CRG | contingency response group |
| CRS | Congressional Research Service |
| CSAF | Chief of Staff, United States Air Force |
| CSS | combat service support |
| CSW | contingency support wing |
| CT | counterterrorism |
| CTO | counterterrorism operations |
| CTZ | corps tactical zone |
| D&S | defense and security |
| DACA | Defense Academy for Credibility Assessment |
| DAPM | deputy assistant provost marshal |
| DASC | direct air support center |
| DCHC | Defense Counterintelligence and Human Intelligence Center |
| DCIO | defense criminal investigative organization |
| DCIS | Defense Criminal Investigative Service |
| D-DEx | Defense Data Exchange |
| DFC | defense force commander |
| DFE | DOD forensic enterprise |
| DFP | defensive fighting position |
| DHS | Department of Homeland Security |
| DIA | Defense Intelligence Agency |
| DOD | Department of Defense |
| DOD IG | Department of Defense Inspector General |
| EA | executive agent |
| ECP | entry control point |
| EOD | explosive-ordnance-disposal |
| ES | expeditionary skills |
| ESFG | expeditionary security forces group |
| ESFS | expeditionary security forces squadron |
| EST | expeditionary skills training |
| ETASS | Enhanced Tactical Automated Security System |

| | |
|--------|--|
| FAC | forward air controller |
| FAS | Federation of American Scientists |
| FBI | Federal Bureau of Investigation |
| FDC | fire direction center |
| FEBA | forward edge of the battle area |
| FFV | Field Force Vietnam |
| FID | foreign internal defense |
| FM | US Army field manual |
| FOL | forward operating location |
| FP | force protection |
| FPI | force protection intelligence |
| FPSSG | Force Protection Senior Steering Group |
| FSE | fire support element |
| GBAD | ground-based air defense |
| GRDEF | ground defense |
| GS | general support |
| GTO | ground tasking order |
| GWOT | global war on terrorism |
| HMMWV | high-mobility multipurpose wheeled vehicle |
| HN | host nation |
| HS | helicopter squadron |
| HUMINT | human intelligence |
| IBD | integrated base defense |
| ID | integrated defense |
| IDF | indirect fire |
| IED | improvised explosive device |
| IRF | internal response force |
| ISAF | International Security Assistance Force |
| ISR | intelligence, surveillance, and reconnaissance |
| ISTAR | intelligence, surveillance, target acquisition, and reconnaissance |
| ITW | inside the wire |
| IVPS | Iraqi Vehicle and Pedestrian Screener |
| IW | irregular warfare |
| IZ | International Zone |
| JASG | Joint Area Support Group |

| | |
|-------------|---|
| JBB | Joint Base Balad |
| JCS | Joint Chiefs of Staff |
| JDOC | joint defense operations center |
| JET | joint expeditionary tasking |
| JFC | joint force commander |
| JIACG | joint interagency coordination group |
| JIATF–South | Joint Interagency Task Force–South |
| JISE | joint intelligence support element |
| JP | joint publication |
| JSA | joint service agreement |
| JSOTF | joint special operations task force |
| JSOU | Joint Special Operations University |
| JSTARS | joint surveillance target attack radar system |
| JTAC | joint terminal air controller |
| JTF | joint task force |
| JTTF | joint terrorism task force |
| KLu | <i>Koninklijke Luchtmacht</i> |
| L&O | law and order |
| LE | law enforcement |
| LFT | light fire team |
| LIC | low-intensity conflict |
| LLAD | low-level air defense |
| LRDG | Long Range Desert Group |
| LRP | long-range patrol |
| LSA | logistical support area |
| MACV | Military Assistance Command, Vietnam |
| MAF | Marine amphibious force |
| MAJCOM | major command |
| MANPADS | man-portable air defense system |
| MEB | Marine expeditionary brigade |
| METT-TC | mission, enemy, terrain and weather, troops and support available–time available and civil considerations |
| MOB | main operating base |
| MOOTW | military operations other than war |
| MP | military police |
| MRP | managed readiness plan |
| MSR | main supply route |

| | |
|-----------|--|
| MSTAR | man-portable surveillance and target acquisition radar |
| MWD | military working dog |
| MWR | Morale, Welfare, and Recreation |
| NAI | named area of interest |
| NATO | North Atlantic Treaty Organization |
| NBC | nuclear, biological, and chemical |
| NCIS | Naval Criminal Investigative Service |
| NCO | noncommissioned officer |
| NCOIC | noncommissioned officer in charge |
| N-DEx | National Data Exchange |
| NGO | nongovernmental organization |
| NVA | North Vietnamese Army |
| OCO | overseas contingency operations |
| OEF | Operation Enduring Freedom |
| OGRV | <i>Object Grondverdediging</i> |
| OIC | officer in charge |
| OIF | Operation Iraqi Freedom |
| OSD | Office of the Secretary of Defense |
| OSD-ADA&M | Office of the Secretary of Defense–Assistant Director of Administration and Management |
| OTW | outside the wire |
| PACAF | Pacific Air Forces |
| PAF | permanent air force |
| PAF | Philippine Armed Forces |
| PGM | precision-guided munitions |
| POO | point of origin |
| PSA | patrol and surveillance area |
| PSA | principal staff assistant |
| PSC | private security contractor |
| QRF | quick reaction force |
| QRT | quick reaction team |
| RAAF | Royal Australian Air Force |
| RAF | Royal Air Force |
| RAS | rear area security |
| RCAF | Royal Canadian Air Force |
| RCR | Royal Regiment of Canada |
| RCS | radar cross section |

| | |
|----------|--|
| ROC | required operational capability |
| ROE | rules of engagement |
| RPG | rocket-propelled grenade |
| RPV | remotely piloted vehicle |
| RVN | Republic of Vietnam |
| RVNAF | Republic of Vietnam Armed Forces |
| SAM | surface-to-air missile |
| SAS | Special Air Service |
| SAT | security alert team |
| SECPOL | security police |
| SF | USAF security forces |
| SF | US Army Special Forces |
| SFG | security force group |
| SFS | security forces squadron |
| SHARK | Showing Animals Respect and Kindness |
| SIGIR | Special Inspector General for Iraq Reconstruction |
| SO | special operations |
| SOF | special operations forces |
| SOS | special operations squadron |
| SP | security police |
| STO | survive to operate |
| STOL | short takeoff and landing |
| TAC | Tactical Air Command |
| TACON | tactical control |
| TACP | tactical air control party |
| TAOR | tactical area of responsibility |
| TASS | tactical automated security sensor |
| TASS | tactical air support squadron |
| TF | task force |
| THOR | Theater History of Operations Reports |
| TOC | tactical operations center |
| TSE | tactical security element |
| TTP | tactics, techniques, and procedures |
| UAE | United Arab Emirates |
| UCR | uniform crime reporting |
| UK | United Kingdom |
| UNPROFOR | United Nations Protection Force |
| USACIDC | US Army Criminal Investigation Command |

| | |
|------------|---|
| USAF | United States Air Force |
| USAFE | United States Air Forces in Europe |
| USCENTAF | United States Central Command Air Forces |
| USCENTCOM | United States Central Command |
| USD (AT&L) | under secretary of defense for acquisition, technology, and logistics |
| USD(I) | under secretary of defense for intelligence |
| USMACV | United States Military Assistance Command, Vietnam |
| USMC | US Marine Corps |
| USO | United Service Organization |
| UW | unconventional warfare |
| VBIED | vehicle-borne improvised explosive device |
| VC | Viet Cong |
| VCDS | vice chief of the Canadian Defence Staff |
| VNAF | Vietnamese Air Force |
| VR | visual reconnaissance |
| WASF | wing auxiliary security force |
| WMD | weapon of mass destruction |

Bibliography

Books

- Arquilla, John, and David Ronfeldt. *Swarming and the Future of Conflict*. Santa Monica, CA: RAND, 1995.
- Ballard, Jack S. *Development and Employment of Fixed-Wing Gunships, 1962–1972*. Washington, DC: Government Printing Office (GPO), 1982.
- Ballard, Richard F. *U.S. Power Projection Capability and Rear-Area Security*. Arlington, VA: Institute of Land Warfare, 1996.
- Barnett, Thomas P. M. *The Pentagon's New Map: War and Peace in the Twenty-First Century*. New York: G. P. Putnam's Sons, 2004.
- Beckett, Ian F. W. *Modern Insurgencies and Counter-insurgencies: Guerrillas and Their Opponents since 1750*. London: Routledge, 2001.
- Berger, Carl. *The United States Air Force in Southeast Asia: 1961–1973*. Revised ed. Washington, DC: GPO, 1984.
- Bowden, Mark. *Black Hawk Down: A Story of Modern War*. New York: Atlantic Monthly Press, 1999.
- Cairney, Paul D. *On Target: Bible-Based Leadership for Military Professionals*. Bloomington, IN: AuthorHouse, 2010.
- Churchill, Winston S. *The Second World War: Vol. 3, The Grand Alliance*. Boston: Houghton Mifflin, 1985.
- Clancy, Tom, Anthony Zinni, and Tony Koltz. *Battle Ready*. New York: G. P. Putnam's Sons, 2004.
- Clausewitz, Carl von. *On War*. Princeton, NJ: Princeton University Press, 1976.
- Clearwater, John. *Canada's Nuclear Weapons: The Untold Story of Canada's Cold War Arsenal*. Toronto, Ontario: Dundurn Press, 1998.
- Clodfelter, Mark. *The Limits of Airpower: The American Bombing of North Vietnam*. New York: The Free Press, 1989.
- Cloud, David, and Greg Jaffe. *The Fourth Star: Four Generals and Their Epic Struggle for the Future of the United States Army*. New York: Three Rivers Press, 2009.
- Cohen, Eliot A. *Gulf War Air Power Survey*. Vol. 3: *Logistics and Support*. Washington, DC: GPO, 1993.

- Cordesman, Anthony H., and Abraham R. Wagner. *The Lessons of Modern War*. Vol. 3: *The Afghan and Falklands Conflicts*. Boulder, CO: Westview Press, 1990.
- Corum, James S., and Wray R. Johnson. *Airpower in Small Wars: Fighting Insurgents and Terrorists*. Lawrence: University Press of Kansas, 2003.
- Coulthard-Clark, Chris. *The RAAF in Vietnam: Australian Air Involvement in the Vietnam War, 1962–1975*. St. Leonards, New South Wales: Allen & Unwin, 1995.
- Crenshaw, Martha. “The Psychology of Political Terrorism.” In *Political Psychology: Contemporary Problems and Issues*, edited by Margaret Hermann, 379–413. New York: Jossey-Bass, 1986.
- . “Theories of Terrorism: Instrumental and Organizational Approaches.” In *Inside Terrorist Organizations*, edited by David C. Rapoport, 13–31. New York: Columbia University Press, 1988.
- Deere, David N., ed. *Desert Cats: The Canadian Fighter Squadron in the Gulf War*. Stoney Creek, Ontario: Fortress Publications, 1991.
- Donovan, R. J. “Nuclear Security Operations.” In *On Guard for Thee: The Silver Anniversary of the Security Branch*, edited by D. R. Johnson. Winnipeg, Manitoba: Jostens Canada, 1993.
- Douhet, Giulio. *The Command of the Air*. Translated and edited by Dino Ferrari, Joseph P. Harahan, and Richard H. Kohn. Tuscaloosa: University of Alabama Press, 2009.
- Engel, Byrl R. *The Forgotten Force: USAF Security Forces Role in the Joint Counterinsurgency Fight*. Maxwell AFB, AL: Air Command and Staff College, Air University, April, 2006.
- Fuller, J. F. C. *The Second World War, 1939–45: A Strategic and Tactical History*. New York: Duell, Sloan, and Pearce, 1948.
- Galula, David. *Counterinsurgency Warfare: Theory and Practice*. Westport, CT: Praeger Security International, 2006.
- Giap, Vo-Nguyen. *People’s War, People’s Army*. New York: Frederick A. Praeger, 1962.
- Gordon, John W. *The Other Desert War: British Special Forces in North Africa, 1940–1943*. Westport, CT: Greenwood Press, 1987.
- Grau, Lester W., and Ali Ahmad Jalali. *The Other Side of the Mountain: Mujahideen Tactics in the Soviet-Afghan War*. Quantico, VA: US Marine Corps Studies and Analysis Division, 2001.
- Greenhouse, Breton, Stephen J. Harris, William C. Johnson, and William G. P. Rawling. *The Official History of the Royal Canadian Air*

- Force*. Vol. 3. *The Crucible of War, 1939–1945*. Toronto, Ontario: University of Toronto Press, 1994.
- Grossman, David. “Defeating the Enemy’s Will: The Psychological Foundations of Maneuver Warfare.” In *Maneuver Warfare*, edited by Richard Hooker. Novato, CA: Presidio Press, 1993.
- Haas, Michael E. *Air Commando!: 1950–1975: Twenty-Five Years at the Tip of the Spear*. Hurlburt Field, FL: Air Force Special Operations Command, 1994.
- Hanzhang, Tao. *Sun Tzu’s Art of War: The Modern Chinese Interpretation*. New York: Sterling, 1990.
- Hilsman, Roger. *To Move a Nation: The Politics of Foreign Policy in the Administration of John F. Kennedy*. Garden City, NY: Doubleday, 1967.
- Hone, Thomas C. “Strategic Bombardment Constrained: Korea and Vietnam.” In *Case Studies in Strategic Bombardment*, edited by R. Cargill Hall, 469–526. Washington, DC: GPO, 1998.
- Hurley, Alfred F. *Billy Mitchell: Crusader for Air Power*. Bloomington: Indiana University Press, 1964.
- Johnson, Chalmers. *Revolutionary Change*. Stanford, CA: Stanford University Press, 1982.
- Keegan, John. *The Second World War*. New York: Viking, 1989.
- Kilcullen, David. *The Accidental Guerilla: Fighting Small Wars in the Midst of a Big One*. New York: Oxford University Press, 2009.
- Krepinevich, Andrew F., Jr. *The Army and Vietnam: Two Views*. Baltimore, MD: John Hopkins University Press, 1986.
- Lambeth, Benjamin S. *The Transformation of American Air Power*. Ithaca, NY: Cornell University Press, 2000.
- Leites, Nathan, and Charles Wolf, Jr. *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts*. Chicago, IL: Markham, 1970.
- Maloney, Sean M. *War without Borders: Canada’s NATO Brigade in Germany, 1951–1993*. Toronto, Ontario: McGraw-Hill Ryerson, 1997.
- McCuen, John J. *The Art of Counter-revolutionary Warfare: The Strategy of Counter-insurgency*. London: Faber, 1966.
- McNamara, Robert S. “United States Policy in Viet-Nam.” *Department of State Bulletin* 50, no. 1294 (13 April 1964): 562–70.
- McRaven, William H. *Spec Ops: Case Studies in Special Operations Warfare: Theory and Practice*. New York: Presidio Press Book, 1995.
- Meilinger, Phillip S. *The Paths of Heaven: The Evolution of Airpower Theory*. Maxwell AFB, AL: Air University Press, 1997.

- Morin, Jean, and Richard H. Gimblett. *Operation Friction: The Canadian Forces in the Persian Gulf, 1990–1991*. Toronto, Ontario: Dundurn Press, 1997.
- Murray, Williamson, and Allan R. Millett. *A War to Be Won: Fighting the Second World War*. Cambridge, MA: Belknap Press of Harvard University Press, 2000.
- Murray, Williamson, and Robert H. Scales. *The Iraq War: A Military History*. Cambridge, MA: Harvard University Press, 2003.
- National Commission on Terrorist Attacks upon the United States. *9/11 Report*. New York: St. Martin's Press, 2004.
- Ochmanek, David. *Military Operations against Terrorist Groups Abroad: Implications for the United States Air Force*. Santa Monica, CA: RAND, 2003.
- Oliver, Kingsley M. *Through Adversity: The History of the Royal Air Force*. Rushden, UK: Forces & Corporate Publishing, 1997.
- O'Neill, Bard E. *Insurgency & Terrorism: Inside Modern Revolutionary Warfare*. Washington, DC: Brassey's, 1990.
- Paget, Julian. *Counter-insurgency Operations: Techniques of Guerrilla Warfare*. London: Faber & Faber, 1967.
- Parker, Geoffrey. *The Cambridge Illustrated History of Warfare: The Triumph of the West*. New York: Cambridge University Press, 1995.
- Parunak, H. Van Dyke. "Making Swarming Happen." In *Conference Proceedings for Swarming: Network Enabled C4ISR*, edited by Donald Inbody, Christopher Chartier, Damian DiPippa, and Brian McDonald, 13–14 January 2003. McLean, VA: Joint C4ISR Decision Support Center, 25 June 2003.
- Playfair, I. S. O. *The Mediterranean and Middle East*. Vol. 2: *The Germans Come to the Help of Their Ally*. London: Her Majesty's Stationery Office, 1956.
- Reeves, Thomas. *A Question of Character: A Life of John F. Kennedy*. Rocklin, CA: Forum, 1997.
- Ricks, Thomas E. *The Gamble: General David Petraeus and the American Military Adventure in Iraq, 2006–2008*. New York: Penguin Press, 2009.
- Sidoti, Sal. *Airbase Operability: A Study in Airbase Survivability and Post-attack Recovery*. 2nd ed. Canberra, Australia: Aerospace Centre, 2001.

- Sorley, Lewis. *A Better War: The Unexamined Victories and Final Tragedy of America's Last Years in Vietnam*. San Diego, CA: Harcourt, 1999.
- Spector, Ronald. "The Road to Myitkyina." In *From Troy to Entebbe: Special Operations in Ancient and Modern Times*, edited by John Arquilla, 274–87. Lanham, MD: University Press of America, 1996.
- Swinton, E. D. *The Defence of Duffer's Drift*. Wayne, NJ: Avery Publishing Group, 1986.
- Tunner, William H. *Over the Hump*. New York: Duell, Sloan, and Pearce, 1964.
- van Creveld, Martin. *The Transformation of War*. New York: Free Press, 1991.
- Vick, Alan. *Snakes in the Eagle's Nest: A History of Ground Attacks on Air Bases*. Santa Monica, CA: RAND, 1995.
- Washington, George. *The Writings of George Washington from the Original Manuscript Sources, 1745–1799*. Vol. 33. Edited by John C. Fitzpatrick. Washington, DC: GPO, 1940.
- Zedong, Mao. *On Guerrilla Warfare*. Baltimore, MD: Nautical & Aviation Publishing, 1992.

Periodicals

- "A Shoulder-Fired Anti-aircraft Missile." *Aviation Week and Space Technology* 159, no. 24 (15 December 2003): 19.
- Anthony, R. "A Calibrated Model of the Psychology of Deterrence." *United Nations Office on Drugs and Crime Bulletin on Narcotics* 56, nos. 1 and 2 (2004): 49–64.
- Arana-Barradas, Louis A. "Bashur or Bust: Airmen Overcome Hardships to Open Airfield in Northern Iraq." *Airman* 47, no. 7 (July 2003): 31–37.
- Aylwin-Foster, Nigel. "Changing the Army for Counterinsurgency Operations." *Military Review*, November–December 2005, 2–15.
- Bebbe, Kenneth. "The Air Force's Missing Doctrine: How the US Air Force Ignores Counterinsurgency." *Air and Space Power Journal* 20, no. 1 (Spring 2006): 27–34.
- Bell, Raymond E. "To Protect an Air Base." *Airpower Journal* 3, no. 3 (Fall 1989): 4–18.
- Boot, Max. "The Struggle to Transform the Military." *Foreign Affairs* 84, no. 2 (March–April 2005): 103–18.

- Bowman, M. E. "Law Enforcement Technology, Intelligence, and the War on Terrorism." *Joint Force Quarterly* 46, no. 3 (2007): 14–19.
- Briar, David P. "Sharpening the Eagle's Talons: Assessing Air Base Defense." *Air and Space Power Journal* 18, no. 3 (Fall 2004): 65–74.
- Brown, Bryan D. "Doug." "U.S. Special Operations Command: Meeting the Challenges of the 21st Century." *Joint Force Quarterly* 40 (January 2006): 38–43.
- Caudill, Shannon W., Anthony M. Packard, and Raymund M. Tembreull. "Defending the Joint Force: Lessons Learned from Joint Base Balad." *Air and Space Power Journal* 25, no.1 (Spring 2011): 89–100.
- Corum, James S. "Air Power in Small Wars: Current Operations." *Baltic Security & Defence Review* 12, no. 1 (2010): 126–57.
- Dane, Bill. "Fighters under Attack." *Aviation Week and Space Technology* 164, no. 3 (16 January 2006): 18.
- Dudney, Robert S. "The Shadow of Khobar Towers." *Air Force Magazine* 88, no. 11 (November 2005): 2.
- Dunlap, Charles J., Jr. "Air-Minded Considerations for Joint Counterinsurgency Doctrine." *Air and Space Power Journal* 21, no. 4 (Winter 2007): 63–74.
- . "Developing Joint Counterinsurgency Doctrine: An Airman's Perspective." *Joint Force Quarterly* 49, no. 2 (2008): 86–92.
- Echevarria, Antulio J., II. "Center of Gravity: Recommendations for Joint Doctrine." *Joint Force Quarterly* 35 (2004): 10–17.
- Engel, William F. "Transforming Fires for the Objective Force." *Field Artillery Journal* 6, no. 6 (November–December 2001): 9–13.
- Fesenko, Yu. N. "Future Trends in Precision Arms Development." *Military Thought* 12, no. 1 (January–February 2003): 104–12.
- Ford, Christopher M. "Speak No Evil: Targeting a Population's Neutrality to Defeat an Insurgency." *Parameters* 35 (Summer 2005): 51–66.
- Gander, Terry J. "Mortar Ammunition Update." *Armada International* 27, no. 2 (April–May 2003): 18–24.
- Gentile, Gian P. "A Strategy of Tactics: Population-centric COIN and the Army." *Parameters* 39, no. 3 (Autumn 2009): 5–17.
- Gerber, Elisabeth R., and John E. Jackson. "Endogenous Preferences and the Study of Institutions." *American Political Science Review* 87, no. 3 (September 1993): 639–56.
- Gorman, Martin J., and Alexander Krongard. "A Goldwater-Nichols Act for the U.S. Government: Institutionalizing the Interagency Process." *Joint Force Quarterly* 39, no. 4 (2005): 51–58.

- Grant, Rebecca. "The Security Forces Rewrite." *Air Force Magazine* 89, no.1 (January 2006): 54–58.
- Gunaratna, Rohan. "Intelligence Failures Exposed by Tamil Tiger Airport Attack." *Jane's Intelligence Review*, 1 September 2001.
- Helmer, Daniel. "Hezbollah's Employment of Suicide Bombing during the 1980s: The Theological, Political, and Operational Development of a New Tactic." *Military Review* 4 (July–August 2006).
- Henrichon, Patrick. "Protecting the Canadian Forces against Asymmetric Threats." *Canadian Military Journal* 3, no. 4 (Winter 2002–2003): 9–14.
- Hillier, Rick. "NATO Transformation: Canada's Contribution." *On Track* 10, no. 4 (Winter 2005): 6–8.
- Holmes, Robert H. "Bob," Bradley D. Spacey, John M. Busch, and Gregory J. Reese. "The Air Force's New Ground War: Ensuring Projection of Air and Space Power through Expeditionary Security Operations." *Air and Space Power Journal* 20, no. 3 (Fall 2006): 41–54.
- Hughes, David, and Michael Dornheim. "No Flight Controls." *Aviation Week and Space Technology* 159, no. 23 (8 December 2003): 42–43.
- Jane's Information Group. "RAF Regiment Improvements." *International Defence Review* 12, no. 4 (1979).
- Jumper, John P. "Rapidly Deploying Aerospace Power: Lessons from Allied Force." *Aerospace Power Journal* 13, no. 4 (Winter 1999): 4–10.
- Keane, Angela Greiling. "Missiles over Baghdad." *Traffic World* 267, no. 48 (1 December 2003): 1–11.
- Lepine, J. P. F. "From Cold Warriors to Expeditionary Forces—The Current Challenges Facing the German Armed Forces." *Canadian Military Journal* 7, no. 3 (Autumn 2006): 41–50.
- Maloney, Sean M. "'Missed Opportunity': Operation Broadsword, 4 Brigade and the Gulf War." *Canadian Military History* 4, no. 1 (Spring 1995): 36–46.
- McCormick, Gordon H., and Guillermo Owen. "Revolutionary Origins and Conditional Mobilization." *European Journal of Political Economy* 12, no. 3 (November 1996): 377–402.
- Nadeau, Richard, Richard G. Niemi, and Timothy Amato. "Expectations and Preferences in British General Elections." *American Political Science Review* 88, no. 2 (June 1994): 371–83.

- Nordland, Rod. "Corkscrew over Baghdad." *Newsweek* 142, no. 17 (27 October 2003): 41.
- Phillips, Edward L. "Special Forces Direct Action and Targeting: Appropriate Force and Customer Satisfaction." *Special Forces* 8, no. 2 (April 1995): 24–27.
- Rittel, Horst W. J., and Melvin M. Webber. "Dilemmas in a General Theory of Planning." *Policy Sciences* 4 (1973): 155–69.
- Roos, John G. "Indirect Fires: Army Recoiling from Crusader Loss, but Has Bright Spot in 'Lowly' Mortars." *Armed Forces Journal International* 140, no. 5 (December 2002): 22–25.
- Searle, Thomas R. "Making Airpower Effective against Guerrillas." *Air and Space Power Journal* 18, no. 3 (Fall 2004): 13–23.
- Smith, Angela. "Travis C-5 Crew Recounts Enemy Attack." *Mobility Forum* 13, no. 3 (May–June 2004): 34–35.
- Stieglitz, Klaus-Peter. "The Luftwaffe of Tomorrow." *NATO's Nations and Partners for Peace* 50 (2006): 90–103.
- Tracy, Tommy J. "Field Artillery at the Crossroads of Transformation." *Military Review* 84, no. 1 (January–February 2004): 32–44.
- Ucko, David H. "Lessons from Basra: The Future of British Counterinsurgency." *Survival* 52, no. 4 (21 July 2010): 131–58.
- Vangel, Francis. "Gunfire Detection System Brings the Enemy out of the Shadows." *Special Warfare* 18, no. 1 (July 2005): 28–29.
- Wass de Czege, Huba, and Jacob D. Biever. "Force Protection: From Fort to Foxhole." *Army Magazine* 51, no. 6 (June 2001): 17–19.
- Wathen, Alexander M. "Contingency Response Group: Time to Expand the Box and Think 'Coalition.'" *Air and Space Power Journal* 19, no. 2 (Summer 2005): 70–72.
- Watkins, D. M. "Air Base Defence—The Optimum Strategy to Counter Modern Threats to Joint Air Operations." *The Royal Air Force Air Power Review* 7, no. 3 (Autumn 2004): 77–91.
- Welsh, W. H. "A Canadian Air Force Regiment." *Canadian Defence Quarterly* 12, no. 1 (Summer 1982): 37–41.
- . "The Canadian Forces and Airfield Defence." *Canadian Defence Quarterly* 9, no. 4 (Spring 1980): 18–23.
- . "Base Defence Forces: There Is Much Room for Improvement." *Canadian Defence Quarterly* 16, no. 2 (Autumn 1986): 36–39.
- Wendt, Eric P. "Strategic Counterinsurgency Modeling." *Special Warfare* 18, no. 2 (September 2005): 2–13.

Withington, Thomas. "The Experiences of the Soviet Air Force in Afghanistan, 1979–1989." *Royal Air Force Air Power Review* 8, no. 1 (Spring 2005): 115–28.

Historical Studies

- Davis, Richard G. *The 31 Initiatives: A Study in Air Force–Army Cooperation*. Washington, DC: Office of Air Force History, 1987.
- Fox, Roger P. *Air Base Defense in the Republic of Vietnam: 1961–1973*. Washington, DC: Office of Air Force History, 1979.
- Futrell, Robert F. *The United States Air Force in Korea, 1950–1953*. Washington, DC: Office of Air Force History, 1983.
- Larsen, Stanley R., and James L. Collins. *Allied Participation in Vietnam*. Washington, DC: Department of the Army, 1985.
- Lee, Maj Richard R. *7AF Local Base Defense Operations, July 1965–December 1968*, Project CHECO report. Hickam AFB, HI: Headquarters Pacific Air Force (HQ PACAF), 1 July 1969.
- Roach, G. T. "Attachment to 11th Group R.A.F.–20th Apr 42 to 25th Apr 42." Microfilm. RG24-C-1, reel C-5292. 7 July 1942. Army Headquarters Central Registry fonds, Library and Archives Canada.
- Royal Canadian Air Force. "Metz, France: 1957—Historical Record—National Archives of Canada: Historical Record 1 Air Division HQ." No date.
- Schlight, John. *The United States Air Force in Southeast Asia: The War in South Vietnam: The Years of the Offensive, 1965–1968*. Washington, DC: Office of Air Force History, 1988.
- . *A War Too Long: The USAF in Southeast Asia, 1961–1975*. Washington, DC: GPO, 1996.
- . *The War in South Vietnam: The Years of the Offensive, 1965–1968*. Washington, DC: GPO, 1999.
- Thompson, Maj A. W., and C. William Thorndale. *Air Response to the Tet Offensive, 30 January–29 February 1968*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 12 August 1968.
- Thorndale, C. William. *Defense of Da Nang*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 31 August 1969.

Reports

- Alexander, John B. *Convergence: Special Operations Forces and Civilian Law Enforcement*. JSOU Report 10-6. MacDill AFB, FL: July 2010.
- Bargery, Chris. "Creation of the 786th Security Forces Squadron and Joint Task Force Shining Hope Lessons Learned." Case study. Sembach AB, Germany: 786th SFS/CC, 1999.
- Bassiouni, M. Cherif. "Annex VI: Study of the Battle and Siege of Sarajevo." In *Final Report of the United Nations Commission of Experts Established Pursuant to Security Council Resolution 780 (1992)*. New York: United Nations, 1994.
- Binnendijk, Hans, and Stuart Johnson, eds. *Transforming for Stabilization and Reconstruction Operations*. Washington, DC: Center for Technology and National Security Policy, National Defense University, 12 November 2003.
- Bogdanos, Matthew. "Transforming Joint Interagency Coordination: The Missing Link between National Strategy and Operational Success." Case Studies in National Security Transformation, no. 9. Washington, DC: Center for Technology and National Security Policy, National Defense University, 2007.
- Bolkcom, Christopher, Bartholomew Elias, and Andrew Feickert. *Homeland Security: Protecting Airliners from Terrorist Missiles*. Washington, DC: Congressional Research Service, November 2003.
- . *MANPADS Threat to Commercial Aviation*. Washington, DC: Congressional Research Service, March 2004.
- Bolkcom, Christopher, and Kenneth Katzman. *Military Aviation: Issues and Options for Combating Terrorism and Counterinsurgency*. Washington, DC: Congressional Research Service, 27 January 2006.
- Bowie, Christopher J. *The Anti-access Threat and Theater Air Bases*. Washington, DC: Center for Strategic and Budgetary Assessments, 2002.
- Bray, Clifton. "Case Study on the 86th Contingency Response Group (CRG) Rinas Airport, Tirane, Albania Deployment." Case study. Ramstein AB, Germany: Headquarters, 86th CRG, 2000.
- Brown, Herbert T. *Current Air Base Defense Doctrine: Are We Postured to Meet the Expectations of the AEF?* Maxwell AFB, AL: Air Command and Staff College, 2001.

- Carlson, A. C. *Air Base Defense*. Corona Harvest Report. Maxwell AFB, AL: Air War College, 1952.
- Carr Center for Human Rights Policy, and US Army Judge Advocate General's Legal Center and School. *Implementing the Rule of Law and Human Rights in Stability Operations*. Workshop report. Cambridge, MA: Harvard University, 25–26 September 2006.
- Celeski, Joseph D. *Operationalizing COIN*, JSOU Report 05-2. Hurlburt Field, FL: JSOU Press, 2005.
- Chambers, James J., Jr. *Force Protection for the 21st Century Expeditionary Aerospace Forces: Security Forces Need Organic Ground Intelligence*. Maxwell AFB, AL: Air Command and Staff College, 1999.
- Chief of the Air Staff. *Chief of the Air Staff Level 1 Strategic Assessment FY 06/07*. Ottawa, Ontario: Chief of the Air Staff, November 2005.
- Coleman, Richard A. *USAF Air Bases: No Safe Sanctuary*. Carlisle Barracks, PA: US Army War College, 11 April 1990.
- Cordesman, Anthony H. *The Iraq War: Strategy, Tactics, and Military Lessons*. Washington, DC: Center for Strategic and International Studies, 2003.
- Crane, Barry. *Deterrence Effects of Operation Frontier Shield*. IDA Paper P-3460. Alexandria, VA: Institute for Defense Analyses, 1999.
- Crane, Barry, A. Rex Rivolo, and Gary C. Comfort. *An Empirical Examination of Counterdrug Interdiction Program Effectiveness*. IDA Paper P-3219. Alexandria, VA: Institute for Defense Analyses, January 1997.
- Drew, Dennis M. *Airpower in the New World Order*. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 1993.
- . “Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion.” In *The Paths of Heaven: The Evolution of Airpower Theory*, edited by Phillip S. Meilinger, 321–356. Maxwell AFB, AL: Air University Press, 1997.
- . *Rolling Thunder 1965: Anatomy of a Failure*. CADRE Paper, Report No. AU-ARI-CP-86-3. Maxwell AFB, AL: Air University Press, October 1986.
- Edwards, Sean J. A. *Swarming on the Battlefield: Past, Present, and Future*. Santa Monica, CA: RAND, 2000.
- Fadok, David. *John Boyd and John Warden: Airpower's Quest for Strategic Paralysis*. Maxwell AFB, AL: Air University Press, February 1995.

- Faurer, Theodore M. *The First and Last US AC-47 Squadron—A Personal Recollection*. Air War College Report 5588. Maxwell AFB, AL: Air University, April 1975.
- Freeman, Ken. *Force Protection after Next*. Carlisle Barracks, PA: US Army War College, 1998.
- Harris, Paul D. *Reducing the Force Protection Continuity Gap Created by the Air Expeditionary Force*. Maxwell AFB, AL: Air Command and Staff College, 2001.
- Headquarters USAF/A7S. *DOTMLPF Change Recommendation for Integrated Defense*. Washington, DC: Headquarters USAF/A7S, 14 April 2006.
- Hoffman, Bruce. *Insurgency and Counterinsurgency in Iraq*. Santa Monica, CA: RAND, June 2004.
- Hoffman, Bruce, and Jennifer Morrison Taw. *A Strategic Framework for Countering Terrorism and Insurgency*. Santa Monica, CA: RAND, 1992.
- Hudson, Rex A. *The Sociology and Psychology of Terrorism: Who Becomes a Terrorist and Why?* Washington, DC: Federal Research Division, Library of Congress, September 1999.
- Johnsen, William T., Douglas V. Johnson II, James O. Kievit, Douglas C. Lovelace, Jr., and Steven Metz. *The Principles of War in the 21st Century: Strategic Considerations*. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 1 August 1995.
- Kasuda, Paul J. *United States Air Force Counterinsurgency Operations Capabilities, the Ground Dimension: Are We on the Right Glide Slope?* Maxwell AFB, AL: Air War College, 16 February 2011.
- Komer, Robert W. *The Malayan Emergency in Retrospect*. RAND Report R-0957. Santa Monica, CA: RAND, 1972.
- Luck, Gary, Mike Findlay, and the Joint Warfighting Center Joint Training Group. *Insights and Best Practices: JTF Level Command Relationships and Joint Force Organization*. Focus Paper no. 4. Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, November 2007.
- . *Joint Operations Insights and Best Practices*. 2nd ed. Norfolk, VA: United States Joint Forces Command, Joint Warfighting Center, July 2008.
- Manwaring, Max G. *Street Gangs: The New Urban Insurgency*. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, March 2005.

- Marttala, David W. "The 'In Lieu Of' Myth—Airmen in Joint Ground Operations." Walker Paper No. 13. Maxwell AFB, AL: Air University Press, January 2009.
- Metz, Steven, and Douglas V. Johnson II. *Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts*. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, 2001.
- Metz, Steven, and Raymond Millen. *Insurgency and Counterinsurgency in the 21st Century: Reconceptualizing Threat and Response*. Carlisle Barracks, PA: Strategic Studies Institute, 2004.
- Momyer, Lt Gen William W. *Operation Safe Side Final Report*. Seventh Air Force, 1 October 1967.
- Mumma, John H., and Jeremiah C. Riordan. *Air Base Ground Defense: Key Issues for the 1990's*. Maxwell AFB, AL: Air War College, 1987.
- Office of the President of the United States of America. *National Strategy for Combating Terrorism*, February 2003.
- O'Hanlon, Michael E., and Jason H. Campbell. "Iraq Index Tracking Variables of Reconstruction & Security in Post-Saddam Iraq." Brookings Institute, 1 October 2007. <http://www.brookings.edu/fp/saban/iraq/index.pdf>.
- Purser, Wayne. *Air Base Ground Defense: An Historical Perspective and Vision for the 1990s*. Maxwell AFB, AL: Air War College, 1989.
- Shlapak, David A., and Alan Vick. "Check Six Begins on the Ground": *Responding to the Evolving Ground Threat to U.S. Air Force Bases*. RAND Report MR-606-AF. Santa Monica, CA: RAND, 1995.
- Task Force Enduring Look, United States Air Force. *The Air and Space Expeditionary Force*. Quick Look Report no. 8, September 2002.
- Taylor, Michael. "Identifying Vulnerability: Enhancing Operational Security in the Post 9-11 World." Boston, MA: American International Security Corporation, 2002.
- USAF. *Long-Term Integration of Expeditionary Airmen Concepts into the Air Force*. Washington, DC: Headquarters USAF/XO, July 2005.
- Watts, Barry D. *Long-Range Strike: Imperatives, Urgency and Options*. Washington, DC: Center for Strategic and Budgetary Assessments, 2005.
- Whitmire, James C. "Chris." *Shoulder Launched Missiles (a.k.a. MANPADS): The Ominous Threat to Commercial Aviation*. Counterproliferation Papers, Future Warfare Series no. 37. Maxwell AFB,

AL: USAF Counterproliferation Center, Air University, December 2006.

Unpublished Papers

- Basilici, Stephen P., and Jeremy Simmons. "Transformation: A Bold Case for Unconventional Warfare." Master's thesis, Naval Postgraduate School, Monterey, CA, 2004.
- Bean, Michael D. "United States Security Forces in an Era of Terrorist Threats." Master's thesis, USAF School of Advanced Airpower Studies, Air University, Maxwell AFB, AL, 1999.
- Brewington, Brooks R. "Combined Action Platoons: A Strategy for Peace Enforcement." Master's thesis, USMC Command and Staff College, Quantico, VA, 1996.
- Buonaugurio, Michael P. "Air Base Defense in the 21st Century: USAF Security Forces Protecting the Look of the Joint Vision." Master's paper, USMC Command and Staff Collage, Quantico, Virginia, 2001.
- Busch, Lt Col John, AF/A7SO. *Institutionalizing Force Protection Intelligence*. White paper. Washington, DC: Headquarters USAF/A7S, n.d.
- Christensen, Glen E. "Air Base Defense in the Twenty-First Century." Graduate monograph. Fort Leavenworth, KS: US Army Command and General Staff College, 2007.
- Coston, Anthony M. "Is U.S. Army Rear Area and Base Security Doctrine Sound for Sustaining Operations on the Noncontiguous Nonlinear Battlefield?" Graduate monograph. Fort Leavenworth, KS: US Army Command and General Staff College, 2003.
- Dickey, Clifton L. "Air Base Defense for the Air Expeditionary Force: More Than Defending the Redline." Master's thesis, School of Advanced Airpower Studies, Air University, Maxwell AFB, AL, 1998.
- Edwards, Sean J. A. "Swarming and the Future of Warfare." PhD diss., Pardee RAND Graduate School, Santa Monica, CA, 2005.
- Galloway, Gerald E. "Counterinsurgency: Relearning How to Think." Master's thesis, US Army War College, Carlisle Barracks, PA, 2005.
- Gooding, Aeneas R. "Doing It All: Security Forces—The USAF COIN Force?" Master's thesis, USAF School of Advanced Airpower Studies, Air University, Maxwell AFB, AL, 2009.

- Gray, Ron, "Integrated Swarming Operations for Air Base Defense: Applications in Irregular Warfare." Master's thesis, Naval Postgraduate School, Monterey, CA, June 2006.
- Haas, Christopher K. "A Standing Unconventional Warfare Task Force to Combat Insurgency in the 21st Century." Master's thesis, US Army War College, Carlisle Barracks, PA, 2005.
- Hargrove, Grant M. "Counterinsurgency Operations in Airbase Defense: A Geospatial and Temporal Analysis." Master's thesis, Naval Postgraduate School, Monterey, CA, 2009.
- Hettinga, Benjamin J. "The Defense of Tan Son Nhut Air Base, 31 January 1968: A Study in the Nature of Air Base Security." Master's thesis, The Ohio State University, Columbus, OH, 2001.
- Hubbard, Curtis W. "Base Defense at the Special Forces Forward Operating Base." Master's thesis, US Army Command and General Staff College, Fort Leavenworth, KS, 2002.
- Kochanski, Don. "The Missing Phase: The Need for a New Stability in Modern Combat Operations." Master's thesis, US Army War College, Carlisle Barracks, PA, 2005.
- Lane, Lawrence R., and Albert F. Riggle. "Airfield Defense for Global Reach/Global Power." Paper, US Army War College, Carlisle Barracks, PA, 1993.
- McLaughlin, Robert F. "Counterinsurgency and the Surge in Iraq: Balancing Doctrine and Strategy." Master's research paper, US Army War College, Carlisle Barracks, PA, 2009.
- Ohlson, Kenneth W. "Inefficient Joint Base Defense: A Doctrine Problem." Master's thesis, Air Command and Staff College, Maxwell AFB, AL, 2005.
- Palmer, Glen E. "Air Base Security Operations: An Air Component Responsibility." Master's thesis, USAF School of Advanced Airpower Studies, Air University, Maxwell AFB, AL, 2006.
- Pelli, Frank. "Insurgency, Counterinsurgency, and the Marines in Vietnam." Master's thesis, USMC Command and Staff College, Quantico, VA, 1990.
- Reed, D. Todd. "The Tao of Special Forces: An Analysis of Counterinsurgency Doctrine." Master's thesis, Naval Postgraduate School, Monterey, CA, 2005.
- Royal Canadian Air Force Police and Security Historical Group. "The RCAF Police and Security Services." Unpublished manuscript. RCAF Police and Security Historical Group, 3 February 2007.

- Rundquist, Erik K. "Courage in Adversity: Defending Austere Airfields with Air Force Contingency Response Groups." Master's thesis, Army Command and General Staff College, Fort Leavenworth, KS, 2004.
- Young, David T. "Applying Counterinsurgency Theory to Air Base Defense: A New Doctrinal Framework." Master's thesis, Naval Postgraduate School, Monterey, CA, 2005.

Public Documents

- Air-Sea Battle Office, Department of Defense. *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges*. Washington, DC: DOD, May 2013. <http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf>.
- Army Pamphlet 20-271, *The Northern Theater of Operations: 1940–1945*, 15 December 1959.
- Department of National Defence, Government of Canada. *AIRCOM Concept of Operations for 2 Contingency Support Wing*. Winnipeg, Manitoba: DCOS P&R/SO Con 3, May 1995.
- . *Army Historical Report no. 3: The Employment of Infantry in the Pacific Coast Defences (Aug 39 to Dec 43)*. Ottawa, Ontario: Canadian Army Headquarters, 1944.
- . B-GL-394-002/FP-001, *Reconnaissance and Surveillance Operations (Interim)*. Ottawa, Ontario: DND Canada, 2004.
- . *Military Police Functional Review—Signing the Route to Relevance*. Report. Ottawa, Ontario: National Defence Headquarters, October 2005. File 1901-1 (EA CFPM).
- Director of Defense Research and Engineering. *Capstone Concept of Operations for DOD Forensics*. Washington, DC: DOD, 18 July 2008.
- Directorate for Organizational and Management Planning, Office of the Director of Administration and Management, Office of the Secretary of Defense. *A Study of DOD Law Enforcement Policy Oversight Responsibilities*. Washington, DC: DOD, 16 April 2010.
- Directorate of History, Department of National Defence and the Canadian Forces, Government of Canada. "File 79/429, vol 3: Secret Organization Order no. 3: R.C.A.F. Internal Security-Guards (S.7676)." 9 September 1940.

- Gates, Robert M., US Secretary of Defense. To Department of Defense leadership. Memorandum, 18 August 2010.
- General Staff. "Appendix 1: Extracts from Tactical Notes on the Defence of Aerodromes." In *Ground Defence of Aerodromes*. Microfilm. RG24-C-1, reel C-5292. 28 March 1942. Army Headquarters Central Registry fonds, Library and Archives Canada.
- Inspector General, United States Department of Defense. *Semiannual Report to the Congress, April 1, 2010–September 3, 2010*.
- Inspector General Act of 1978*. Public Law 95–452, Stat. 1101, H. R. 8588 (1978).
- Jumper, John P., and Peter J. Schoomaker. *Abrogation of Joint Service Agreement 8: USA-USAF Agreement for the Ground Defence of Air Force Bases and Installations*. Washington, DC: Departments of the Army and Air Force, 2005.
- Lieberman, Joseph I., and Susan M. Collins. *A Ticking Time Bomb: Counterterrorism Lessons from the U.S. Government's Failure to Prevent the Fort Hood Attack*. Special report. Washington, DC: US Senate Committee on Homeland Security and Governmental Affairs, February 2011. <http://www.hsgac.senate.gov/download/fort-hood-report>.
- Miller, Lt Col Kenton. *3rd SPS Ground Defense Lessons Learned*. After-action report. Bien Hoa AB, South Vietnam, 1968.
- Office of Community Oriented Policing Services, US Department of Justice. "Community Policing Defined." Washington, DC: US Department of Justice, January 2008. <http://www.cops.usdoj.gov/Publications/e030917193-CP-Defined.pdf>.
- Public Affairs Office, US Army Europe, US Department of Defense. "DOD Announces Installation Realignment in Germany." Press release, 29 July 2005. <http://www.defense.gov/releases/release.aspx?releaseid=8730> (accessed 7 February 2013).
- Rumsfeld, Donald. *Quadrennial Defense Review Report*. Washington, DC: DOD, 6 February 2006.
- Special Inspector General for Iraq Reconstruction. *Quarterly Report to Congress*. Washington, DC: US Departments of Defense and State, 31 July 2006.
- UK Ministry of Defence. *Delivering Security in a Changing World: Future Capabilities*. Norwich, UK: Stationery Office, 2004.
- US Department of Defense. *The National Defense Strategy of the United States of America*. Washington, DC: Office of the Secretary of Defense, March 2005.

- . *The National Military Strategy of the United States of America*. Washington, DC: Office of the Secretary of Defense, 2004.
- . *Report of the 2006 Quadrennial Defense Review*. Washington, DC: Office of the Secretary of Defense, 6 February 2006.
- US Department of State and the Republic of Iraq. “Agreement between the United States of America and the Republic of Iraq on the Withdrawal of United States Forces from Iraq and the Organization of Their Activities during Their Temporary Presence in Iraq,” 17 November 2008.
- US House. *Statement of General T. Michael Moseley, USAF Vice Chief of Staff before the House Armed Services Committee Subcommittee on Readiness*. 108th Cong., 1st sess., 21 October 2003.
- US National Intelligence Council. *Global Trends 2015: A Dialogue about the Future with Nongovernmental Experts*. Washington, DC: DI Design Center, 2000.
- US Senate. *Opening Statement, General David H. Petraeus, Confirmation Hearing: Commander, ISAF/US Forces–Afghanistan*. 111th Cong., 2nd sess., 29 June 2010.

Declassified Sources

- Bonetti, Lee. *The War in Vietnam, January–June 1967*. Project CHECO semiannual report. Hickam AFB, HI: HQ PACAF, 29 April 1968. Document is now declassified.
- Caine, Philip D. *IV DASC Operations, 1965–1969*, Project CHECO report. Hickam AFB, HI: HQ PACAF, 1 August 1969. Document is now declassified.
- Central Intelligence Agency. *Warsaw Pact Nonnuclear Threat to NATO Airbases in Central Europe*, NIE 11/20-6-84. 25 October 1984. http://www.foia.cia.gov/sites/default/files/document_conversions/89801/DOC_0000278545.pdf. Document is now declassified.
- Cole, James L., Jr. *Fixed Wing Gunships in SEA*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 30 November 1971. Document is now declassified.
- Crawford, Robert, and J. W. Ellis, Jr. *Airbase Defense and Security with Application to Thailand*. Santa Monica, CA: RAND, 19 December 1966. Document is now declassified.

- Dennison, John W., and Melvin F. Porter. *Local Base Defense in RVN, Jan 69–Jun 71*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 14 September 1971. Document is now declassified.
- Direct Support Center, III Corps. *History, 1 January–30 June 1968*. Document is now declassified.
- Directorate of Security Police, HQ USAF. *US Air Force Combat Security Police Forces for Air Base Defense: Safe Side (U)*. Operation Safe Side final report, 1 October 1967. Information extracted is unclassified.
- Elftmann, John W., E flight commander, 4th ACS. Background paper, No date. Information extracted is unclassified.
- 14th Air Commando Wing, *History, 1 November–31 December 1966*.
 ———. *History, 1 January–31 March 1967*.
 ———. *History, 1 April–30 June 1967*.
 ———. *History, 1 January–31 March 1968*.
 ———. *History, 1 April–30 June 1968*.
- 14th Special Operations Wing. *History, 1 July–30 September 1968*.
 ———. *History, 1 January–31 March 1969*.
 ———. *History, 1 April–30 June 1969*.
 ———. *History, 1 July–30 September 1969*.
 ———. *History, 1 October–31 December 1969*.
- Hickey, Lawrence J. *Night Close Air Support in RVN, 1961–1966*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 15 March 1967. Document is now declassified.
- HQ Pacific Air Forces. *Attack against Tan Son Nhut*. Project CHECO special report. Hickam AFB, HI: HQ PACAF, 8 July 1966. Document is now declassified.
 ———. “Enemy Attack at Tan Son Nhut AB West Perimeter.” Project CHECO report. *Southeast Asia Digest* 1, no. 3 (March 1968): 21–25. Document is now declassified.
 ———. PACAF ROC 6 69. *Required Operational Capability: Gunship Program for Air Base Defense*, 7 April 1969. Document is now declassified.
 ———. *Project CHECO Southeast Asia Digest, January 1968*. Project CHECO report. Hickam AFB, HI: HQ PACAF, January 1968. Document is now declassified.
 ———. *Project CHECO Southeast Asia Digest, February 1968*. Project CHECO report. Hickam AFB, HI: HQ PACAF, February 1968. Document is now declassified.

- . *Project CHECO Southeast Asia Digest, March 1968*. Project CHECO report. Hickam AFB, HI: HQ PACAF, March 1968. Document is now declassified.
- Kott, Richard F. *The Role of USAF Gunships in SEAsia* (U). Project CHECO report. Hickam AFB, HI: HQ PACAF, 30 August 1969. Information extracted is unclassified.
- Mank, Russell W. *TACC Fragging Procedures*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 15 August 1969. Document is now declassified.
- McLaughlin, Col George W., director, TACC. "Rules of Engagement for Air Attacks on Enemy Rocket Positions." Staff Summary Sheet, 29 May 1968. Information extracted is unclassified.
- Melyan, Wesley, and Lee Bonetti. *The War in Vietnam, 1966*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 23 October 1967. Document is now declassified.
- Office of the Inspector General, HQ Air Force. *Required Operational Capability, AFIGO ROC 1-67*, 31 January 1967. Information extracted is unclassified.
- Porter, Melvin F. *Air Response to Immediate Air Requests in SVN*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 15 July 1969. Document is now declassified.
- Sams, Kenneth. *First Test and Combat Use of the AC-47*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 15 March 1967. Document is now declassified.
- Thompson, A. W. *The Defense of Saigon*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 14 December 1968. Document is now declassified.
- Trest, Warren A. *Control of Air Strikes in SEA, 1961-1966*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 1 March 1967. Document is now declassified.
- 20th Helicopter Squadron. Operating Instruction (OI) Number 60-14, *Base Defense Procedures*, 26 May 1967.
- USAF. *Defensive Activities*. Project Corona Harvest designated study no. 7, interim report. Maxwell AFB, AL: Air Command and Staff College, 15 December 1967. Document is now declassified.
- USAF Limited War Security Study Group, HQ Pacific Air Forces. *USAF Limited War Security-Defense Force*, 25 January 1966. Document is now declassified.

US Military Assistance Command, Vietnam (USMACV). *MACV Command-Wide Base Defense Seminar*. 12 June 1967. Document is now declassified.

Wade, Thomas D. *Seventh Air Force Tactical Air Control Center Operations*. Project CHECO report. Hickam AFB, HI: HQ PACAF, 15 October 1968. Document is now declassified.

Letters

Momyer, Lt Gen William W., commander, Seventh Air Force. To HQ USAF. Letter, 4 December 1967. Document is now declassified.

Watkins, Col Eugene C., directorate of operational requirements and development plans, HQ Air Force. To Maj Yanuzzi, Project CORONA Harvest. Letter, 17 January 1972. Document is now declassified.

Memorandums

Chief of the Air Staff. To Chief of the General Staff. Memorandum, 7 May 1942.

Duff, Col David J., director of security police, Seventh Air Force. To director of operations, Seventh Air Force. Memorandum, 27 June 1967. Information extracted is unclassified.

England, Gordon, deputy secretary of defense. To Stephen Cambone, under secretary of defense for intelligence. Memorandum, 12 October 2006.

Franklin, R. C., Jr., inspector general, HQ PACAF. To inspector general, HQ Air Force. Memorandum, 26 February 1966. Information extracted is unclassified.

Gettys, Brig Gen Charles M., deputy director for operations, National Military Command Center. Memorandum for record, 27 February 1967. Information extracted is unclassified.

Hendry, Brig Gen A. M., Jr., deputy chief of staff for plans, Tactical Air Command. To commander, Tactical Air Command. Memorandum, 4 June 1969. Document is now declassified.

Kenworthy, Col Charles C., Jr., team chief, HQ PACAF. Memorandum for record, n.d.

Momyer, Gen William W., commander, Seventh Air Force. To Gen William C. Westmoreland, commander, US Military Assistance

- Command, Vietnam. Memorandum, 31 May 1968. Information extracted is unclassified.
- Moseley, Gen T. Michael, chief of staff, US Air Force. To all major commands. Memorandum, 30 January 2006.
- Thenhaus, Maj Duane L., chief, installations security division, directorate of security police, Seventh Air Force. Memorandum for record, 25 May 1967. Information extracted is unclassified.
- Thirteenth Air Force. Staff Assistance Visit, Security and Base Defense Memorandum, 21 March 1962, 1.
- Westmoreland, Gen William C., commander, US Military Assistance Command, Vietnam. To Lt Gen Joseph H. Moore, commander, 2nd Air Division. Memorandum, 10 December 1965. In HQ PACAF, USAF Limited War Security Study Group. *USAF Limited War Security-Defense Force (U)*, appendix 2. "MACV Policy for Air Base Defense (U)," 25 January 1966. Vol. 12, K168.2057-4, IRIS no. 1069271, in the USAF Collection, Air Force Historical Research Agency. (Secret). Information extracted is unclassified.
- . To Gen William W. Momyer, commander, Seventh Air Force. Memorandum, 2 May 1968. Information extracted is unclassified.
- Wilkie, Lt Col Francis E., director of security police, Seventh Air Force. To director of operations, Seventh Air Force. Memorandum, 4 March 1967. Information extracted is unclassified.

Messages

- Message. 200630Z MAR 67. Seventh Air Force. To HQ PACAF, 20 March 1967. Document is now declassified.
- Message. HQ Pacific Air Forces (PACAF). To chief of staff, US Air Force, 8 December 1969. Document is now declassified.
- Message. Seventh Air Force. To III DASC, Bien Hoa AB RVN, 24 February 1968. Information extracted is unclassified.
- Message. Seventh Air Force. To III DASC Bien Hoa AB, II FFV Long Binh, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 TASC Bien Hoa, 26 April 1968. Information extracted is unclassified.
- Message. Seventh Air Force. To III DASC Bien Hoa, II FFV Long Binh, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 TASC Bien Hoa, 20 May 1968. Information extracted is unclassified.

Message. Seventh Air Force. To III DASC Bien Hoa, 3 TFW Bien Hoa, 19 TASS Bien Hoa, 504 Tac Air Spt Gp Bien Hoa, II FFV ALO Long Binh, 14 Air Commando Wg Nha Trang, 30 May 1968. Information extracted is unclassified.

Manuals, Instructions, Directives, and Other Publications

- 332nd Air Expeditionary Wing. "Lessons Learned: Integrated Defense at Joint Base Balad," July 2010, unpublished as of 6 December 2013.
- Air Force Doctrine Document (AFDD) 1. *Air Force Basic Doctrine, Organization, and Command*, 14 October 2011.
- Air Force Doctrine Document (AFDD) 1-1. *Leadership and Force Development*, 8 November 2011.
- Air Force Doctrine Document (AFDD) 1-02. *Air Force Supplement to the Department of Defense Dictionary of Military and Associated Terms*, 11 January 2007.
- Air Force Doctrine Document (AFDD) 2-0. *Global Integrated Intelligence, Surveillance, and Reconnaissance Operations*, 6 January 2012.
- Air Force Doctrine Document (AFDD) 3-05. *Special Operations*, 16 December 2005.
- Air Force Doctrine Document (AFDD) 3-2. *Irregular Warfare*, 15 March 2013.
- Air Force Doctrine Document (AFDD) 3-10. *Force Protection*, 28 July 2011.
- Air Force Doctrine Document (AFDD) 3-22. *Foreign Internal Defense*, 15 September 2007.
- Air Force Doctrine Document (AFDD) 3-24. *Irregular Warfare*, 1 August 2007.
- Air Force Doctrine Document (AFDD) 4-0. *Combat Support*, 28 July 2011.
- Air Force Handbook (AFH) 31-109. *Integrated Defense Handbook*, 1 January 1996.
- Air Force Handbook (AFH) 31-305. *Security Forces Deployment Planning Handbook*, 26 February 2003.
- Air Force Instruction (AFI) 14-119. *Intelligence Support to Force Protection (FP)*, 4 May 2012.
- Air Force Instruction (AFI) 14-127. (S) *Human Intelligence (HUMINT)*, 7 November 2011.

- Air Force Instruction (AFI) 31-101. *Integrated Defense (FOUO)*, 8 October 2009.
- Air Force Instruction (AFI) 36-2201. *Air Force Training Program*, 15 September 2010, amended 8 March 2011.
- Air Force Manual (AFMAN) 31-201V1. *Security Forces History*, 9 August 2010.
- Air Force Pamphlet (AFPAM) 10-219V6. *Planning and Design of Expeditionary Airbases*, 1 February 2006.
- Air Force Policy Directive (AFPD) 10-35. *Battlefield Airmen*, 4 February 2005.
- Air Force Policy Directive (AFPD) 10-42. *Irregular Warfare*, 28 January 2011.
- Air Force Policy Directive (AFPD) 31-1. *Integrated Defense*, 7 July 2007.
- Air Force Policy Directive (AFPD) 31-1. *Integrated Defense*, 28 October 2011.
- Air Force Policy Directive (AFPD) 31-3. *Air Base Defense*, 28 December 2001.
- Air Force Tactics, Techniques and Procedures (AFTTP) 3-10.1. *Integrated Base Defense (IBD)*, 20 August 2004.
- Air Force Tactics, Techniques and Procedures (AFTTP) 3-10.2. *Integrated Base Defense Command and Control*, 1 March 2008.
- Air Force Tactics, Techniques and Procedures (AFTTP) 3-10.3. *Integrated Defense Counterthreat Operations (CTO)*, 22 December 2008.
- Army Field Manual (FM) 2-22.2. *Counterintelligence*, 21 October 2009.
- Army Field Manual (FM) 2022.3. *Human Intelligence Collector Operations*, 6 September 2006.
- Army Field Manual (FM) 3-01.7. *Air Defense Artillery Brigade Operations*, 11 February 2010.
- Army Field Manual (FM) 3-01.11. *Air Defense Artillery Reference Handbook*, 23 October 2007.
- Army Field Manual (FM) 3-01.60. *Counter-rocket, Artillery, and Mortar Operations*, 19 July 2009.
- Army Field Manual (FM) 3-05. *Army Special Operations Forces*, 1 December 2010.
- Army Field Manual (FM) 3-05.2. *Foreign Internal Defense*, 1 September 2011.

- Army Field Manual (FM) 3-18. *Special Forces Operations*, 5 March 2012.
- Army Field Manual (FM) 3-24. *Counterinsurgency*, 15 December 2006.
- Army Field Manual (FM) 3-24.2. *Tactics in Counterinsurgency*, 21 April 2009.
- Chief of Defence Staff, Department of National Defence, Government of Canada. A-GA-007-000/AF-004, *Strategic Vectors: The Air Force Transformation Vision*. Ottawa, Ontario: National Defence Headquarters, 2004.
- . “Air Force Expeditionary Capability (AFExC): Concept of Operations.” Draft paper. Canadian Forces Aerospace Warfare Centre, Trenton, Ontario, 21 March 2007.
- . *Air Force Expeditionary Capability Concept of Operations, Revision 1*. Winnipeg, Manitoba: 1 Canadian Air Division, January 2012.
- . B-GA-400-000/FP-000. *Canadian Forces Aerospace Doctrine*. Trenton, Ontario: Canadian Forces Aerospace Warfare Centre, 2010.
- . *CDS Planning Guidance—CF Transformation*. Ottawa, Ontario: National Defence Headquarters, October 2005.
- Department of National Defence, Government of Canada. *Chief of the Air Staff Level 1 Strategic Assessment FY 06/07*, 14 November 2005.
- DOD Directive (DODD) 3000.06. *Combat Support Agencies*, 10 July 2007.
- DOD Directive (DODD) 5205.15E. *DOD Forensic Enterprise (DFE)*, 26 April 2011.
- DOD Directive (DODD) 5525.5. *DOD Cooperation with Civilian Law Enforcement Officials*, 20 December 1989.
- Joint Publication (JP) 1-02. *Department of Defense Dictionary of Military and Associated Terms*, 15 November 2008, amended 15 November 2012.
- Joint Publication (JP) 3-10. *Joint Security Operations in Theater*, 3 February 2010.
- Joint Publication (JP) 3-10.1. *Joint Tactics, Techniques, and Procedures for Base Defense*, 23 July 1996.
- Joint Publication (JP) 3-24. *Counterinsurgency Operations*, 5 October 2009.

- Pacific Air Forces (PACAF) Manual 207-25. *Security Police Guidance for Guerilla/Insurgency/Limited War Environments*, 20 May 1968.
- Royal Air Force, Ministry of Defence, United Kingdom, AP 3241. *Force Protection Doctrine for Air Operations*. High Wycombe, UK: UK Ministry of Defence, 2006.
- US Chiefs of Staff, Joint Publication (JP) 3-10.1. *Joint Tactics, Techniques, and Procedures for Base Defense*, 23 July 1996.
- US Joint Forces Command, Joint Warfighting Center, Joint Doctrine Series, Pamphlet 6. *Doctrinal Implications of the Joint Interagency Coordination Group*, 27 June 2004.
- US Marine Corps, Fleet Marine Force Reference Publication (FMFRP) 12-15. *Small Wars Manual*, 1940.

Lectures and Addresses

- Beers, Jason. "786 SFS Lessons Learned Operation Iraqi Freedom." Briefing. 786th SFS/S-3, Sembach AB, Germany, 2003.
- Grant, Rebecca. Briefing. Subject: Securing Airpower Projection in Noncontiguous and Nonlinear Battlespace Operations, April 2006. Headquarters USAF/XOS-F, Command and Control General Officer Steering Group. Briefing. Subject: Integrated Base Defense Command and Control, 3 November 2004.
- Hollingsworth, Lt Col Larry. "PGMM XM395: Precision Guided Mortar Munition." Presentation. 7th International Artillery and Indirect Fire Symposium and Exhibition, 19 June 2002.
- Holmes, Brig Gen Robert, director of Air Force Security Forces. "Security Forces Transformation." Briefing. Air Force Corona Conference, December 2004.
- Kirnes, Lt Col Andre C. "Precision Mortar Systems Overview." Presentation. Precision Strike Summer PEO Forum, Ft. Walton Beach, FL, 27-28 July 2005. http://www.dtic.mil/ndia/2005precision_strike_peo/bischer.ppt.
- Moseley, Gen Michael, USAF chief of staff. "Transformation Brief to CORONA." Briefing. American Enterprise Institute, Washington, DC, 11 October 2005.
- Savard, Lt Col J. G. "Ground Security Support to Air Operations—Deficiencies." Briefing note. 1 Canadian Air Division Headquarters, Winnipeg, Manitoba, 12 November 2002.

- Simpson, J. G. "Status of Security/Resource (Force) Protection Review." Briefing note. 1 Canadian Air Division Headquarters. Winnipeg, Manitoba, 23 February 2001.
- Spacy, Col Bradley, director of force protection, USCENTAF. "Task Force 1041." Presentation. Headquarters USAF Threat Working Group, 28 April 2005.
- Wooley, Lt Gen Michael W., commander, Air Force Special Operations Command. "Application of Special Operations Forces in the Global War on Terror." Presentation. Air & Space Conference 2004, Washington, DC, 14 September 2004. http://www.afa.org/media/scripts/Wooley_Conf.asp.

Electronic Publications

- Aeronautica Militare, Government of Italy. "Dopo Sessanta Anni I Nuovi Fucilieri Dell'Aria Dell'Aeronautica Militare," n.d. <http://www.aeronautica.difesa.it/SitoAM/Default.asp?idNot=11469&idente=1398> (accessed 21 February 2013).
- . "16° Stormo—Reparto Protezione delle Forze," n.d. <http://www.aeronautica.difesa.it/Organizzazione/Reparti/Unit%C3%A0CompositaProiezione/Pagine/16StormoRepartoProtezionedelleForze.aspx> (accessed 21 February 2013).
- Bersin, Josh. "5 Keys to Building a Learning Organization." *Forbes*, 18 January 2012. <http://www.forbes.com/sites/joshbersin/2012/01/18/5-keys-to-building-a-learning-organization/>.
- Boxx, Eddie, and Jeffrey White. "Responding to Assad's Use of Airpower in Syria." Washington Institute for Near East Policy, 20 November 2012. <http://www.washingtoninstitute.org/policy-analysis/view/responding-to-assads-use-of-airpower-in-syria> (accessed 19 February 2013).
- Boyle, Rebecca. "After Animal Activists Track Pigeon Hunt with Drone, Pigeon Hunters Shoot Down Drone." *Popular Science*, 21 February 2012. <http://www.popsci.com/technology/article/2012-02/after-pigeon-hunt-thwarted-shooters-take-down-activist-groups-spy-drone> (accessed 19 February 2013).
- British Broadcasting Company (BBC). "Anders Breivik Describes Norway Island Massacre," 20 April 2012. <http://www.bbc.co.uk/news/world-europe-17789206>.

- Cable News Network (CNN). "Four Israeli Troops Missing after Warship Hit." *Internet Archive Wayback Machine*, 15 July 2006. <http://web.archive.org/web/20060721104952/http://www.cnn.com/2006/WORLD/meast/07/14/mideast/index.html>.
- Canadian Broadcasting Corporation. "Terrorist Groups Recruiting through Social Media." *CBC News*, 10 January 2012. <http://www.cbc.ca/news/technology/story/2012/01/10/tech-terrorist-social-media.html>.
- Christopherson, Todd. "Soldiers Fire First Precision-Guided Mortar in Afghanistan." *US Army Homepage*, 7 April 2011. <http://www.army.mil/article/54502/> (accessed 15 February 2013).
- Division of Community Planning, Florida Department of Community Affairs. "Military Base Encroachment." *Internet Archive Way Back Machine*, <http://web.archive.org/web/20030421230548/http://www.dca.state.fl.us/fdcp/DCP/militarybase/>. (accessed 28 February 2013).
- Federal Bureau of Investigation. "Massachusetts Man Charged with Plotting Attack on Pentagon and U.S. Capitol and Attempting to Provide Material Support to a Foreign Terrorist Organization." Press release, 28 September 2011. <http://www.fbi.gov/boston/press-releases/2011/massachusetts-man-charged-with-plotting-attack-on-pentagon-and-u.s.-capitol-and-attempting-to-provide-material-support-to-a-foreign-terrorist-organization>.
- . "Protecting America from Terrorist Attack: Our Joint Terrorism Task Forces, n.d. http://www.fbi.gov/about-us/investigate/terrorism/terrorism_jtfts (accessed 15 February 2013).
- Federation of American Scientists. "About FAS," 2013. <https://www.fas.org/about/index.html>.
- Fulghum, David, and Robert Wall. "Russia's SA-24 'Grinch' Lands in Insurgent Hands." *Aviation Week and Space Technology*, 12 March 2012. http://www.aviationweek.com/Article.aspx?id=/article-xml/AW_03_12_2012_p27-433282.xml&p=1 (accessed 19 February 2013).
- Gizewski, Peter. "The Future Security Environment: Threats, Risks and Responses." *Canadian Institute of International Affairs International Security Series*, March 2007. <http://www.opencanada.org/wp-content/uploads/2011/05/ISS-Future-Security-Environment.pdf> (accessed 16 January 2013).
- Heeter, Mark. "Return of Leighton Barracks to German Authorities Marks the End of U.S. Army Presence in Wuerzburg." *Official Homepage of the United States Army* (website), 15 January 2009. <http://www.army>

- .mil/article/15780/Return_of_Leighton_Barracks_to_German_ _authorities_marks_the_end_of_U_S__Army_presence_in_ _Wuerzburg/ (accessed 7 February 2013).
- Hoffman, Bruce. "The Logic of Suicide Terrorism." *Atlantic Monthly*, June 2003. <http://www.theatlantic.com/magazine/archive/2003/06/the-logic-of-suicide-terrorism/302739/>.
- Johnson, M. Alex, and Pete Williams. "Cops: Weeks of Planning Went into Shootings at Colo. Batman Screening." *NBCNews.com*, 20 July 2012. http://usnews.nbcnews.com/_news/2012/07/20/12850048-cops-weeks-of-planning-went-into-shootings-at-colo-batman-screening?lite.
- Kilcullen, David J. "Twenty-Eight Articles: Fundamentals of Company-Level Counterinsurgency." *IO Sphere*, Summer 2006. <http://www.au.af.mil/info-ops/iosphere.htm#06summer>.
- Kozaryn, Linda D. "822d Security Forces: On Guard in Kyrgyzstan." *American Forces Press Service*, 28 June 2002. <http://www.defendamerica.mil/awt/jun2002/awt062802a.html>.
- . "The Road from Baltimore to Bishkek." *American Forces Press Service*, 14 May 2002. http://www.defenselink.mil/news/May2002/n05142002_200205148.html.
- Myers, Lisa. "Hezbollah Drone Threatens Israel." *NBC News*, 12 April 2005. <http://www.msnbc.msn.com/id/7477528/ns/nbcnightlynews/t/hezbollah-drone-threatens-israel/>.
- Miller, Greg. "Mike' Company and the Persian Gulf." The Regimental Website of the Royal Canadian Regiment. http://www.theroyalcanadianregiment.ca/history/1992-present/mike_coy_persian_gulf.html (accessed 7 March 2007).
- Ministry of Defence, Government of the Netherlands. "Moties bij de Defensiebegroting 2003." *Internet Archive Wayback Machine*, 14 February 2003. <http://www.nieuwsbank.nl/inp/2003/02/14/T037.htm> (accessed 20 February 2013).
- . "The Netherlands Ministry of Defence: Facts and Figures on Dutch Security Policy and the Armed Forces." *Internet Archive Wayback Machine*, July 2004. http://web.archive.org/web/20061110233529/http://www.mindef.nl/binaries/Facts%20and%20figures_tcm15-46659.pdf (accessed 20 February 2013).
- Napolitano, Janet. Secretary of Homeland Defense. Interview by John King. Transcript. *CNN.com*, 19 April 2009. <http://transcripts.cnn.com/TRANSCRIPTS/0904/19/sotu.01.html>.

- Quinn, Patrick. "US Military Deaths in Afghanistan Hit 2,000." *Bloomberg Businessweek*, 30 September 2012. <http://www.businessweek.com/ap/2012-09-30/us-military-deaths-in-afghanistan-hit-2-000>.
- Rizzo, Jennifer. "U.S. Continues Support for Israel's Iron Dome." *CNN.com*, 17 May 2012. http://articles.cnn.com/2012-05-17/us/us_israel-missile-system_1_anti-rocket-iron-dome-missile-defense?s=PM:US.
- Stanley, Peter. "Remembering 1942: The Bombing of Darwin, 19 February 1942." Australian War Memorial, 19 February 2002. <http://www.awm.gov.au/atwar/remembering1942/darwin/transcript.htm> (accessed 25 February 2013).
- Starr, Barbara. "Shrapnel Hits Joint Chiefs Chairman's Plane at Afghan Base." *CNN.com*, 21 August 2012. http://articles.cnn.com/2012-08-21/asia/world_asia_afghanistan-dempsey-plane_1_fight-against-afghan-green-on-blue-afghan-man-afghanistan.
- Starr, Barbara, Chris Lawrence, and Joe Sterling. "ISAF: Insurgents in Deadly Attack in Afghanistan Wore U.S. Army Uniforms." *CNN.com*, 15 September 2012. <http://www.cnn.com/2012/09/14/world/asia/afghanistan-fatal-attack/index.html>.
- 10th Security Forces Squadron, USAF Academy. "Security Forces History," 8 January 2009. <http://web.archive.org/web/20090109041759/http://www.usafa.af.mil/10abw/10msg/sfs/history.cfm?catname=10SFS> (accessed 22 February 2013).
- TV-Novosti. "Texas College Hacks Government Drone in Front of DHS." *RT.com*, 27 June 2012. <http://rt.com/usa/news/texas-1000-us-government-906/>.
- United States Army. "Army Programs: Counter-Rocket, Artillery, Mortar (C-RAM)," 2006. <http://www.dote.osd.mil/pub/reports/FY2006/pdf/army/2006cram.pdf>.
- United States Army Center of Military History (USACMH). "U.S. Army in Somalia Chronology of Key Events," 2004. <http://www.army.mil/cmh/reference/Somalia/chronology.htm> (accessed 27 March 2004).

Sound air base defense ensures that America and its allies can project combat airpower when and where it's needed against a broad range of threats. Leaders and Airmen of all backgrounds will benefit from the lessons in this book, which are based on our hard-won experiences in Iraq and Afghanistan.

— Gen Mike Hostage, Air Combat Command, commander,
and former commander, Air Forces Central

Colonel Caudill and his colleagues have done the Air Force a great service by updating the history of air base defense inside the ground combat zone. The essays within will help readers develop a better understanding of the irregular threat and the effectiveness of the strategies and techniques that have been used to counter them. Every Air Force leader who deploys to Afghanistan, or to a future base located inside the ground combat zone, would be well-served to read this informative work.

— Dr. Bert Frandsen, Author of *Hat in the Ring: The Birth of American Air Power in the Great War*
(Chief of Staff of the Air Force Reading List selection for 2013)
and USAF Air War College, associate professor

When I began my career over 30 years ago, we primarily viewed airpower as rated aircrew operating combat aircraft, dropping bombs on targets. Today, airpower means so much more. Just take a look at the latest edition of the Chief of Staff's Portraits in Courage. Of the 20 Airmen whose heroic accomplishments are highlighted, the vast majority are nonrated and enlisted. But all delivered airpower on the front lines of combat. Colonel Caudill and his colleagues have done a fantastic job of highlighting this definitional expansion through the lens of air base defense. All American Airmen should consider this book a "must read" if they want a fuller understanding of what our service brings to the joint fight.

— Lt Gen David S. Fadok, Air University, commander and president

Airbase defense is truly a joint and coalition forces endeavour, and this book reopens a dormant historiography in this important field. I'm pleased that a Canadian perspective is included, which provides a comprehensive examination of western approaches to base defense. Air Force leaders would be well served by examining the topics in this book as they prepare for the challenges of irregular and future warfare.

— Maj Gen J. J. P. (Pierre) St-Amand, commander 1 Canadian Air Division/Canadian
NORAD Region, Royal Canadian Air Force

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