

**THE UNFULFILLED PROMISE:
THE DEVELOPMENT OF OPERATIONAL ART IN THE U.S. MILITARY, 1973-1997**

By

© 2012

Francis Joon Hong Park

B.A., History, The Johns Hopkins University, 1994

M.A., International Relations, Saint Mary's University of San Antonio, Texas, 1999

M.M.A.S., Theater Operations, U.S. Army Command and General Staff College, 2007

Submitted to the graduate degree program in History and the
Graduate Faculty of the University of Kansas
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy.

Dr. Theodore Wilson, Chairperson

Dr. Jeffrey Moran

Dr. Jacob Kipp

Dr. Robert Baumann

Dr. Brent Steele

Date Defended: July 12, 2012

The Dissertation Committee for Francis Joon Hong Park
certifies that this is the approved version of the following dissertation:

**THE UNFULFILLED PROMISE:
THE DEVELOPMENT OF OPERATIONAL ART
IN THE U.S. MILITARY, 1973-1997**

Dr. Theodore Wilson, Chairperson

Date Approved: July 12, 2012

Abstract

THE UNFULFILLED PROMISE: The Development of Operational Art in the U.S. Military, 1973-1997

By Francis J. H. Park
Department of History, University of Kansas

Professor Theodore A. Wilson, advisor

This study examines the theory, doctrine, and practice of operational art in the U.S. military starting in the early 1970s after the end of the Vietnam War to the mid 1990s after Operation Desert Storm. Using a model of operational art based on strategy, campaigning, force flow, and logistics, it traces the development of Active Defense and AirLand Battle in the U.S. Army, the emergence of a culture and doctrine of maneuver warfare in the U.S. Marine Corps, the Air Force's efforts to institute centralized control and decentralized execution of airpower in the tactical air forces, and their confluence in the Persian Gulf War. Operation Desert Storm marked the practice of three discrete schools of operational warfare, and provided an impetus to establishing joint doctrine, which built on reforms of professional military education that happened in the late 1980s. The gains made in the doctrine, education and training for the practice of operational warfare gave way to a more pervasive focus on tactics that characterized *Joint Vision 2010*, the Department of Defense's future vision of warfare, which influenced service concepts away from the effective practice of operational art.

Acknowledgments

First, to two former bosses, Bill Wunderle and Tom Donovan, for getting me really interested in operational art as a very junior captain in the 82d Airborne Division Plans section in 1999.

To Kevin Benson for generously sharing his own research from his own dissertation, and giving me the first push towards actually starting this degree program.

To Jake Kipp and David Glantz for their help with the study of Russian and Soviet operational art theory. A special thanks goes to Bruce Menning for providing me his translation of G. S. Isserson's *The Evolution of Operational Art*.

To Rusty Rafferty, Kathy Buker, and Elizabeth Dubuisson of the Combined Arms Research Library, U.S. Army Command and General Staff College, for their time and assistance with the archives there, even in the midst of a library renovation.

At the U.S. Army Military History Institute, U.S. Army War College, circulation librarians Steve Bye, Terry Foster, and Carol Funck, and reference librarians Rich Baker, Rodney Foytik, and Shannon Schwaller.

To Harold Bittner, Mike Wyly, John Schmitt, and Lieutenant General Paul Van Riper, U.S. Marine Corps (Retired) for their assistance and perspectives on the development of maneuver warfare in the U.S. Marine Corps. Special thanks go to Bruce Gudmundsson, who truly went out of his way to help me out at my visits to Quantico.

At Marine Corps Base Quantico, Virginia, Jim Ginther, Mike Miller, Greg Cina, John Lyles, and the entire staff of the Archives and Special Collections Branch at the Archives and Special Collections Branch, Alfred M. Gray, Jr. Research Center, and Annette Amerman, Beth Crumley, Kara Newcomer, and Paul Westermeyer at the Marine Corps History Division, and Colonel Michael Morris and Dr. Brad Meyer at the School of Advanced Warfighting.

At Maxwell Air Force Base, Alabama, Archie DiFante, Tammy Horton, Sly Jackson, and Lee Morris at the Air Force Historical Research Agency. I am particularly indebted to Dennis Drew, Hal Winton and Colonel Mike "Meter" Kometer of the School of Advanced Air and Space Studies and Woody Parramore of the LeMay Center for Doctrine Development and Education.

At Hurlburt Field, Florida, Lieutenant Colonel Dave Lyle at the 505th Combat Training Squadron, 505th Command and Control Wing.

To Britt McCarley, Carol Lilly, Karen Lewis, and Benjamin King at the U.S. Army Training and Doctrine Command History Office.

To Mike Dugre, Jeff Seiken, and Nick Waller at the Air Combat Command History Office.

At the U.S. Army Command and General Staff College, Colonel Jeffrey Springman, Chuck Zaruba, Dan Hodges, Dwayne Wagner, Tim Hentschel, Gary Hanson, Jeff Kubiak, and especially my teaching partners: Neal Bralley, Bill Knight, Gary Cordes, and Rich Berkebile.

Far away from Kansas, to Steve Sledge for invaluable peer review.

At Kansas, to Professor Ted Wilson, who applied gentle corrections to my many bad habits, and to Professor Kim Warren for teaching me the historical tradecraft without which I could not have written this dissertation.

Finally, Mark Calhoun, Chris Carey, Randy Masten, Mary McMurray, Chris Rein, and Nick Sambaluk as fellow compatriots in the path towards the inexorable end of the degree.

This dissertation was partially funded by a George C. Marshall/Baruch fellowship grant from the George C. Marshall Center, Lexington, Virginia.

Table of Contents

Acceptance Page	Error! Bookmark not defined.
Abstract	i
Acknowledgments.....	iv
Table of Contents.....	v
Table of Figures	viii
Notice	viii
Dedication.....	ix
Introduction	1
The theory, rhetoric, and practice of contemporary American operational art	2
Why operational art?	11
Chapter 1: Toward a Normative Definition of Operational Art	14
Terms of reference	15
Instruments of national power.....	15
Levels of War	17
Tactics.....	17
Strategy	17
Strategic Art.....	19
Studies of operational warfare and operational art	20
The Practice of Operational Art.....	34
A Normative Definition of Operational Art	37
Purpose	38
Elements of Operational Art	39
Some propositions on operational warfare	42
Conclusion	47
Chapter 2: Soviet Operational Art: A Revolution Unfinished	49
Divisions within the Ranks.....	56
In Pursuit of a Unified Military Doctrine and Science: Soviet Theorists before the Great Patriotic War	61
The Revival of Operational Art in the Great Patriotic War.....	75
Soviet Operational Art in the Nuclear Era	86
A Revolution Left Unfinished	94
Chapter 3: The Rediscovery of Tactics and Strategy in the Post-Vietnam U.S. Army	101
The U.S. Army’s cultural and institutional inheritance in 1973	102
The doctrinal inheritance of the post-Vietnam Army: Field Manual 100-5.....	110
Reframing tactics for a post-Vietnam Army: The 1976 edition of FM 100-5	114
Reactions to FM 100-5.....	128
The Rediscovery of Strategy in the U.S. Military	131
Two Parallel and Separate Revivals.....	141
Chapter 4: AirLand Battle and the Formal Introduction of Operational Art to the U.S. Army	150

The Evolution of Tactics after Active Defense	151
Revising FM 100-5	164
Bridging the Gap: the introduction of Operational Art	169
Reactions to AirLand Battle	174
AirLand Battle Revisited	180
Institutionalizing AirLand Battle	186
The Legacy of AirLand Battle	193
Chapter 5: Fighting Outnumbered and Winning: The U.S. Marine Corps and Maneuver Warfare	199
The Organizational and Cultural Influences on the U.S. Marine Corps in the Post-Vietnam Period	201
Theoretical Influences on Maneuver Warfare	204
The Debate over Maneuver Warfare	210
Maneuver Warfare as Official Writ	220
Maneuver Warfare and Operational Art	224
Institutionalizing Maneuver Warfare in the Marine Corps	228
Chapter 6: Operational Art and the United States Air Force after Vietnam	234
The State of Air Power Theory after Vietnam	235
Cultural Divides Within the Air Arms	241
The Air Force's Doctrine Wars	243
Training for Operational Warfare	258
John Warden and <i>The Air Campaign</i>	263
Introducing Operational Art to the Air Force	268
A More Capable, but Still Disunified Air Force	271
Chapter 7: Operation DESERT STORM and its Discrete Schools of Operational Art	274
Changing the Joint Institutions	275
Initial Campaign Planning for the Theater: DESERT SHIELD	276
<i>The Air Campaign</i> within the Campaign	278
Initial Planning for DESERT STORM	285
The Jedi and the "Ground Campaign"	289
Deployment before the Storm	295
One Joint Force Air Component Commander to Rule Them All	305
Integrating the Marine Corps into the Campaign	310
AirLand Battle Comes of Age	318
DESERT STORM and the Practice of Joint Campaigning	324
The Debate over Tactical Air Support	324
The Army, Marine Corps, and a Joint Force Land Component Commander	328
The Navy's Role in a Land War	331
The Campaign vs. the "Campaigns"	334
Chapter 8: The Catastrophic Success of DESERT STORM and the Peace Dividend: 1991-1997	338
Strategic Context after the Cold War	339
Educating and Training for Operational Art in the Marine Corps after DESERT STORM	340
The Army after DESERT STORM: Looking Outward, Turning Inward	351
Unification of the Air Force	364

Joint Doctrine Comes of Age	376
A Tactical Vision for a Future Strategy	386
Adrift between Strategy and Tactics	389
Conclusion: The Unfulfilled Promise of American Operational Art	393
Revisiting Some Propositions on Operational Warfare	394
Operational art: campaigning for strategy	394
Operational art: campaigning with tactics	396
Service perspectives in American operational art	399
Doctrine and organizational culture in American operational art	401
Training and education for American operational art	406
Inappropriate Tactical Bias	408
Bibliography	414
Primary Sources	414
U.S. Government Publications/Documents	414
Doctrinal Manuals and Operational Concepts	415
Interviews and Oral Histories	419
Journal Articles used as Primary Sources	421
Campaign Planning, Strategy, and Policy Statements	426
Published Primary Sources	427
Regulations, Instructions, and Directives	428
Reports and Presentations	428
Secondary Sources	430
Books and Book Chapters	430
Journal Articles	438
Pamphlets	440
Scholarly Papers, Monographs, Theses, and Dissertations	440
Websites	442

Table of Figures

Figure 1: One of the infamous mushroom cloud diagrams from the FM 100-5 draft compared to the final production version of the same diagram in the 1982 manual.	177
Figure 2: Boyd’s full OODA Loop diagram from The Essence on Winning and Losing as reconstructed by Chet Richards.	208
Figure 3: Presentation slide from Warden’s original INSTANT THUNDER plan, showing the locations of the targets that airpower was to attack.	281
Figure 4: Last version of the single corps attack, October 10, 1990.....	291
Figure 5: Arabian Peninsula, showing location of airbases, seaports, and ground force basing during DESERT SHIELD and DESERT STORM.	301
Figure 6: 1st MARDIV, 2d MARDIV breach lanes and initial and subsequent objectives.....	315
Figure 7: I MEF and Joint Forces Command-East attack to subsequent objectives.....	316
Figure 8: Operation DESERT STORM ground operations, February 24-26, 1991.	321
Figure 9: Analysis of Army, Joint, and Combined doctrine in Collins’ proposal to move FM 100-5 proponenty to TRADOC.....	353
Figure 10: Range of Military Operations in the Theater Strategic Environment as approved for FM 100 5, 1993 edition	359

Notice

This manuscript contains no classified material.

All classified materials and sources have been either declassified or redacted as required under the provisions of Department of Defense Instruction 5200.01 or other regulation as applicable.

Dedication

To the memory of the 187 American, Polish, French, Latvian, and Czech men and women who died in Afghanistan from April 10, 2008 to June 6, 2009 under the authority of the Combined/Joint Task Force 101 and Regional Command (East) campaign plan.

I'll do better next time.

Introduction

The exchange between Lieutenant Colonel Harry G. Summers, Jr. and a Colonel Tu of the People's Army of Vietnam on the strategic irrelevance of tactical victory on the battlefield is an epigraph in Summers's 1982 book *On Strategy: A Critical Analysis of the Vietnam War*.¹ While that exchange has been quoted to the point of becoming cliché, the paradox it illustrates, that tactical success divorced from strategy is doomed to failure, is at the heart of what the U.S. military has called operational art. That failure was the impetus to a change, born of the frustrations of Vietnam veterans who stayed to rebuild their institutions, in preparation for the next war the United States military would fight.

This dissertation describes how a U.S. military in tatters after the Vietnam War turned towards new challenges from 1973 to 1997, among them the Army's examination of the Soviet threat, the Marine Corps' differing schools of tactical thought, and the Air Force's internal and external politics. Those challenges resulted in different approaches to the operational art that bridged the gap between the tactics necessary to end battles and the strategy that guides the ending of wars.

This dissertation further examines how those three services practiced operational art during Operations DESERT SHIELD and DESERT STORM, and the changes in service and joint education, training, and doctrine that transpired after the conflict. Those improvements in the rhetoric and practice of operational art, especially in the joint arena, gave way to a pervasive and inappropriate bias to tactics, expressed in *Joint Vision 2010*, a concept whose influence on

¹ The exchange is the epigraph to the first chapter of *On Strategy*: "You know you never defeated us on the battlefield," said the American colonel. The North Vietnamese colonel pondered this remark a moment. "That may be so," he replied, "but it is also irrelevant." Harry G. Summers Jr., *On Strategy: A Critical Analysis of the Vietnam War* (Novato, Calif.: Presidio Press, 1982), 1.

joint and service concepts and doctrine undermined the promise that the development of operational art had brought to the U.S. military.

The theory, rhetoric, and practice of contemporary American operational art

Unlike strategy and tactics, operational art is not a commonly known expression in English. This dissertation provides a normative definition of operational art that establishes its unique characteristics to generalize different approaches to the discipline, and allow the comparison of otherwise very different methods.

The normative definition of operational art in this dissertation identifies four basic elements. The first is strategy, which defines the reasons for the conduct of operational art, and more importantly, the termination criteria that frame the requirements for the next element. The second is campaigning, which translates the ends defined in the strategy into directive tactical guidance to subordinate units. Campaign planning to translate strategy into operational direction is one part of campaigning. The other part is execution of the campaign, ultimately expressed through tactics. However, the execution of operational art has traditionally hinged on two additional elements peculiar to campaigning that transcend tactics. Those elements relate to the concepts of culmination, which refers to a point at which the force can no longer attack or defend successfully, and operational reach, which Roger Barnett, a professor emeritus of strategy at the Naval War College, describes as “a finite range beyond which predominant elements of the joint force cannot prudently operate or maintain effective operations.”² The third element is force flow, roughly described as the art and science of deploying forces over expeditionary distances into combat. The fourth element is logistics, to enable forces committed to a campaign to

² Joint Chiefs of Staff, *Joint Publication 3-0, Joint Operations* (Washington, D.C.: G.P.O., 2011), IV-23; Roger W. Barnett, *Navy Strategic Culture: Why the Navy Thinks Differently* (Annapolis, Md.: Naval Institute Press, 2009), 45.

continue operations for the duration of the campaign, to attain the termination criteria necessary to achieve strategic ends.

Based on those foundations, this dissertation offers several propositions on operational art: operational art and strategic art are inseparable, operational art without strategy is merely tactics, tactical excellence without operational art is irrelevant, operational warfare requires balanced application of both art and science, and that operational warfare is inherently joint. These propositions, drawn from several theorists on strategy and operational art, namely A. A. Svechin, Arthur F. Lykke, Jr., Richard A. Chilcoat, James J. Schneider, and Colin S. Gray, are borne out in multiple case studies, both in the Soviet experience from 1917 to 1991, as well as the American experience from 1973 to 1997.

Operational art originated in the confluence of societal, economic, and military changes that started in the Industrial Revolution. Although various scholars have placed its origins in the Napoleonic Wars, American Civil War, and the Franco-Prussian War, the first systematic development of operational art theory came from Russian and Soviet experience during World War I and the Russian Civil War. Theorists such as Svechin were instrumental in the creation of a body of theoretical and practical literature for the conduct of operational art-- a direct translation of A. A. Svechin's expression *operativnoe iskusstvo*. The deep operations doctrine that emerged from the work of V.K. Triandafillov, M.N. Tukhachevsky, G.S. Isserson, and other theorists was an attempt to apply military methods to the attainment of Soviet national strategic ends in potential wars against Germany or Japan. That operational art was effective in achieving both limited war ends, as occurred against Japan in 1938, and in general war, as occurred against Germany in 1944-1945. After the war, the Soviets were unable to resist the siren song of nuclear weapons as strategy through tactical actions, and discarded operational art, only to revive it after

the Cuban Missile Crisis. The Soviet rediscovery of operational art in the 1970s led to a reexamination of deep operations in the 1980s, including such organizations as the operational maneuver group, but it had a fatal flaw-- the tactical ability of Soviet junior leaders was unequal to the sophisticated operational doctrine that they were to implement. Compounding that tactical-operational mismatch was the removal of the theater nuclear weapons after the 1987 Intermediate Nuclear Forces Treaty. Those theater nuclear weapons were the Soviet counterweight to NATO precision strike capabilities that had started in the efforts of the U.S. Army to shift the balance of conventional forces away from the more numerous Soviets.

The Vietnam War had left the Army bereft of its institutional identity. The Army's revitalization in the 1970s started with the efforts of General William DePuy and the Active Defense doctrine in the 1976 edition of Field Manual (FM) 100-5. DePuy's focus on tactics to the exclusion of almost everything else resulted in an examination of strategy and a new manual in the form of FM 100-1. The products of that examination of strategy included Summers's *On Strategy* and Lykke's model of strategy, both originating at the Army War College.

The limitations of Active Defense became apparent in experimentation, both in Germany and in the United States, and General Donn Starry, who succeeded DePuy, was the catalyst to a new FM 100-5 in 1982 and its doctrine of AirLand Battle, which merged the different efforts within the Army to address tactical combined arms warfare, battlefield use of nuclear weapons, and deep attack in conjunction with the Air Force to counter the Soviet threat to Western Europe. The first version of AirLand Battle introduced the operational level of war to Army doctrine, but a further refinement of AirLand Battle in the 1986 FM 100-5 marked the formal introduction of operational art to the U.S. Army. The approach in AirLand Battle was an acknowledgment that tactics alone could not address the challenges the Army faced in the defense of Western Europe.

AirLand Battle coincided with two Army initiatives addressing education and training for operational art. The first was the School of Advanced Military Studies (SAMS), a result of the recommendations made by Colonel Huba Wass de Czege, one of the authors of AirLand Battle. The second was the Battle Command Training Program (BCTP), which attempted to replicate for divisions and corps the tremendous successes the Army had made in training battalions and brigades through the National Training Center and other “dirt” combat training centers.

The U.S. Marine Corps took a different path, seeking to recast itself apart from the Army after Vietnam, and undertook a 1976 study of its structure, roles, and missions that formed part of the basis for its journey towards discovering operational art. Rather than pursuing a role as a second land army, the Marine Corps embraced a contingency response mission and sought to regain the institutional expertise in amphibious operations that had languished in Vietnam.

The debate over the tactics that the Marine Corps would employ, however, was a bitterly-contested affair, fought both in the official institutions of the Marine Corps and in print in the *Marine Corps Gazette*. In the late 1970s, a small but committed group of active duty Marines and interested civilians challenged the Marine Corps’ approach to tactics with a philosophy called “maneuver warfare,” using as their theoretical basis the work of John R. Boyd, a former Air Force fighter pilot. The so-called “maneuverists,” most visible among them Colonel Michael D. Wyly, Captain William Woods, Captain Gary I. Wilson, and William S. Lind, fought an intellectual insurgency throughout the Marine Corps for almost a decade.

The reformers gained their most powerful advocate in General Alfred M. Gray, Jr., Commandant of the Marine Corps. Gray wanted to institutionalize maneuver warfare throughout the Marine Corps, and to that end, promulgated *Warfighting*, a new manual designated as Fleet Marine Force Manual (FMFM) 1. Captain John F. Schmitt, who had written *Warfighting* under

Gray's direction, followed with FMFM 1-1, a manual titled *Campaigning*, which had direct application for the theory and practice of operational art in the Marine Corps. By the end of the Cold War, Gray's imprimatur had provided the maneuver warfare insurgents victory in the battle for the intellectual direction of the Marine Corps.

The U.S. Air Force's natural orientation on theater-level warfare would have been well-suited for the theory and practice of operational art, but the Air Force lacked a unified theory of air power to inform the conduct of strategy, let alone operational art in the 1970s. One of the reasons was the internecine cultural and budgetary conflict between Strategic Air Command (SAC) and the Air Force major commands comprised of fighters and attack aircraft collectively known as the Tactical Air Forces (TAF).³ As a result, the Air Force operational doctrine that should have informed the conduct of operational art became obsolete almost immediately after its publication in 1969, and Air Force doctrine stayed moribund through most of the Cold War.

The Air Force's training initiatives were a far brighter story. They were part of a professionalization of the force (and the TAF in particular) in the 1970s in recognition of the Soviet threat. The success of tactical training programs like RED FLAG at Nellis Air Force Base (AFB), Nevada, led to an exercise program for air operations center staffs at Hurlburt Field, Florida called BLUE FLAG, which was the only operational staff training program in the Department of Defense until 1988. The Air Force, unique among the services, also established two short courses at Maxwell AFB, Alabama to teach the mechanics of operational level warfare.

The most significant conceptual development for operational art in the Air Force was Colonel John Warden's *The Air Campaign*, a book that articulated "a philosophical and

³ The three major commands comprising the TAF were Tactical Air Command (TAC), Pacific Air Forces (PACAF), and U.S. Air Forces in Europe (USAFE).

theoretical framework for conceptualizing, planning, and executing an air campaign.”⁴ Warden polarized readers with his assertion that air power could be decisive as a single arm. His characterization of close air support as the least preferred activity for an air commander ran counter to the conventional belief in the TAF that air power was complementary to the Army’s AirLand Battle doctrine.

All of the services’ different approaches to operational art, while intended for war with the Soviet Union, saw application in Southwest Asia during Operations DESERT SHIELD and DESERT STORM, the first large joint campaign occurring after the passage of the Goldwater-Nichols Department of Defense Reorganization Act of 1986.⁵ One of the reforms that followed the Goldwater-Nichols act was the establishment of the U.S. Transportation Command (USTRANSCOM) to manage all strategic deployments for the Department of Defense. Within the theater of operations, General H. Norman Schwarzkopf, commander in chief of U.S. Central Command (USCENTCOM), established a Support Command (SUPCOM) that served as a common user logistics provider to American and some coalition forces-- in essence, creating a joint logistics command in all but name. Both USTRANSCOM and the SUPCOM faced repeated challenges from commanders of tactical units who attempted to place their priorities over those of the joint force.

DESERT STORM marked the modern debut of the joint force air component commander (JFACC), as well as the first use of a master attack plan and air tasking order to translate Schwarzkopf’s strategic guidance into tactical direction for execution by flying units. The establishment of a JFACC caused considerable friction with the sea services, which balked at an

⁴ Lt Col John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988), xix.

⁵ While Operation JUST CAUSE in Panama in 1989-1990 was a joint campaign, far fewer forces deployed to Panama, and the scope of the deployment did not require the commitment of the logistics and service components to the extent required for DESERT SHIELD and DESERT STORM.

Air Force officer commanding Navy and Marine aircraft. It also was a focal point for complaints from Army units that the Air Force was not providing sufficient offensive air support to the ground forces. While some of those complaints stemmed from the application of Warden's theories to the targets that appeared on the master attack plan and air tasking order, some of it originated in failures of Army forces to integrate into the targeting process.

The planning for the DESERT STORM offensive campaign plan was in the hands of the "Gang of Four," a small team of SAMS graduates attached to Schwarzkopf's headquarters. They had the benefit of being able to communicate with other SAMS graduates throughout the USCENCOM area of responsibility. That network was crucial due to the considerable secrecy required in planning, which in turn required the Gang of Four to rely on trusted individuals to provide information necessary for the plan without tipping off other members of the coalition.

The absence of any substantive joint doctrine, combined with the free hand that General H. Norman Schwarzkopf gave his component commanders, resulted in service components fighting independently at the tactical level, while Schwarzkopf was acting in the capacity of a land component commander in addition to his duties as a joint force commander, trying to ensure that the coalition achieved the termination criteria outlined in U.S. and coalition policy guidance. The authoritative direction that might have unified the activities of Schwarzkopf's component commanders across the land, sea, and air domains did not exist. Much of that discussion was lost in the one-sided outcomes at the tactical level, reflecting the considerable attention paid to the investments made in improving tactical forces before the war. Unfortunately, that attention also reflected a general ignorance of strategy and operational art in much of the force.

One of the positive effects of DESERT STORM was the impetus for a body of joint doctrine to harmonize the conduct of operational art across all the services. Service doctrine, far

improved, also reflected both the lessons of the war and the doctrinal work done in peacetime. The congressional scrutiny of professional military education by Representative Ike Skelton also resulted in greatly improved intermediate-level education programs for teaching operational art. The Marine Corps and Air Force established second-year advanced intermediate-level programs similar to SAMS, and the training programs for teaching the conduct of operational art also improved in the wake of the war.

What undermined operational art during the 1990s was the tacit, but recurrent belief that tactical concepts could be applied above the tactical level and still be successful. The joint expression of that belief was *Joint Vision 2010*, a concept paper that described a deterministic view of future warfare enabled by networked sensors and the promise of forcing outcomes through aggregated tactical actions. The major reductions in the defense budget that were part of the “peace dividend” after the end of the Cold War only exacerbated this trend, as the service cultures tended to protect the tactical systems and organizations they held dear.

The Navy is curiously absent from most of the discussion of operational art in this period. Although the Navy has justifiably considered itself the most strategically-oriented of the services, owing to its daily responsibilities on the sea lanes that have strategic importance to the United States, in its operations the Navy is the most tactically-focused of the services. While operational art has had several fathers, the Navy, by virtue of its service culture, lacked some of the most important factors-- namely doctrine and professional military education-- that contributed to the development of operational art in the other services.

In the late 1970s, Admiral Thomas B. Hayward, Chief of Naval Operations, directed the development of a maritime strategy that established an overarching framework for the Navy’s disparate communities and in doing so reduce the squabbling over budget share that had

characterized much of the discourse within the service. *The Maritime Strategy* that emerged from that development had a primarily fiscal purpose. The Navy needed a strategic concept to describe what capabilities were necessary against the Warsaw Pact and how those capabilities might be employed in wartime. Instead of developing force structure, training, and materiel in isolation, the Navy used *The Maritime Strategy* to unify its acquisitions and combat developments efforts.⁶

The Army, Air Force, and Marine Corps used doctrine to varying degrees as a basis for establishing the projected requirements for future forces and budgets. While the Air Force had never viewed doctrine as authoritatively as their counterparts in the Army and Marine Corps, the Navy considered doctrine antithetical to the philosophy of independence and initiative exercised by captains at sea, and avoided doctrine institutionally, conflating doctrine and procedures. The former was authoritative but not directive, while the latter was directive and prescribed specific actions in certain circumstances.⁷ *The Maritime Strategy* became an expression of doctrine as other services employed it, without using that name.⁸

The Navy's other intellectual focus of tactics was a product of the unforgiving character of operations at sea. Innovations in training such as the United States Navy Fighter Weapons School (TOPGUN), the Naval Strike Warfare Center (STRIKE "U") for air-to-ground warfare, and in acquisitions like the Aegis naval weapons system greatly improved the tactical capability

⁶ John B. Hattendorf, *The Evolution of the U.S. Navy's Maritime Strategy, 1977-1986*, Newport Paper No. 19 (Newport, R.I.: Center for Naval Warfare Studies, 2004), 38, 65–67.

⁷ An example of the Navy's traditional perspective on doctrine appears in Barnett, *Navy Strategic Culture: Why the Navy Thinks Differently*, 17–19; James J. Tritten, "Naval Perspectives on Military Doctrine," *Naval War College Review* XLVIII, no. 2 (Spring 1995): 33–34.

⁸ The Navy did not publish Naval Doctrine Publication 1, *Naval Warfare*, until 1994. Rebecca Grant, "Joint Doctrine: Dangers and Opportunities" (RAND, Project Air Force, August 1996), 12, IRIS 01118927, Air Force Historical Research Activity.

of the maritime force.⁹ What was missing was its translation to the conduct of campaigning at the theater level.

The Navy's void between strategy and tactics became even more pronounced through a broader institutional contempt for officer professional military education. Unlike the other services, the Navy did not consider professional military education a requirement for promotion. Over time, the Naval War College junior and senior curricula became virtually indistinguishable, to reduce the disruption to the force caused by time spent away from sea.¹⁰

In the absence of education, naval officers generally defaulted to their most immediate concerns at the tactical level. Excepting individuals like Vice Admiral Stansfield Turner, who reintroduced strategy to the Naval War College curriculum in the early 1970s, strategy was an abstraction, and as such, operational art was nonexistent.¹¹ The absence of authoritative naval doctrine other than *The Maritime Strategy* left little to guide the employment of naval forces beyond the procedures in various naval warfare specialties. In the absence of relevant strategic or theater experience or education, naval officers fell back to their own tactical bias and made themselves irrelevant in the conduct of operational art.

Why operational art?

The spark for this dissertation was my assignment to the staff of the 82d Airborne Division as a maneuver plans officer. That experience opened new horizons to the possibility that tactical actions could be employed toward something more significant than just winning

⁹ Richard Hallion, *Storm over Iraq: Air Power and the Gulf War* (Washington: Smithsonian Institution Press, 1992), 31, 103.

¹⁰ U.S. General Accounting Office, National Security and International Affairs Division, "Navy: Status of Recommendations on Officers' Professional Military Education" (G.P.O., March 25, 1991), 10–11, GAO/NSIAD-91-124BR.

¹¹ LtGen (Ret) Paul K. Van Riper, interview by author, May 12, 2012, recording and notes in author's possession.

battles for their own sake. A powerful catalyst for those explorations of operational art came from the examples provided by then-Majors Bill Wunderle and Tom Donovan, the two plans chiefs during my tour. Both of them were graduates of SAMS, and represented what Kevin C. M. Benson, in a history of that school, has called “an elite of capability and contribution” that clearly distinguished them from the other officers in the division staff.¹²

In 2007, after graduation from SAMS and arrival at the 101st Airborne Division, I was assigned as the primary author of a campaign plan that balanced national, theater, and alliance strategies and plans for an 18-month period of Operation ENDURING FREEDOM. It was in that position that I witnessed the interplay of strategy, campaigning, and tactics, and saw how the actions of tactical and operational forces had a direct effect on the strategic ends of the higher campaign.

While an account of the continued development of operational art to the present day would take this dissertation out of the realm of history, many of the trends that appeared in the historical case studies, regardless of era, were true of my own experience, and I returned from Afghanistan deeply dissatisfied with the performance of operational art, even though many of the factors that contributed to that sense were beyond my immediate control.

While studies of Operation DESERT STORM are plentiful, many of them either focus on the strategic outcomes of the war or on tactical engagements. Few of those histories address in detail the translation of that strategy into tactics, or how those officers had been prepared for the conduct of their duties. Among the exceptions are Colonel Richard Swain’s *Lucky War: Third Army in Desert Storm*, Colonel Richard Reynolds’ *Heart of the Storm: The Genesis of the Air Campaign against Iraq*, and Colonel Edward Mann’s *Thunder and Lightning: Desert Storm and*

¹² Kevin C. M. Benson, “Educating the Army’s Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994” (PhD dissertation, Lawrence: University of Kansas, 2010), 29.

the Airpower Debates. It is worth noting that Swain, educated at Duke, was the former director of the Advanced Operational Art Studies Fellowship at SAMS, while Reynolds and Mann were educated at Harvard and Tufts respectively before researching and writing doctrine for the Air Force. They had the benefit of being academics and practitioners of the topics on which they wrote.

This dissertation represents an examination of the roots of the force I entered in the 1990s, but is also a direct outgrowth of the challenges that commands and staffs face in the planning and conduct of strategy, operational art, and tactics. While this is ostensibly a military history, it also seeks to provide an intellectual history of the influences that converged during a pivotal period for the American military. While the aforementioned studies focus on the specifics of a single service, this study of operational art recontextualizes some of those accounts into a larger whole, befitting the strategic nature and joint character of modern American campaigning. It is also a cautionary tale for contemporary practitioners of operational art, who are likely to face many of the same kind of challenges that their forebears faced through the end of the Cold War and beyond.

Chapter 1

Toward a Normative Definition of Operational Art

It was at the operational level, especially, that we lost Vietnam. Marines and soldiers at the tactical level fought well. They won their battles. But the campaigns-if any can really be identified- seemed to lack direction. They lacked strategic purpose. And if, indeed, cohesive planning at the operational level was being done, it was not getting down to us at the tactical level. Our strategy in Vietnam can be blamed, too. But it has been easy to place the blame for flawed strategy at the Washington level. Generals have claimed that civilians were meddling in strategy. Maybe they were. But what were the generals doing about it? It seemed to me then, and it seems to me now, that we were lacking in generalship, that Vietnam was being called a platoon leader's war not because it needed to be one but because the generals did not understand their role, did not know what to do, and either oversupervised at the tactical level or stayed in the rear, enamored with statistics. I am not saying there was no endeavor to plan campaigns. I am saying that the planning that was done did not work. And the slowness to achieve any effect eventually led to the disenchantment at home that we so quickly point to as the scapegoat for our shortcoming.

Colonel Michael D. Wyly, U.S. Marine Corps
Marine Air-Ground Task Force Warfighting Center¹

The topic of operational art appeared in American military literature in the 1980s, and has since become an accepted part of Western military doctrine. In spite of its acceptance, operational art is a poorly understood term. The consequence of this lack of understanding is not a purely academic problem.

Most common interpretations of operational art describe it as the theory and practice of campaigning, specifically the conduct of military operations to achieve the political objectives necessary to prevail in a war. Since the early 20th century, the successful termination of wars on favorable terms to the victor has often required the integration of multiple instruments of national power towards that end. The translation of strategy into tangible actions employing one or more instruments of national power requires coherency in the operational art. Operational art develops

¹ Col Michael D. Wyly, "Why Lieutenants Should Study Strategy," *Marine Corps Gazette* 72, no. 10 (October 1988): 43.

the campaigns and directs the tactics to achieve the ends that strategy provides. When that strategy, operational art, and tactics are disconnected from each other, a combatant risks failure. In the case of a general war of national survival, that risk is as extreme as destruction of the state. Even in the case of a limited war where the stakes of the conflict are not as extreme, the consequences of a failure of operational art can be significant or even catastrophic. In the case of the Soviet Union, operational art emerged from defeat in World War I and victory in the Russian Civil War, first appearing in A. A. Svechin's treatise on strategy in 1926.² In the case of the United States, its formal discovery of operational art was an outgrowth of its inability to gain a strategically favorable outcome, in spite of its tactical military successes in Vietnam.

Terms of reference

Placing operational art in its proper context requires an explication of the other military intellectual disciplines associated with operational art. In the interests of simplicity, some terms come from the joint doctrine of the United States Department of Defense, which provides a set of commonly accepted lexicon that have become common usage.

Instruments of national power

Instruments of national power are tools used by a state "to apply its sources of power, including its culture, human potential, industry, science and technology, academic institutions, geography, and national will."³ The Department of Defense recognizes four specific instruments of national power, namely diplomatic, information, military, and economic. While other studies of strategy have recognized other forms of national power such as legal, intelligence, and financial, those other forms are derivatives of the four that represent the primary basis for the

² A. A. Svechin, *Strategy* (Minneapolis, Minn.: East View Publications, 1992), 269.

³ Joint Chiefs of Staff, *Joint Publication 1, Joint Warfare of the Armed Forces of the United States* (Washington, D.C.: G.P.O., 2007), I-8.

practice of strategy in the American government.⁴ In most cases, these instruments are employed in combination; unilateral employment of a single instrument of national power is rarely successful in gaining strategically decisive outcomes.

The first two instruments of national power are typically directive in their employment, in that policymakers and their subordinates can direct the employment of these instruments towards the interests of a state. The first, diplomacy, is generally defined as the principal instrument for engaging with other states and foreign groups to advance a country's values, interests, and objectives. Diplomacy relies on other instruments of national power to provide credible coercive value, whether by military force or by economic sanction. The military instrument of national power, thus, encompasses the available resources and actions taken in support of national security goals by the military and its associated organizations to coerce or compel another state or non-state actor to submit.⁵

The other two instruments of national power are less subject to directive control. Of the two, the economic instrument of national power includes both entities such as the Department of the Treasury, which acts as a steward of American economic and financial systems, but also includes both international financial institutions and the private sector, which the U.S. government does not directly control. The informational instrument of national power is the one that is the hardest to control in practice, as it encompasses multiple components that do not lend themselves to centralized control.⁶

⁴ J. Boone Bartholomees Jr., "A Survey of the Theory of Strategy," in J. Boone Bartholomees Jr., ed., *The U.S. Army War College Guide to National Security Issues*, vol. Volume 1, Theory of war and strategy, 4th ed. (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010), 19.

⁵ Joint Chiefs of Staff, *JP 1 (2007)*, I-9-I-10.

⁶ *Ibid.*, I-10.

Levels of War

This study of operational art rests on three commonly accepted levels of war, specifically strategy, operations, and tactics, with strategy further split between the national and theater strategic levels. Such a distinction between national strategy and theater strategy is a recent development, and one that implies a degree of power that only states with hegemonic power, such as the United States and Soviet Union, have been able to wield. There are certain conditions that must exist for that distinction to be present, and those conditions only affect the execution of strategy, rather than operations or tactics.

Tactics

Tactics is perhaps the most straightforward term. The U.S. Department of Defense describes tactics in the context of the tactical level of war, and defines it as “The level of war at which battles and engagements are planned and executed to achieve military objectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives.”⁷ Tactics, at its most fundamental level, is the method military forces employ to fight engagements and battles. While tactics inherently involves only the military instrument of national power, the limited duration and focus at the tactical level distinguish it from the other levels of war.

Strategy

Strategy, commonly regarded as the highest level of war, is a particularly nebulous term. Its origins are comparatively recent. The first time that term saw usage in contemporary context

⁷ Joint Chiefs of Staff, *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms (revised as of 11 May 2011)* (Washington, D.C.: G.P.O., 2010), 359.

was Lieutenant Colonel Paul Gideon Joly de Maizeroy's reference to *stratégie* in 1771, and the general meaning of the term has remained largely the same since.⁸ While the Department of Defense's official definition of strategy is "a prudent idea or set of ideas for employing the instruments of national power in a synchronized and integrated fashion to achieve theater, national, and/or multinational objectives," such a definition is a relatively sterile description of action. Other definitions of strategy include Colin Gray's definition, originally introduced in his 1990 book *Modern Strategy*, and revisited in his 2011 book *The Strategy Bridge*. Gray describes strategy in functional terms, namely "the direction and use made of means by chosen ways in order to achieve desired ends."⁹ B. H. Liddell Hart offers another definition of strategy as "the art of distributing and applying military means to fulfill the ends of policy."¹⁰ Specifically, strategy seeks to balance the projected employment of resources against the availability of those resources to achieve the goals of a state.

One of the most commonly accepted frameworks for strategy is the one developed and taught by Arthur F. Lykke, Jr. and others at the U.S. Army War College (USAWC) since the 1980s. That framework, which has gained wide acceptance not only within the Department of Defense, but also within the Department of State and the North Atlantic Treaty Organization, focuses primarily on the employment of instruments of national power in the pursuit of political (rather than purely military) objectives.¹¹ Lykke saw strategy as existing within a comprehensive continuum that encompassed the entire environment, but had to be practical enough to enable a

⁸ Colin S. Gray, *The Strategy Bridge: Theory for Practice* (Oxford: Oxford University Press, 2010), 4.

⁹ *Ibid.*, 17–19. Joint Chiefs of Staff, *JP 1-02*, 349.

¹⁰ Basil H. Liddell Hart, *Strategy* (New York: Meridian, 1991), 321. Gray defines policy as "the political objectives that provide the purposes of particular historical strategies." Gray, *The Strategy Bridge: Theory for Practice*, 18. Policy is a product of politics; it provides the basis for the political objectives that underpin strategic ends.

¹¹ H. Richard Yarger, "Toward a Theory of Strategy: Art Lykke and the U.S. Army War College Strategy Model," in Bartholomees, *The U.S. Army War College Guide to National Security Issues*, Volume 1:, Theory of war and strategy:45.

strategist to act towards achievement of the political goals involved. He divided that strategy into four elements; ends, ways, means, and risk:

- *Ends (objectives)* explain “what” is to be accomplished. Ends are objectives that if accomplished create, or contribute to, the achievement of the desired end state at the level of strategy being analyzed and, ultimately, serve national interests.
- *Ways (strategic concepts/courses of action)* explain “how” the ends are to be accomplished by the employment of resources. The concept must be explicit enough to provide planning guidance to those who must implement and resource it. Since ways convey action they often have a verb, but ways are statements of “how,” not “what” in relation to the objective of a strategy. Some confusion exists because the concept for higher strategy often defines the objectives of the next lower level of strategy. A simple test for a way is to ask “in order to do what?” That should lead to the real objective. Some concepts are so accepted that their names have been given to specific strategies (containment, forward defense, assured destruction, forward presence are illustrations). But note that in actual practice these strategies have specific objectives and forces associated with them and the concept is better developed than the short title suggests.
- *Means (resources)* explain what specific resources are to be used in applying the concepts to accomplish the objectives and use no verb. Means can be tangible or intangible. Examples of tangible means include forces, people, equipment, money, and facilities. Intangible resources include things like “will,” courage, or intellect.
- *Risk* explains the gap between what is to be achieved and the concepts and resources available to achieve the objective. Since there are never enough resources or a clever enough concept to assure 100 percent success in the competitive international environment, there is always some risk. The strategist seeks to minimize this risk through his development of the strategy—the balance of ends, ways, and means.¹²

The notion of risk is particularly important, and is an element often overlooked in discussions of strategy. Vetting a strategy realistically for risk is critical; an honest assessment of the other elements of a strategy will highlight where that risk exists.

Strategic Art

The process of actually formulating and implementing strategy, however, is discrete from strategy itself. One definition that has seen contemporary usage at USAWC comes from Richard A. Chilcoat, one of its previous commandants, in a short thinkpiece called “Strategic Art: The New Discipline for 21st Century Leaders.” In that article, Chilcoat proposes a definition for

¹² Ibid., Volume 1:, Theory of war and strategy:45–49.

strategic art, which he defines as “the skillful formulation, coordination, and application of ends (objectives), ways (courses of action), and means (supporting resources) to promote and defend the national interests.” Although Chilcoat’s definition appears without much attribution in the U.S. Army’s current leadership manual, the definition has seen little traction outside USAWC. However, the Army’s courses on strategy (not coincidentally taught at USAWC) use Chilcoat’s definition authoritatively to describe the discipline. Chilcoat differentiates strategic art’s employment of instruments of national power to promote or defend national interests from operational art’s employment of the military instrument of power to achieve predominantly the objectives derived from a strategy. However, Chilcoat argues for an “integrated approach to strategy and operations,” an acknowledgment of the interplay between the strategic and operational levels of war.¹³

Studies of operational warfare and operational art

There exist comparatively few studies of operational warfare, particularly in the American experience. Of the military intellectual disciplines, most studies concentrate on strategy and tactics. While those accounts of operational warfare typically focus on the bridge of strategy into tactics, rigorous explorations of operational warfare as an activity or operational art as a discipline are uncommon. The paucity of those operational-level studies stems partially from the scholars of strategy and tactics themselves.

Studies of strategy (in its classical sense) often use history as direct case studies.

Scholars of strategy include academics, typically historians or social scientists, but also some

¹³ Department of the Army, *Field Manual 6-22: Army Leadership: Competent, Confident, and Agile* (Washington, D.C.: G.P.O., 2006), 12–10–12–11. MG Richard A. Chilcoat, *Strategic Art: The New Discipline for 21st Century Leaders* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 1995), 2–4. The strategy courses in question are the Basic Strategic Art Program (the credentialing course for the U.S. Army’s Strategist functional area, the Defense Strategy Course, and the Advanced Strategic Art Program (an elective during the U.S. Army War College resident course).

practitioners of the discipline, who have achieved senior rank within a military force.

Occasionally, some practitioners become academics; of those, many of them teach at institutions of professional military education, typically very senior institutions such as USAWC or its Soviet counterpart, the Voroshilov General Staff Academy (now the General Staff Academy of the Armed Forces of the Russian Federation).

In contrast, a few civilians (most notably, William S. Lind) have written about tactics, but most of the authors of tactics have been military practitioners. While some of those military practitioners may hold academic credentials, many of those practitioners' professional experiences are overwhelmingly at the tactical level, to the point where it precludes any substantive insights on the operational or strategic levels of war. As a result, those narratives concentrate predominantly on tactics to the exclusion of strategy.

The knowledge and credentials required to write cogently on operational warfare, let alone operational art relative to strategy or tactics, are far less common. Many of those authors have come overwhelmingly from the military's staff colleges and war colleges. Fort Leavenworth claims several scholars of the operational art such as Huba Wass de Czege, Richard Hart Sinnreich, Leonard D. Holder, James J. Schneider, Bruce W. Menning, and Richard M. Swain, either within the U.S. Army Command and General Staff College (CGSC), its School of Advanced Military Studies (SAMS) or the Combat Studies Institute. Antulio J. Echevarria, II and Michael R. Matheny are still on the faculty at Carlisle Barracks. Bruce I. Gudmundsson has been a longtime member of the faculty at Marine Corps University at Quantico, Virginia, where Michael D. Wyly once taught, and Paul K. Van Riper, the Marine Corps University's first commandant, still teaches there as an adjunct instructor. Christopher Bassford, who authored the strategy manual and revised the campaigning manual for the U.S. Marine Corps, still teaches at

the National Defense University at Fort McNair, Washington, D.C. One explanation could be that only at those institutions is there a sufficient confluence of experience and education that would enable the intensive study of operational art and campaigning. While studies of strategy and tactics come from either practitioners or academics, scholars of the operational art often have both sets of credentials. Another explanation for this niche of operational authors is the place operational art occupies adjacent to tactics and strategy, requiring some fluency in both of those other disciplines. While general officers such as Wass de Czege, Holder, Van Riper, Donn A. Starry, Glenn K. Otis, Crosbie E. Saint, and Richard E. Simpkin have written persuasively about operational art, they are exceptions to the norm.

Of the literature of operational warfare or operational art, many scholarly works have been article-length treatments of the topic, rather than book-length monographs. Of the books that address operational art, many of them are syntheses of other aspects of military history or theory, rather than monographs of operational art. While theoretical works on what is now considered operational art can be found as early as the turn of the century, histories of the discipline (or its implementation as operational warfare) in its American experience are relatively recent developments.

Much of the study of American operational warfare starts with Russell F. Weigley's 1973 book *The American Way of War*. While the book has obviously aged, Weigley's observations on the way that the United States employed its military instrument of national power in pursuit of its strategic ends represent the first work in the master narrative of American operational art. Weigley's book predated the Western usage of the term operational art, but established an archetypal view of American military power, which sought to achieve a crushing military

victory, either through attrition of an adversary's military forces, or annihilation of that adversary's state itself.¹⁴

The first study of the development of the expressions of American operational art appears in Robert A. Doughty's 1979 monograph *The Evolution of U.S. Army Tactical Doctrine, 1946-1976*. Doughty, a U.S. Army armor officer who served in Vietnam and later earned a doctorate in history from the University of Kansas, was assigned to the Combat Studies Institute at CGSC in the late 1970s. *The Evolution of U.S. Army Tactical Doctrine* details how the U.S. Army's combined arms doctrine changed over the first three decades of the Cold War. The title of Doughty's monograph is a misnomer; while he nominally describes tactical doctrine, he actually describes the concepts and doctrine that underpinned how the U.S. Army fought – something that gained further treatment in histories of American operational art.

The first explicit discussion of the operational level of war appears in Edward N. Luttwak's article "The Operational Level of War," published in the Winter 1980-1981 edition of *International Security*. Luttwak sought to provide an alternative to what he (and Lind) called attrition warfare, and advocated a "relational-maneuver" form of warfare drawn from the German experience from 1939-1942 and the Finnish defense of Lapland. While Luttwak's argument alludes to a level of war that straddles the tactical and strategic levels of war, much of what he advocates describes methods at the tactical level, similar to the writings of Lind and other maneuver warfare advocates.¹⁵

The operational level of war emerged in the writings of General Donn A. Starry, who was a staff officer at the U.S. Military Assistance Command, Vietnam, commanded the 11th U.S. Armored Cavalry Regiment in Vietnam, and later commanded the U.S. Army Training and

¹⁴ COL Antulio Joseph Echevarria II, *Toward an American Way of War* (Carlisle Barracks, Pa.: U.S. Army War College, Strategic Studies Institute, 2004), 1–3.

¹⁵ Edward N. Luttwak, "The Operational Level of War," *International Security* 5, no. 3 (1980): 63–67.

Doctrine Command (TRADOC). Starry's explorations of operational warfare appear in his personal and official correspondence, the most significant of which is his article "Extending the Battlefield," published in the March 1981 issue of *Military Review*, the professional journal of the U.S. Army Combined Arms Center at Fort Leavenworth, Kansas.¹⁶ Starry and others, most notably Wass de Czege and Holder (at the time lieutenant colonels at Fort Leavenworth), were responsible for the 1982 edition of the U.S. Army's Field Manual (FM) 100-5, *Operations*, which was the first explicit mention of the operational level of war in Army doctrine. Holder oversaw the 1986 edition of FM 100-5, which expanded on the operational level of war and formally introduced operational art by name as a discipline to the U.S. Army, and by extension, to the remainder of the U.S. military.

Doctrinal and theoretical explorations aside, the histories of those explorations are comparatively sparse. The initial narrative of U.S. Army's development of tactical and operational doctrine appears in John L. Romjue's *From Active Defense to AirLand Battle*, published by the TRADOC History Office in 1984. *From Active Defense to AirLand Battle* focuses on the rationale for the tactics envisaged in the 1976 edition of FM 100-5, as well as some of the institutional processes that led to the development of the 1982 edition. Romjue highlights the influence of Starry, who had contributed much of the conceptual direction to the 1982 manual, assisted by other senior leaders such as William R. Richardson and Glenn K. Otis, in response to some of the debate that ensued in the wake of the 1976 manual. The book also notes the interactions that the Army had with the U.S. Air Force to implement the 1982 manual and its AirLand Battle concept. Romjue, one of the historians at the TRADOC History Office,

¹⁶ GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 1 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 170–212. GEN Donn A. Starry, "Extending the Battlefield," *Military Review* LXI, no. 3 (August 1978): 31–50.

drew his account concurrently to some of the events it sought to chronicle, and many of the personal details that would have fleshed out the narrative remained unavailable at the time.

A much more detailed and balanced narrative of the events leading up to the publication of the 1976 edition of FM 100-5 and the backlash that ensued exists in Paul H. Herbert's 1985 dissertation *Toward the Best Available Thought*, under the direction of Allan R. Millett at the Ohio State University. Herbert, an infantry officer who taught history at the United States Military Academy, saw the advent of operational art not only as a scholar, but also as a practitioner, serving as the operations officer for the 2d Brigade, 101st Airborne Division (Air Assault) several years after completing the dissertation.¹⁷ The Combat Studies Institute at Fort Leavenworth published *Toward the Best Available Thought* in revised form as *Deciding What Has to be Done* in 1988. Herbert's work remains the definitive account of the development of the official precursors of operational art in the U.S. Army.

Not all discussions of operational art in the 1980s came from American sources. One of the best works on the theory and practice of operational art appears in Richard E. Simpkin's 1985 book *Race to the Swift*. Simpkin, a British brigadier with long service in the British armored and mechanized force, had translated the *Soviet Army's Field Service Regulations of 1936* (abbreviated PU-36), a seminal work on operational art and its associated doctrine. Simpkin's translation and analysis of some of the body of work of M.N. Tukhachevsky, primary author of PU-36, appears in *Deep Battle*, published posthumously in 1987. The synthesis of Simpkin's own interpretations of Clausewitz as well as Tukhachevsky and other Soviet operational art theorists comes together in an argument for agile combined arms organizations employing maneuver warfare to defeat larger adversaries. Simpkin further explores implications

¹⁷ MAJ Paul H. Herbert, *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* (Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command & General Staff College, 1988), back cover.

to other military functions such as fires, intelligence, signals, command, and control as it related to the defense of Western Europe in the 1980s.¹⁸ Simpkin, like Herbert, represented the rare confluence of practitioners with academics.

A more purely academic treatment of operational warfare appears in Edward Hagerman's *The American Civil War and the Origins of Modern Warfare: Ideas, Organization and Field Command*. Published in 1988, it was an adaptation of his dissertation *The Evolution of Trench Warfare in the American Civil War*, under the direction of Theodore Ropp at Duke University in 1965. Hagerman described the tactics of trench warfare as well as the technical developments that contributed to the distributed operations characteristic of operational art. One of Hagerman's significant observations was that neither side could prevail in a single battle, requiring successive operations to achieve strategic ends.¹⁹

One of the most significant scholars of the operational art taught for 25 years at the institution that became most associated with the practice of operational art in the Army. James Schneider, professor of military theory at SAMS from 1984 to 2009, has written several important articles on operational art, the first of which was "The Loose Marble – and the Origins of Operational Art," published in the January 1989 issue of *Parameters*, the journal of the USAWC. Schneider presents a similar argument to Hagerman, in that the American Civil War, rather than the Napoleonic Wars, marked the advent of operational art. Schneider also authored several theoretical papers for use within the curriculum at SAMS, one of the most significant of which was "Vulcan's Anvil," which described the conditions necessary for operational art to

¹⁸ Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare* (London: Brassey's, 1994), xix–xx, 239–240.

¹⁹ Edward Hagerman, *The American Civil War and the Origins of Modern Warfare: ideas, organization, and field command* (Bloomington: Indiana University Press, 1988), 293.

exist and its resultant characteristics.²⁰ The source of some of these theoretical papers and his articles was *Mars Ascending: Total War and the Roots of the Soviet Warfare State 1864-1929*, his 1992 dissertation at the University of Kansas under Norman Saul and Jacob Kipp. The dissertation saw publication in 1994 as *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State*, and remains one of the best English language surveys of Soviet operational art theory up to the end of World War II.

Another study, albeit flawed, of Soviet operational art exists in Richard W. Harrison's 2001 book *The Russian Way of War: Operational Art, 1904-1940*. Harrison argues from a cultural analysis of Russian and Soviet military history that operational art was a peculiarly Soviet response to the challenges it faced after World War I, informed by its Imperial Russian heritage.²¹ However, he omits any development of operational art after 1940, thus leaving out a significant body of experience in World War II and afterwards.

The other English language survey of Soviet operational art theory is David M. Glantz's *Soviet Military Operational Art: In Pursuit of Deep Battle*, published in 1991. Glantz borrows heavily from two Soviet histories used at the Frunze Military Academy (the Soviet analog to CGSC) and the Voroshilov General Staff Academy.²² Glantz, at the time the director of the Soviet Army Studies Office at Fort Leavenworth, describes a taxonomy of Soviet military thought, with operational art as part of a larger continuum including strategy and tactics, as well as the concepts underpinning that strategy and operational art. His book is the most complete

²⁰ Several of these papers remain in the course reserve section for SAMS at the Combined Arms Research Library at Fort Leavenworth. James J. Schneider, *Vulcan's Anvil: The American Civil War and the Foundations of Operational Art*, SAMS Theoretical Paper No. 4 (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, June 16, 1992).

²¹ Richard W. Harrison, *The Russian Way of War: Operational Art, 1904-1940* (Lawrence: University Press of Kansas, 2001), 270–273.

²² David M. Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle* (London; Portland, Ore.: Frank Cass, 1991), preface.

survey of Soviet operational art, covering the entire period of the Soviet Union's military thought.

Studies of operational art internal to the U.S. Army began during the late 1980s. The first collection of internal studies of the operational art is Clayton R. Newell and Michael D. Krause's *On Operational Art*, published by the U.S. Army Center of Military History. A direct outgrowth of the 1986 FM 100-5, *On Operational Art* was intended as a set of theoretical and historical explorations of operational art by theorists and practitioners, but expanded in scope from its original charter and did not see publication until 1994.²³ Newell, a former professor at USAWC and at the time chief of the Historical Services Division at the U.S. Army Center of Military History, had published an earlier article in the September 1990 edition of *Military Review* titled "What is Operational Art?" That article outlines and explains a descriptive framework of operational art for an American military audience whose knowledge was heavily oriented towards the tactical, rather than the operational or strategic. A subsequent collection of historical analyses followed in 2005 as Krause and R. Cody Phillips' *Historical Perspectives on the Operational Art*, which examines the theory and practice of operational art in the French, German, Russian, Soviet, and American experiences. Those two anthologies aside, operational art remains an uncommon topic in official American military literature.

The studies of operational art theory have included many article-length explorations of the topic, among which include Holder's own reflections on the implementation of operational art within the American military professional education establishment. Those reflections form the basis of his 1990 *Military Review* article "Educating and Training for Theater Warfare," written immediately after completion of his tour as director of SAMS. A later SAMS director,

²³ Clayton R. Newell and Michael D. Krause, eds., *On Operational Art* (Washington, D.C.: G.P.O., 1994), v.

James K. Greer, explored potential future directions for operational art in his 2002 article “Operational Art for the Objective Force,” also published in *Military Review*.

Treatments of operational art theory started to appear in book-length form in the 1990s. The first of them was Robert R. Leonhard’s 1991 book *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle*. Leonhard explores AirLand Battle as expressed in the 1986 edition of FM 100-5, and its relationship to maneuver warfare, advocating dislocation over attrition of an adversary – an argument he credits to Lind and other maneuver warfare advocates, albeit applied to the Army rather than the Marine Corps, the original object of the maneuver warfare advocates.²⁴ Leonhard is unsparing in his criticism of the U.S. Army’s predilection to the tactical level of war, rather than to operational art or strategy, as expressed in the AirLand Battle concept as articulated and some of the concepts that followed.²⁵

Shimon Naveh, a retired Israeli brigadier, makes a similar case for operational shock as a basis for the prosecution of operational art. Naveh’s 1997 book *In Pursuit of Military Excellence: The Evolution of Operational Theory* drew from studies of the Soviet operational art theorists, most notably Tukhachevsky, as well as AirLand Battle, using Ludwig van Bertalanffy’s 1975 book *General Systems Theory* as a framework for tracing the origins of operational art.²⁶ Unfortunately, Naveh’s painfully obtuse prose obscures his definition of operational art, which he conflates with nonlinear systems, balancing maneuver and attrition as an entity independent of strategy or tactics.²⁷ Of the books on operational art, Naveh has had the

²⁴ Robert R. Leonhard, *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle* (Novato, Calif.: Presidio Press, 1991), x–xii.

²⁵ *Ibid.*, 11, 19, 310.

²⁶ Shimon Naveh, *In Pursuit of Military Excellence: the Evolution of Operational Theory* (London; Portland, Ore.: Frank Cass, 1997), xiv–xvi.

²⁷ *Ibid.*, 13–15.

most recent impact, in no small part because of the exposure his systemic operational design concept gained within SAMS between 2005 and 2008.²⁸

The study of operational warfare and operational art, of course, occurred in places other than Fort Leavenworth. Milan N. Vego's textbook *Operational Warfare: Theory and Practice* became a standard text at the Naval War College at Newport, Rhode Island in 2000 to support the curriculum of the Department of Joint Military Operations. In substantially revised form as *Joint Operational Warfare*, its monster size (over 1,400 pages) represents the collection of Vego's articles and essays on operational warfare, emphasizing both theory and practice, including operational art, which Vego equates to major operations in U.S. doctrine.²⁹ *Joint Operational Warfare* is a testament to Vego's prolific work on the operational level of war, and includes a second volume of case studies to support the first volume's explorations of theory and practice.

Case studies are the basis of another recent work on operational warfare. Robert M. Citino's 2004 book *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*. Citino examines the German and Allied experiences in World War II, the Korean War, the Arab-Israeli

²⁸ The first formal introduction of Naveh's systemic operational design occurred in the SAMS class of 2005 and continued through 2008, when focus shifted to a concept called "commander's appreciation and campaign design," itself replaced in Army doctrine by another concept called "design," as introduced in the 2008 edition of FM 3-0, *Operations*. William T. Sorrells et al., "Systemic Operational Design: an introduction." (unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2005). MAJ Barrett M. Bernard, "Systemic Operational Design: Bringing Efficacy to the Operational Level of War." (unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2007). Maj Edward P.W. Hayward, "Planning Beyond Tactics: Towards a Military Application of the Philosophy of Design in the Formulation of Strategy" (unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2008). U.S. Army Training and Doctrine Command, *Commander's Appreciation and Campaign Design* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 2008).

²⁹ Milan N. Vego, *Joint Operational Warfare: Theory and Practice* (Newport, R.I.: U.S. Naval War College, 2009), xix–xxi. The U.S. Department of Defense defines "major operation" as "a series of tactical actions (battles, engagements, strikes) conducted by combat forces of a single or several Services, coordinated in time and place, to achieve strategic or operational objectives in an operational area. These actions are conducted simultaneously or sequentially in accordance with a common plan and are controlled by a single commander. For noncombat operations, a reference to the relative size and scope of a military operation." Joint Chiefs of Staff, *JP 1-02*, 222.

Wars, the Indo-Pakistani War of 1971, the Iran-Iraq War in 1980-1988, and the U.S. Army's experience after Vietnam culminating in Operation DESERT STORM. Citino's case studies highlight a number of recurrent elements at the operational level of war, such as the importance of air power, the relationship between mobility and firepower, the nature of command and control, and significantly the role of the commander and his desired strategic ends.³⁰ Citino deliberately avoids a normative model of operational art, which is more often the purview of military theory, but provides a useful read for scholars of the operational art.

The most recent scholarship on the theory of operational art has resulted in some provocative discussions in the military education establishments. Of the first of these discussions is B. J. C. McKercher and Michael A. Hennessy's 1996 anthology *The Operational Art: Developments in the Theories of War*, which collects the papers presented at the 1995 Military History Symposium of the Royal Military College of Canada, the topic of which was operational art. Of note in this anthology is Swain's own chapter, which remains one of the few accounts that goes beyond Herbert or Romjue's accounts of the U.S. Army's revisions of FM 100-5.³¹

Allan English, Daniel Gosselin, Howard Coombs, and Laurence Hickey edited the 2005 anthology *The Operational Art: Canadian Perspective: Context and Concepts*, a collection of Canadian explorations of operational art. One significant Canadian variation from early interpretations is that they do not associate the operational level of war with any specific echelon or unit. Rather, it is the outcome of an action, which must necessarily accomplish strategic objectives, that constitutes operational art.³² The physical size and capabilities of the Canadian

³⁰ Robert M. Citino, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare* (Lawrence: University Press of Kansas, 2004), 4–9.

³¹ Richard M. Swain, "Filling the Void: The Operational Art and the U.S. Army," in *The Operational Art: Developments in the Theories of War*, by B. J. C. McKercher and Michael A. Hennessy (Westport, Conn.: Praeger, 1996), 147–172.

³² Allan D. English et al., eds., *The Operational Art: Canadian Perspectives: Leadership and Command* (Kingston, Ont.: Canadian Defence Academy Press, 2006), 9.

military compared to the American or Soviet militaries are contributing factors to that view, as well as the Canadians' traditional employment as part of a coalition in large operations. The Canadians highlight the land-centric nature of most operational art literature, and specifically examine approaches to operational art that focus on the air and maritime domains.

This focus away from specific units, such as U.S. army groups or Soviet fronts, also appears in Justin Kelly and Michael J. Brennan's monograph *Alien: How Operational Art Devoured Strategy*, published by the USAWC Strategic Studies Institute in 2009. Kelly, a retired Australian brigadier, and Brennan, an Australian Department of Defence civilian, are harshly critical of contemporary Western interpretations of operational art. They argue that campaigning has supplanted the role of strategy, principally from separation of the political and military realms, resulting in campaigns starting without full engagement of the strategy that must drive those campaigns. Notably, they also do not associate campaigning with a specific echelon of forces, arguing that the business of military leaders is tactics (which in their view encompasses campaigning), while policymakers should handle both policy and strategy. While Kelly and Brennan have also published a part of their monograph as a separate article in *Joint Forces Quarterly*, their highly provocative work has seen relatively little traction.³³

Frederick Kagan, in his 2006 book *Finding the Target: The Transformation of American Military Policy* chronicles the U.S. military's search for so-called "revolutions in military affairs" after the Vietnam War. Kagan, examining the various forms of military transformation, notes that while the character of warfare has changed, its nature has not. Kagan notes that the U.S. military, whether intentionally or not, has done its war planning with undue focus on combat, rather than the termination objectives for military operations. Kagan attributes this

³³ Justin Kelly and Michael J. Brennan, *Alien: How Operational Art Devoured Strategy* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2009), 96. Justin Kelly and Michael J. Brennan, "The Leavenworth heresy and the perversion of operational art," *Joint Forces Quarterly* 56, no. 1 (2010): 109–116.

failure of strategy to a traditional reluctance of military leaders to enter into policy decisions as well as the inability of the remainder of the U.S. government to prosecute postwar stability and reconstruction effectively.³⁴ Kagan's work, while not explicitly a study of operational art, illustrates some of the institutional and cultural factors contributing to the parochialism that hinders the effective conduct of operational warfare, solutions for which he is not optimistic.

Two works comprise the latest scholarship on operational art. The first is one of the rare book-length monographs on the discipline in the form of Michael R. Matheny's 2011 book *Carrying the War to the Enemy: American Operational Art to 1945*, an expanded version of his 2007 dissertation, under the direction of Gregory J. W. Urwin at Temple University. Matheny argues that while the U.S. military did not have an explicit definition of operational art leading up to or during World War II, its conduct of the war in both the European and Pacific theaters exhibited the necessary characteristics of operational art. Among those characteristics included the deployment of joint combat power across strategic distances in amounts sufficient to achieve decisive results, the integration of those land, maritime, and airpower forces into a coalition structure, and the logistics structure to support those forces. All of those elements required a command and staff capable of coordinating all of those efforts, and most significantly, the professional military education required to build all of those competencies and capabilities over time, generally during the interwar period. The comparative excellence of the U.S. military at strategic-level logistics and intelligence distinguished it from its Axis adversaries, providing the Allies a decisive advantage in the war.³⁵

³⁴ Frederick W. Kagan, *Finding the Target: The Transformation of American Military Policy* (New York: Encounter Books, 2006), xvi, 370–373.

³⁵ Michael R. Matheny, *Carrying the War to the Enemy: American Operational Art to 1945* (Norman: University of Oklahoma Press, 2011), xvi–xxi, 254–256.

The most recent collection on operational warfare and operational art appears in John Andreas Olsen and Martin van Creveld's 2011 collection, *The Evolution of Operational Art: From Napoleon to the Present*. The book began as an outgrowth of the desire of the Swedish National Defence College's Department of Military Studies for a one-volume anthology of works on operational art that focused on the full spread of theory and practice. It expanded to become a part of Oxford University's Changing Character of War Programme. *The Evolution of Operational Art* is a selection of national case studies, naturally starting with Napoleon, but also examining Prussian-German operational art. While the book includes the inevitable studies of Soviet and American forays into operational art, it includes chapters on Great Britain, Israel, and China. Out of those case studies, however, Olsen and van Creveld reemphasize the distinction among strategy, operational art, and tactics as the art of war, campaigning, and battle respectively. Olsen and van Creveld explicitly note two requirements for success in operational art, namely termination and a plan that ensures logistical feasibility of a campaign.³⁶ Many studies of operational art only allude to these two requirements, and yet, the many case studies of the practice of operational art illustrate starkly the failures of both.

The Practice of Operational Art

Several schools of thought exist on the origins of operational art. All of them place the origins of operational art after the Industrial Revolution. One argument for the earliest emergence of operational art appears in Robert M. Epstein's *Napoleon's Last Victory and the Emergence of Modern War*. Epstein argues that Napoleon's changes in recruitment, organization, and command constituted the origins of operational art. Napoleon's success at the tactical level bred the necessity of distributed maneuver as his the military instrument of French

³⁶ John Andreas Olsen and Martin van Creveld, *The Evolution of Operational Art: From Napoleon to the Present* (Oxford: Oxford University Press, 2011), 222–223.

national power became too large to control directly by one field commander. The scope and size of those forces, as well as their varied responsibility took Napoleon out of his role as a tactical field commander and elevated his responsibilities to the strategic level, forcing him to delegate authority to subordinate commanders. Epstein argues that Napoleon's campaign against the Hapsburgs in 1809 marked the beginning of modern war, by integrating the efforts of those geographically dispersed forces through a strategic war plan. Supporting those forces required full mobilization of the state, to include the creation of conscript militaries, which Napoleon divided into corps, which made those forces more difficult to destroy once decisively engaged.³⁷ Epstein also highlights Napoleon's failure of strategy, in that Napoleon's focus was on battlefield victory, not on the political conditions that led to armed rebellions in Calabria or the Iberian Peninsula or the considerations that addressed true termination of a war beyond a decisive battle.³⁸

Matthew Cooper, in a study of the roots of the German Army, posits a "new form of warfare" that had its roots in the second half of the 19th century. In *The German Army, 1933-1945*, Cooper notes that "the epithet *Blitzkrieg* might well be applied to their wars from 1866 to 1914 with as much justification as to their 1939-1941 campaigns." Cooper describes the Prussian (and later German) operational concept of rapid, decisive maneuver whose object was the encirclement and destruction of an enemy fielded force. Moltke, Alfred von Schlieffen, and their contemporaries sought to achieve a strategic end through the defeat in detail of an enemy force, using a method called *Kesselschlachten* (cauldron battles). Von Schlieffen's rationale for such a method was a strategy of *Vernichtungsgedanke* (idea of annihilation) as it focused on the destruction of an adversary's military instrument of national power to compel that adversary to

³⁷ Robert M. Epstein, *Napoleon's Last Victory and the Emergence of Modern War* (Lawrence, Kan.: University Press of Kansas, 1994), 6–17.

³⁸ *Ibid.*, 171–182.

submit to Prussian termination criteria.³⁹ However, the Prussian military (and their German successors) paid little heed to political-military factors; the General Staff's purview was purely military in scope, an emphasis echoed in the curriculum at the General Staff Academy, which eschewed a liberal arts curriculum for mathematics, tactics, and foreign languages. The only instruction in instruments of national power other than the military in the old Prussian general staff academy came indirectly through military history. As a result, the German general staff was ill-prepared for the strategic art it was required to exercise in World War I.⁴⁰

Schneider, a contemporary and colleague of Epstein at SAMS, provides yet another explanation in "The Loose Marble – and the Origins of Operational Art," and places the origins of operational art not within the Napoleonic period, but during the American Civil War. Schneider further refined this argument in "Vulcan's Anvil," a SAMS theoretical paper that also became the first chapter in *The Structure of Strategic Revolution*. Rather than Epstein's focus on organization and employment, Schneider focuses on strategic ends, that Napoleon's vision was still one of corps fighting tactically to achieve a decisive battle of annihilation against a combatant.⁴¹ Schneider highlights the American Civil War as the basis for distributed maneuver against an adversary not to achieve a decisive single battle of annihilation (as the Confederacy attempted at Gettysburg), but compelling the Confederacy to surrender, which had the destruction of the Confederate States Army as a necessary condition.⁴²

³⁹ Matthew Cooper, *The German Army, 1933-1945: its political and military failure* (Chelsea, Mich.: Scarborough House, 1990), 133–134. Defeat in detail is achieved by concentrating overwhelming combat power against separate parts of a force rather than defeating the entire force at once. Department of the Army, *Field Manual 3-90, Tactics* (Washington, D.C.: G.P.O., 2001), 2–7.

⁴⁰ Steven E. Clemente, "'Mit Gott! Für König Und Kaiser': a critical analysis of the making of the Prussian Army officer, 1860-1914" (PhD dissertation, Ann Arbor: University of Michigan, 1989), 350–353.

⁴¹ James J. Schneider, "The Loose Marble - and the Origins of Operational Art," *Parameters* 19, no. 1 (1989): 90.

⁴² *Ibid.*, 92.

All of these interpretations of operational art, however, share several common threads, which allude to the potential for a normative definition of operational art – and with it, the operational warfare that is the product of operational art as a military discipline.

A Normative Definition of Operational Art

Operational art, relative to tactics or strategy, is a comparatively recent development that bridges those other two disciplines and their associated levels of war. At the heart of the operational level of war is the notion of campaigning, which lies distinct from tactics, but directs tactical actions to achieve termination criteria within a larger strategic context. A. A. Svechin, a Soviet military theorist and author of the first Soviet work on strategy, is the originator of the term “operational art.” The introduction of operational art in Western military literature occurred formally in the U.S. Army’s 1986 edition of Field Manual 100-5, which defined operational art as “the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization, and conduct of campaigns and major operations.”⁴³ While most other interpretations of the term are similar to the original U.S. Army definition, the definitions in recent Western military literature have diluted some of the elements of that discipline, warranting a normative definition of the term.⁴⁴ Any view of operational art requires a solid grounding in both strategy and tactics to translate the grammar of conceptual ends, ways, and means of the former into the concrete battlefield direction of the latter.

⁴³ Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1982), 10.

⁴⁴ The North Atlantic Treaty Organization’s current definition of the term illustrates this dilution: “The employment of forces to attain strategic and/or operational objectives through the design, organization, integration and conduct of strategies, campaigns, major operations and battles.” That definition imputes the conduct of strategy, campaigns, and tactical actions all to operational art. North Atlantic Treaty Organization, *Allied Joint Publication-01(D), Allied Joint Doctrine* (Brussels: North Atlantic Treaty Organization, 2010), Lexicon–11. The most recent U.S. Army definition is even more ambiguous: “the pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose.” By that definition, literally any military action, tactical or otherwise, could be construed as operational art. Department of the Army, *Army Doctrine Publication 3-0, Unified Land Operations* (Washington, D.C.: G.P.O., 2011), 9.

Purpose

Based on the theory and practice of operational art over time, several fundamental elements are apparent. A normative model of operational art must identify certain unique characteristics, as well as a way to differentiate it from the conduct of strategy or tactics. Towards this end, this normative definition seeks to expand upon the U.S. Department of Defense's current doctrine, which defines operational art as "The application of creative imagination by commanders and staffs — supported by their skill, knowledge, and experience — to design strategies, campaigns, and major operations and organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war."⁴⁵ The significance of the current definition is in its ties across the strategic, operational, and tactical levels of war, as well as the specific activities of the actors in the definition. Such a definition requires an examination of the purpose and components of operational warfare, as well as their ramifications.

At initial glance, the American definition of operational art seems to cut across strategic art, operational art, and tactics in its scope. However, the development and implementation of military strategy is necessarily subordinate to that of a national strategy, which itself rests within the framework of the policy goals set by national leaders. At its heart, operational art is the accomplishment of strategic ends in a given time and place through the coordinated employment of tactical actions, an activity often described as campaigning, both in its preparation as well as its execution.⁴⁶

⁴⁵ Joint Chiefs of Staff, *JP 1-02*, 269.

⁴⁶ This description is derived from the U.S. Marine Corps' manual on operational art, appropriately titled *Campaigning*. Headquarters, U. S. Marine Corps, *Marine Corps Doctrinal Publication 1: Warfighting* (Washington, D.C.: G.P.O., 1997), 3.

Elements of Operational Art

The basis of these elements comes from Colonel (Retired) Stephen D. Kidder, professor of joint operations at USAWC, who has been an educator of operational art and operational planners for over a decade, and previous to that, the chief of plans at U.S. Central Command.⁴⁷ The conduct of operational art occurs in two discrete but related grammars, namely planning and execution. Planning is critically important because of the difficulties inherent in the physics of moving forces from a base of operations all the way to deploying them into combat, combined with the coordination of all the enablers required to ensure their success at the tactical level. In a statement attributed to Helmuth von Moltke (the Elder), errors in the initial placement of forces are difficult if not impossible to overcome during the duration of a campaign.⁴⁸ The best efforts of units at the tactical level may be futile if an operational plan is infeasible beyond the tactical level, which highlights the second grammar of execution. Even superb plans may fail if the execution of those plans is poor. Part of the challenges inherent above the tactical level is the unified action of instruments of national power beyond the military. Tactical commanders can often ignore those other instruments of national power, but operational commanders must remain cognizant of the strategic context above them to ensure that the conduct of operational art remains grounded in strategy.

Thus, the first element of operational art must necessarily be **strategy**. The employment of the military instrument of national power should occur after the rationale for its employment has already been defined. Strategy provides that rationale, and more importantly for an

⁴⁷ Author's discussion with Stephen D. Kidder, professor, Department of Military Strategy, Plans, and Operations, U.S. Army War College, at Carlisle Barracks, Penn., April 8, 2011.

⁴⁸ Kevin C. M. Benson, "Landpower Essay 08-1: Tactics for Small Wars" (Association of the United States Army, Institute of Land Warfare, July 2008), 2. Benson also credits Schneider, who was a professor at SAMS from its inception in 1983 until 2008.

operational commander, the termination criteria that provide the ends towards which any operation must progress. No planning, let alone execution, should occur without strategy. However, the difficulty in strategy is its inherent coordination of all of the instruments of national power, something that only occurs at senior levels. Of the components, strategic art is truly the most nuanced in terms of art rather than science, due to the complexity of the problems involved.

The second element of operational art is **campaigning**, which translates the ends defined in the strategy into directive tactical guidance to subordinate units. Campaigning must factor in all of the instruments of national power at the strategic level to inform the employment of one of those instruments, in this case the military instrument, at the operational and tactical levels of war. A strategy by itself cannot provide the directive coordination of forces required to achieve success. Campaigning, however, provides the campaign plan to direct forces to accomplish the ends inherent to a strategy. It also provides a method for vetting that strategy, since a strategist cannot determine the feasibility of a strategy without some grounding in campaigning.

The third element of operational art is **force flow**. In practice, the deployment of forces into a theater relies partly on physics, since the deployment of forces over strategic distances is often time-consuming and requires substantial planning. The mechanics of force flow are such that successful deployment of troops and all of their enablers over strategic distances into a theater, let alone over operational distances into combat, requires careful planning and meticulous execution to avoid preventable delays. In comparison to the complexity of strategic art, the mechanics of force flow are very much in the realm of science. However, the sequencing of those forces (rather than just their movement) is where an operational art practitioner imparts his or her art to that science.

The other science of operational art is the fourth element of **logistics**, specifically strategic logistics from the home country, and operational logistics within the theater of operations. Strategic logistics and operational logistics are separate but related functions, and often belong to separate commanders in practice, a distinction that is not always clear to tactical commanders. Like force flow, logistics requires careful planning and execution for success; similar to deployment, certain logistics decisions, once executed, represent the casting of the proverbial die for a commander, especially when transiting strategic distances.

The subtext of the last two elements of operational warfare is the notion of culmination, a concept that the U.S. Department of Defense describes as “the point in time at which the force can no longer attack or defend successfully.” While culmination seems straightforward enough, it takes on additional significance when factoring in the notion of operational reach. Similar to culmination, operational reach has no authoritative definition, but is described as “a finite range beyond which predominant elements of the joint force cannot prudently operate or maintain effective operations.”⁴⁹ Roger W. Barnett, a professor emeritus of strategy at the U.S. Naval War College, notes that reach is not just the ability to attack targets at long distance, but also the ability to project power employing combat forces, logistics, combined with command and control to exploit any advantages gained from that power projection.⁵⁰ The confluence of the prudent employment of forces in operational art entails a balance between the conceptual art that characterizes strategy and the emphasis on technology, methods, and doctrine that characterizes tactics.

⁴⁹ Joint Chiefs of Staff, *Joint Publication 3-0, Joint Operations* (Washington, D.C.: G.P.O., 2011), IV–23.

⁵⁰ Roger W. Barnett, *Navy Strategic Culture: Why the Navy Thinks Differently* (Annapolis, Md.: Naval Institute Press, 2009), 45.

Some propositions on operational warfare

The purpose and elements of operational art provide context for some general observations on operational warfare:

Operational art and strategic art are inseparable. Operational art cannot exist without strategic art, primarily because no other discipline develops the strategic ends that constitute the termination conditions for a conflict. Kelly and Brennan offer a concise explanation when they assert “without good strategy which acknowledges the abstractions and dynamism of politics and designs campaigns accordingly, operational art is bereft of its guiding logic and becomes pointless.”⁵¹ Conversely, by employing operational art, a strategist has the ability to vet a strategy, which, without a campaign plan’s translation of that strategy into tactical direction, is merely wishful thinking. Strategy, especially as articulated in Lykke’s construct, does not offer sufficient specificity to enable execution by tactical commanders. Operational art turns strategy’s conceptual direction into the directive guidance that those tactical commanders need, making a strategy and a campaign plan two parts of a unified whole. Separated from each other, strategy may provide the termination criteria for a war, but operational art provides a process for realizing those termination criteria.

One of the criticisms that has been leveled at operational art literature by those who are airpower or maritime power advocates is the overwhelmingly landpower orientation of operational art. Such a focus stems from how a combatant seeks to achieve its termination criteria in a war. In the conduct of a general war, the national survival of a state depends on its continued sovereignty and its ability to continue to enforce its own sovereignty. Compelling an adversary state in a general war, particularly a totalitarian state not beholden to popular support,

⁵¹ Kelly and Brennan, *Alien: How Operational Art Devoured Strategy*, 97.

may require genocidal extermination of an adversary state and its population if physical occupation of the adversary's state is not possible. In a limited war, the coercion or compelling of an adversary may be possible without resort to physical occupation. However, at the operational level, the absence of a ground component eliminates its potential as a deterrent in a limited war. Harry G. Summers's treatment of strategic failure in the Vietnam War in *On Strategy* points to this failure to address decisively the North Vietnamese adversary at its root, rather than merely its efforts in South Vietnam.⁵² Consequently, the composition of forces in operational art must consider the purposes for which those forces are employed. Those purposes come from strategy.

Operational art without strategy is merely tactics. Operational art, unlike tactics, must necessarily have a top-down orientation. The execution of so-called operational art without regard to the strategic objectives that frame such operational art is, in reality, merely tactics. Attempting to reverse-engineer tactical actions (from the bottom up) into an operational context may achieve strategic objectives, but only accidentally in the absence of strategic direction. However, the execution of operational art does not necessarily require rigid directive control of tactical actions. An operational commander should provide a usable framework for his tactical-level subordinates without dictating the procedures by which those tactical commanders should execute their missions. By doing so, he enables those tactical commanders to execute missions in a decentralized manner without the direct supervision of the operational commander. Without that operational framework, it is unlikely that those tactical actions will achieve desired strategic outcomes—indeed, one of the greatest challenges for an operational commander is not to let

⁵² Harry G. Summers Jr., *On Strategy: A Critical Analysis of the Vietnam War* (Novato, Calif.: Presidio Press, 1982), 24–31.

tactical successes undermine achievement of the strategic goals that must necessarily drive use of any instrument of national power, whether military or otherwise.

Epstein's Napoleonic War and Schneider's American Civil War case studies highlight the importance of the political aim in shaping military operations. They also illustrate the circumstances that drove the practice of operational art in the first place. In particular, the character of warfare had changed in the 19th century as previous conflicts attempted to attain political goals through a single decisive battle, after which the victors could compel or coerce an adversary to submit to their will. Nonetheless, the ends that military action had to achieve were inherently political in nature; the conduct of military operations without a clear causal relationship to achieving strategic ends is a definite sign that such combat, regardless of its size, scope, or duration, is occurring solely at the tactical level of war and may be strategically indecisive or even counterproductive.

Tactical excellence without operational art is irrelevant. Gray, in his 2007 book *Fighting Talk*, alludes to the potential irrelevance of tactical excellence when he asserts that military excellence cannot guarantee strategic success. Gray cites the Vietnam War among his examples of this theorem; while the U.S. military was far superior to its Vietnamese adversaries at the tactical level, the aggregate strategic effect of those tactical victories was negligible by 1975 as South Vietnam fell in a comparatively short offensive.⁵³ Andrew J. Bacevich, in his monograph *The Pentomic Era*, describes a similar situation during peacetime in the decade prior to Vietnam, when the U.S. Army's inability to develop a credible operational or strategic concept led to a decade-long pursuit of tactical nuclear weapons and continental air defense, to the exclusion of much development of the rest of the force. Such technological solutions, without an

⁵³ Colin S. Gray, *Fighting Talk: forty maxims on war, peace, and strategy* (Washington, D.C.: Potomac Books, 2009), 107.

accompanying rigor in the rationale for that force structure, focused on short-term budgetary concerns, rather than a force that was actually capable of the expeditionary operations required of it during that period.⁵⁴

Operational warfare requires balanced application of both art and science. The integration of ends, ways, and means across strategy, operations, and tactics requires an operational art practitioner to appreciate all of the levels of war. Looking upward, the conduct of effective operational warfare, aside from strategic ends, also requires an appreciation of the strategic environment, to include the other instruments of national power. While an operational art practitioner may not employ all of the instruments of national power, that practitioner must be aware of the implications to and from the instruments of national power he or she does not employ. The problems facing a strategist inevitably revolve around the decision calculus of the various actors within the strategic environment, meaning that practitioners of operational art must understand how operations affects strategy. Looking down, the conduct of effective operational warfare requires an awareness of tactics, which emphasizes aspects of the science of warfare. Technology typically has much more direct relevance to tactics than it does to operational art or strategy. Even when technology becomes a significant part of strategy (as it did with nuclear deterrence during the Cold War), its effects on strategy are associated more with its effects on the decisions that strategic actors must make, rather than on the employment of those technologies. However, at the operational level of war, the science of war still matters, especially when considering deployment and logistics. The art becomes a consideration for the way in which a strategy is translated into tactical direction. An operational art practitioner neglects either at his or her peril.

⁵⁴ LTC Andrew J. Bacevich, *The Pentomic Era: The U.S. Army Between Korea and Vietnam* (Washington, D.C.: National Defense University Press, 1986), 143–153.

Operational warfare is inherently joint. Napoleon's *levée en masse* marked a tremendous expansion of the size of military forces beyond the ability of a tactical commander to control, requiring the creation of the corps system to ease the burden on his tactical commanders. That expansion, combined with the increased lethality of weaponry and the advent of command and control structures that enabled directive control of military forces beyond the line of sight, enabled a commander to deploy forces over multiple lines of operation.⁵⁵ This expansion of forces led to the requirement for what Schneider called "operationally durable" forces. These forces possessed the combat power, logistics, and command and control attributes to enable the prosecution of successive operations by geographically distributed forces (generally beyond the line of sight) over the duration of an entire campaign.⁵⁶

The existence of those operationally durable forces made it impossible to achieve strategic ends solely through the employment of tactics in a single decisive battle of annihilation. Consequently, the defeat of an operationally durable force required a way to coordinate that destruction over time and space. As Schneider notes, establishing such a force required a level of national mobilization (even during peacetime) that would enable their creation.⁵⁷ Projecting that force over operational or strategic distances and accepting decisive engagement further required the provision of logistics at distances far from the home country. This dynamic is the essence of operational reach, and it cannot be achieved through solely tactical means. Once fielded military forces became too durable to destroy in a single battle of annihilation (as was the case during the American Civil War, if Gettysburg, Vicksburg, and the siege of Petersburg were any indicator), culmination in operational warfare typically occurred from failures of logistics or

⁵⁵ Martin van Creveld, "Napoleon and the Dawn of Operational Warfare," in Olsen and van Creveld, *The Evolution of Operational Art: From Napoleon to the Present*, 18–19.

⁵⁶ James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, Calif.: Presidio, 1994), 52.

⁵⁷ *Ibid.*, 59–76.

force generation, not direct combat. Such a relationship inherently spans the military, diplomatic, and economic instruments of national power, which has clear implications to strategic art.

The forces employed in the conduct of operational art do not necessarily have to be of a given size; it was for that reason that the U.S. Marine Corps' manual on operational art is called *Campaigning* rather than *Operational Art*.⁵⁸ While Harrison saw operational art as the role of Soviet fronts (equivalent to army groups in echelon), Canadian and Australian works on operational art focus on the relative capabilities of the forces conducting operational art. Nonetheless, the demands of deploying and sustaining forces over strategic and operational distances generally reach beyond the abilities of a single tactical commander to control. Such an observation is particularly true of expeditionary powers such as the United States or Great Britain, which had to project land combat power over sea and/or air lines of communication, then employ those land forces far from their home locations, often for protracted periods. The British did so to garrison forces in support of their imperial possessions. The United States has done so since 1991, with the commitment of forward-deployed land and air forces to Southwest Asia since the end of Operation DESERT STORM.⁵⁹ Land power cannot act in such an expeditionary manner without the capabilities brought by maritime or air power.

Conclusion

This normative model of operational art provides a framework with which to examine the explorations of operational art that the U.S. military took in the wake of the Vietnam War. While the original development of operational art started in the U.S. Army, other schools of

⁵⁸ John F. Schmitt, interview by author, April 26, 2011, notes in author's possession.

⁵⁹ COL David A. Dawson, "The Evolution of U.S. Central Command from Operational to Strategic Headquarters" (unpublished paper, Carlisle Barracks, Pa.: U.S. Army War College, 2010), 6, 10–12.

thought that originated within the U.S. Marine Corps and U.S. Air Force had emerged by the late 1980s. Those developments saw employment during Operations DESERT SHIELD and DESERT STORM in 1990-1991. In the wake of the Persian Gulf War, the various elements of joint operational art had contributed to a joint force perspective on operational art by the late 1990s, manifest through joint doctrine. However, the retrenchment after the end of the Cold War led to a new era of service parochialism, and some of the essential qualities of the revival of operational art in the 1980s were lost after DESERT STORM.

The origins of contemporary American operational art as it transpired in the 1970s were a direct reaction to an adversary, for which the term “operational art” had existed since the 1920s. Long before the West formally acknowledged operational art as a level between strategy and tactics, the Soviet Union went through several evolutions of the discipline of operational art and campaigning when it became apparent that previous approaches to strategy and tactics were missing an intermediate level that was required to bridge the two. The Soviets developed an intellectually rigorous body of literature through their exploration of operational art, but it was subject to a number of fatal flaws that kept it from ever realizing its full potential.

Chapter 2

Soviet Operational Art: A Revolution Unfinished

The development of operational art in the Union of Soviet Socialist Republics (USSR) represented a revolutionary innovation in military thought. Soviet theorists, writing primarily in the 1920s and 1930s, created an intellectual discipline that provided insights to understanding military problems that neither strategy nor tactics could properly resolve. However, operational art, expressed as deep operations theory, remained an unrealized ambition in Soviet military thought. The circumstances that led to the creation of Soviet operational art also prevented that discipline from realizing its full potential. The discontinuities between the political and military-technical parts of the Soviet military art and science ensured that Soviet operational art, with two exceptions, never fully bridged the strategy and tactics it was to unify.

The Imperial Origins of Soviet Operational Art

The intellectual origins of Soviet operational art rest in the Russian Imperial Army, which provided several concepts that proved to be key foundations for future development. Of the theorists who contributed to this body of knowledge, G. A. Leer, I. S. Bloch, and A. A. Neznamov were the most influential. Other thinkers during the pre-Soviet period also included M. I. Dragomirov and N. P. Mikhnevich.

Unfortunately, most of this body of knowledge has not been translated into English. The majority of the English language literature on the period before the Soviet Union owes to the efforts of Jacob A. Kipp, whose prolific scholarship on Russian and Soviet military theory and doctrine includes several chapter-length monographs, and Bruce W. Menning, whose 1993 book, *Bayonets Before Bullets: The Imperial Russian Army, 1861-1914*, remains the dominant

narrative of the period. James J. Schneider briefly discusses the period as a precursor to the Soviet development of operational art in *Mars Ascending: Total War and the Rise of the Soviet Warfare State, 1864-1929*, his 1992 dissertation at the University of Kansas under the direction of Norman Saul and Jacob Kipp. The dissertation appeared in slightly modified form in 1994 as *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State*, of which the first chapter, “Vulcan’s Anvil,” was for many years a text at the U.S. Army School of Advanced Military Studies, where Schneider was a professor of military theory. A more recent treatment appears in the first chapter of Richard Harrison’s 2001 book *The Russian Way of War: Operational Art, 1904-1940*, but this work merely offers a synthesis of earlier scholarship with respect to the Russian Imperial Army.

General Genrikh A. Leer, unquestionably the most influential Russian military intellectual of the 19th century, was the first of the imperial-era theorists to exercise influence on Soviet operational thought. The primary instrument of that influence was his text *Strategy*, which saw six revisions, while Leer progressed from a chair of tactics in 1855, then chair of strategy in 1865, to command of the Nikolaevsk Academy of the General Staff in the Imperial Russian Army from 1889 to 1898. Leer drew significant influence from the Napoleonic Wars, and in turn, the writing of Antoine-Henri Jomini, specifically through the concepts of objective (*tseľ*) and direction (*napravlenie*). Leer’s treatise on strategy complemented Mikhail I. Dragomirov’s work on tactics, which according to Menning, emphasized “the primacy of will and élan over weapon and enemy.”¹

¹ Michael I. Handel, *Masters of War: Classical Strategic Thought*, 3rd ed. (London; Portland, Ore.: Frank Cass, 2001), 54. Bruce W. Menning, “The Imperial Russian Legacy of Operational Art, 1878-1914,” in *Historical Perspectives of the Operational Art*, ed. Michael D. Krause and R. Cody Phillips (Washington, D.C.: G.P.O., 2005), 191–193.

Jomini's influence on Leer's work manifested itself as a positivist view of warfare that sought to reduce warfare to eleven so-called key principles, all grounded in Napoleonic military thought. These principles emphasized the mechanics of the employment of military forces, with the ultimate focus being destruction of an adversary's military capabilities. Leer viewed such military action discretely from any other instruments of national power.² Leer's development of a peculiarly Russian notion of military science, defined as "a systematic code of laws forming the basis of the art of conduct of war and the art of conduct of battle," also reflected this belief in rational positivism.³

Leer's most direct contribution to Soviet military thought was his notion of the theater of military operations (*teatr voennykh deistvii*, or TVD), which was the domain of a theater commander to accomplish strategic objectives. However, Leer's concept of military actions to achieve strategic objectives centered on a decisive battle, typically through envelopment and destruction of an adversary force, reflecting a Napoleonic bias towards tactical action.⁴ Nonetheless, Leer saw actions within the TVD within a framework of primary (contributing to main battle), preparatory (deployment, basing, and engineer preparation of the TVD), and supplementary (supplies, LOCs, and security operations). In that sense, Leer's notion of tactics represented an attempt to translate strategic ends into tactical actions, which Leer called the

² Bruce W. Menning, *Bayonets Before Bullets: the Imperial Russian Army, 1861-1914* (Bloomington: Indiana University Press, 1992), 126. James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, Calif.: Presidio, 1994), 133–134. Schneider cites these key principles as "first, the dominance of superior force and numbers; second, the integrated movement of large detachments of troops, notably corps formations; third, the concentric maneuver of corps to battle at the decisive point in a theater of operations; fourth, recognition of the opposing army as the center of gravity of the enemy's strength; fifth, orientation upon the enemy's territory as the ultimate goal of the campaign; sixth, the importance of surprise; seventh, integration of the separate engagements to the purpose of the war; eighth, that every campaign has a base of operations, a main goal, along which the center of gravity of the forces is directed; ninth, the importance of seizing and retaining the initiative; tenth, following the main battle, pursuit of the defeated enemy to complete its destruction and occupy its territory; and, finally, the careful consideration of context and circumstances."

³ Peter Von Wahlde, "A Pioneer of Russian Strategic Thought: G. A. Leer, 1829-1904," *Military Affairs: The Journal of Military History, Including Theory and Technology* 35, no. 4 (1971): 150.

⁴ Menning, "The Imperial Russian Legacy of Operational Art, 1878-1914," 194. Menning, *Bayonets Before Bullets*, 127.

“tactics of the theater of military actions.”⁵ While Leer was ostensibly writing about strategy, his focus on military actions within the TVD, rather than the actions taken by policymakers to achieve victory in a war, place his theoretical work squarely in the category of operational art.⁶

Another significant influence in the 19th century was that of Ivan S. Bloch, a Polish Jewish banker and railroad financier who published in the West as Jean de Bloch. The depiction Bloch makes of the character of warfare at the turn of the century is bleak, emphasizing the widespread destruction that would ensue in a general war between continental European combatants. What made Bloch’s writings, especially his 1898 book *The Future of War*, so groundbreaking was his specific consideration of economic instruments of national power into discussions of warfare. Bloch’s background as a banker and railroad financier undoubtedly shaped his perspective on armed conflict at the turn of the century. As a financier, Bloch sought to protect capital investments in industrial and transportation infrastructure, rather than Leer’s focus on decisive battle and the maneuver of forces in combat. For example, railroads were largely unusable for tactical maneuver, but were vital to the operational and strategic deployment and sustainment of forces in combat.⁷ Without that operational deployment and logistics, operational art could not occur.

Rather than subscribing to a single decisive battle, Bloch recognized a connection between the military, diplomatic, and economic instruments of national power, and in particular, examined their nexus not only at the strategic level, but also in the conduct of force flow and strategic logistics, a topic with which Bloch was familiar due to his railroad background.⁸

⁵ Schneider, *The Structure of Strategic Revolution*, 134.

⁶ Von Wahlde, “A Pioneer of Russian Strategic Thought: G. A. Leer, 1829-1904,” 150.

⁷ Jan S. Bloch, *The Future of War, in its technical, economic, and political relations*, trans. R. C. Long (1899, repr: Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1989), 115, 141.

⁸ Schneider, *The Structure of Strategic Revolution*, 87–90; Menning, “The Imperial Russian Legacy of Operational Art, 1878-1914,” 193–195.

Furthermore, Bloch's observations on the improvements of small arms and direct fire artillery pieces led him to predict an increase in battlefield lethality to a point where combatants would seek to fight only from fortified positions.⁹ The end result was that any war would be one of exhaustion as an attacker spent his forces in suicidal attacks on an entrenched defender, leaving the victor as the side that either had the most forces left, or achieved military victory before economic exhaustion occurred.¹⁰

The practitioners of Leer's theories on strategy and Dragomirov's works on tactics met with ruinous failure during the Russo-Japanese War in 1904-1905. While individuals such as N. P. Mikhnevich, who commanded the Nikolaev General Staff Academy from 1904-1906, sought to bridge the gap between theory and practice in the Imperial Army, failure at the strategic and tactical levels sparked an honest assessment of the state of Russian military thought. General Alexei N. Kuropatkin, the senior Russian field commander, as well as most of his staff and subordinate commanders, were true to their upbringing in Leer and Dragomirov, seeking a set-piece battle and a single decisive battle in an attempt to achieve the strategic ends necessary to terminate the war on Russian terms. Kuropatkin's attempts to lead from the front, compounded by his indecision, weak commanders, and deficient staff officers and procedures, led to decisive tactical defeat at Mukden. Only the strategic culmination of the Japanese prevented a more strategically decisive defeat for the Russians.¹¹ The Russo-Japanese War became the empirical basis for the remainder of Russian imperial thought.

One of the influential thinkers in the wake of the Russo-Japanese War, and later on Soviet military thought, was Aleksandr A. Neznamov. Unfortunately, no English language

⁹ Bloch, *The Future of War, in its technical, economic, and political relations*, 3–11.

¹⁰ Jan S. Bloch, *Jean de Bloch: selected articles* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1993), 21–23.

¹¹ Menning, *Bayonets Before Bullets*, 197–199.

translations exist of Neznamov's work. Kipp's chapter in Willard C. Frank and Philip S. Gillette's *Soviet Military Doctrine from Lenin to Gorbachev, 1915-1991*, frames Neznamov's theoretical work in the aftermath of the Russo-Japanese War. As a veteran of that conflict, Neznamov observed an intermediate level between strategy and tactics, introducing the notion of an engagement (*strazhenie*), referring to combat actions above the tactical level, and an operation (*operatsiia*) to integrate both the maneuver required to get a force to a battle and the combat actions required to prevail once there.¹² Neznamov conceptualized a sequence of operations towards a single objective, a significant refinement on Leer's original foundations.¹³

Neznamov asserted the primacy of technical and economic factors over purely military factors, an important foundation for an examination of strategic art.¹⁴ In examining the character of large unit operations, Neznamov advocated the need for army groups to coordinate the employment of multiple armies towards a single objective, albeit under the control of a very weak group commander as to enable the conduct of a single decisive battle at the direction of the commander-in-chief. The mechanism of the decisive battle occurred through the penetration, deep envelopment, and subsequent destruction of an enemy force all by the group, which eventually became known as the *front*.¹⁵

¹² Jacob W. Kipp, "Soviet Military Doctrine and the Origins of Operational Art, 1917-1936," in *Soviet Military Doctrine from Lenin to Gorbachev, 1915-1991*, ed. Willard C. Frank and Philip S. Gillette (Westport, Conn.: Greenwood Press, 1992), 93.

¹³ Richard W. Harrison, *The Russian Way of War: Operational Art, 1904-1940* (Lawrence: University Press of Kansas, 2001), 29.

¹⁴ The term "strategic art" originates from the U.S. Army War College, whose charter specifically includes the instruction of strategy for senior leaders. Richard A. Chilcoat was its commandant when he defined it as "the skillful formulation, coordination, and application of ends (objectives), ways (courses of action), and means (supporting resources) to promote and defend the national interests." MG Richard A. Chilcoat, *Strategic Art: The New Discipline for 21st Century Leaders* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 1995). See Chapter 1 for a discussion of strategic art.

¹⁵ *Front* is a false cognate into English. In Russian usage, *front* does not refer to a geographical region, but rather to an echelon of military unit above the army level, in essence a term of Neznamov's army groups (the term used primarily in Western military usage, owing to the German influence). The closest analog to a front today is an army group.

In spite of these paradoxes, Neznamov offered a concept for the operational maneuver of the large forces that were a consequence of 19th century Industrial Age warfare. Most importantly, Neznamov's clear thought on the practice of strategy and operations marked a rare exception to the sort of theoretical abstractions that characterized the Nikolayev General Staff Academy – something of which future Red Army generals B. M. Shaposhnikov and I. I. Vatsetis both complained.¹⁶ Neznamov's writings marked the first true explorations of operational art in Russian military literature.

Neznamov drew from a notably unusual source; he borrowed heavily from Sigismund von Schlichting, a German theorist who pioneered two groundbreaking concepts in military theory. Schlichting attempted to reconcile the effects that technology had wrought on the conduct of warfare in the late 19th century. Rather than embracing a scientifically positivist view of warfare as his contemporary Count Alfred von Schlieffen had done, Schlichting accepted a far more chaotic view of warfare, one in which commanders could not control all of the circumstances that influenced a battle.¹⁷ Such a view became manifest in Schlichting's concept of *operativ*, which literally translates as “operational.” Rather than just a discrete level of war between strategy and tactics, Schlichting saw *operativ* as a descriptor of a seamless bridge that spanned both *operationen* (operations) and tactics.¹⁸

The other manifestation of Schlichting's view of warfare was the first instance of what the Germans called *auftragstaktik*, roughly translated as “mission-oriented tactics.” Schlichting argued for a model of command and control that required commanders to visualize and clearly communicate what they wanted to accomplish, through the initiative of junior commanders who

¹⁶ Harrison, *The Russian Way of War*, 28–30.

¹⁷ MAJ Donald Cranz, “Understanding Change: Sigismund von Schlichting and the Operational Level of War” (Monograph, Fort Leavenworth, Kan.: School of Advanced Military Studies, U.S. Army Command and General Staff College, 1989), 8–10.

¹⁸ *Ibid.*, 17–18.

were largely free to execute within the confines of the higher commander's intent. Another critical enabler for *auftragstaktik* was a degree of mutual trust between senior leaders and their subordinates. Such trust came from training subordinates to a level that gave the commander an assurance that his subordinates could execute their instructions within the stated intent, while the subordinates felt free to engage the commander if the latter's intent did not enable the exercise of subordinate initiative.

Neznamov translated much of Schlichting's thought into a Russian context, introducing the concepts of control (*upravlenie*) and initiative (*pochin*) as a way to translate Schlichting's concepts to a Russian audience. When a Russian language translation of Schlichting's work became available, the extent of Neznamov's influence from Schlichting's writings became apparent, which led to a backlash within the ranks of the Imperial Russian Army. Based on the observations of A. A. Svechin, another Imperial Russian General Staff officer (*genshtabist*), Mikhnevich, who succeeded Leer as Chair of Strategy at the Nikolayev Academy, also drew influence from Schlichting.¹⁹

Mikhnevich and others also recognized the existence of an intermediate level between strategy and tactics. Such an assertion came not only from Mikhnevich's observations during the war, but also other theorists such as Bloch. Mikhnevich's treatise *Strategy* became the Russian Imperial Army's textbook on strategy, and was so well-regarded that it was the Red Army's strategy text for almost a decade as well.²⁰

Divisions within the Ranks

¹⁹ Jacob W. Kipp, "The Origins of Soviet Operational Art, 1917-1936," in *Historical Perspectives of the Operational Art*, ed. Michael D. Krause and R. Cody Phillips (Washington, D.C.: G.P.O., 2005), 93.

²⁰ Menning, *Bayonets Before Bullets*, 208–210.

The various groups that held sway within the Red Army of Workers and Peasants (*Raboche-Krest'yanskaya Krasnaya Armiya* [RKKKA]) came from a variety of groups that vied for influence for the decade following the Revolution. These groups included remnants of the former Russian Imperial Army, as well as newcomers to the Soviet military who had joined during the Russian Civil War. The differences in agendas among the groups led to a bitter debate over the strategy that would govern the USSR and the use of its military instrument of national power. The result of that debate led to a bifurcation between the very senior leadership of the RKKKA who exercised strategic direction for the Soviet military and those who provided the intellectual underpinnings for the future force – to include many of those who studied the theory and practice of campaigning, force flow, and logistics.

The first of the Soviet military theorists were former General Staff officers. These officers served with the newly established RKKKA under the title of military specialists (*voenspetsy*), since Bolshevik convention immediately after the Revolution eschewed the notion of rank in a worker's and peasants' army. The inclusion of the military specialists into the RKKKA's structure was at the directive of Lev (Leon) D. Trotsky, who saw a need to put officers capable of commanding and controlling forces of the size and scope seen during the Russian Civil War.²¹

However, there existed some tension between the military specialists, who came from the ranks of former General Staff officers and other Imperial officers, and the so-called Red Commanders (*krasny komandiry*), an outgrowth of the Bolsheviks' attempt to develop their own generation of military leadership internal to their own political circles. By the end of the Russian Civil War, the military specialists, who included former noncommissioned officers and technical

²¹ John Erickson, *The Soviet High Command: A Military-Political History, 1918-1941*, 3rd ed. (Portland, Ore.: Frank Cass, 2001), 30–32. The initial plan for the expansion of the RKKKA envisioned 88 divisions, encompassing an aggregate need of over 55,000 officers for the fledgling force.

specialists such as doctors and administrative staff, numbered some 273,465. In comparison, the number of Red Commanders numbered a mere 39,914. In short, the RKKA's officer corps was composed overwhelmingly of former Imperial Russian Army officers.²² The Bolsheviks, in turn, were not averse to blackmail and other coercive measures to ensure loyalty in the ranks.²³

Compounding this tension between the military specialists and Red Commanders was the largely wholesale transference of the imperial curricula on "Higher Studies on War" from the Nikolayev General Staff Academy to the newly-renamed General Staff Academy. Although the retention of Mikhnevich's strategy text after the Revolution may have been a factor, other factors included Neznamov's influence and its inculcation into the military specialists who fought with the Bolsheviks during the Russian Civil War. At the same time, the empirical basis for how members of the RKKA approached warfare also differed. While the military specialists had learned from the lessons of the Russo-Japanese War and World War I, the Red Commanders only had the Russian Civil War as their combat experience, without much academic knowledge.²⁴ Imperial Russian military thought formed the initial theoretical basis for the RKKA, even for the Red Commanders.

The debate over military thought that ensued in the wake of the Russian Civil War was fundamentally a discussion of strategy. The Russian Civil War was a war of national survival for the Bolsheviks, and the adaptation of Marxist-Leninist political thought into their military strategy meant total national mobilization pursuant to "War Communism," under the central direction of Lenin, through the Political Administration of the Revolution Military Council

²² Ibid., 33.

²³ Condoleezza Rice, "The Making of Soviet Strategy," in *Makers of Modern Strategy: from Machiavelli to the nuclear age*, ed. Peter Paret, Gordon Alexander Craig, and Felix Gilbert (Princeton, N.J.: Princeton University Press, 1986), 651.

²⁴ Jacob W. Kipp, "The Origins of Soviet Operational Art, 1917-1936," in Michael D. Krause and R. Cody Phillips, eds., *Historical Perspectives of the Operational Art* (Washington, D.C.: G.P.O., 2005), 222.

(PUR) to political commissars (*zampolit*). While the RKKA's military command structure answered to the Military Committee (*revvoensoviet respubliki* [RVSR]), the PUR and its commissars were a control mechanism at all levels to ensure the continued orthodoxy of the military leadership. Lenin's conduct of the Civil War, informed by both the USSR's economic weakness and the tremendous physical scope of the conflict, precluded the pursuit of any single decisive engagements. Furthermore, the forces (both for and against the Soviet forces) involved in the conflict possessed insufficient combat power, communications, and logistics for any such engagement. Instead, Lenin had to husband resources for successive offensive operations specifically intended to achieve political goals.²⁵

The basis of the debates on strategy stemmed from the ongoing debate about what grand strategy the USSR should adopt. The catalyst was the 10th Party Congress, which convened in early 1921. The 10th Party Congress marked the installation of many sympathizers of Josef S. Stalin into the Central Committee of the Communist Party. In the near term, the 10th Party Congress retained the regular forces of the RKKA, rather than demobilizing those forces and establishing the militias that the Red Commanders favored.

The debate that followed had two champions. The first was Mikhail V. Frunze, a Red Commander who argued for a so-called "unified military doctrine" (*yedinaia voennaia doktrina*), drawn primarily from the basis of Russian Civil War experience in large unit operations. Frunze argued not only for a prominent role for the 1st Cavalry Army (of which Stalin, Kliment M. Voroshilov, and Semyon M. Budenny were Russian Civil War veterans), but also a fully professionalized regular RKKA force organized to operationalize a grand strategy of offensive revolutionary warfare against the West. Frunze visualized such a unified military doctrine as a

²⁵David M. Glantz, *Soviet Military Operational Art: In Pursuit of Deep Battle* (London; Portland, Ore.: Frank Cass, 1991), 55–56.

way to tie military actions to the Communist Party's goals—in essence, an expression of strategic art.²⁶

The second was Trotsky, who was critical of both the military specialists for their addiction to abstractions and the Red Commanders, who insisted upon the centrality of their Russian Civil War experience but still favored retaining the military specialists as the core of the RKKA's command and staff. Rather than a professional force, Trotsky argued for a “proletarian military doctrine,” arguing for a defensive grand strategy, without resort to Frunze's unified military doctrine and its emphasis on a war of revolutionary conquest. Trotsky saw a single doctrine as too restrictive in intellectual scope, especially given the limited evidentiary basis from the Russian Civil War. He also saw it as economically infeasible due to the USSR's weak economy in the 1920s.²⁷

Frunze emerged victorious in the debates over Trotsky, although his conceptual victory did not mean orthodoxy in the ranks.²⁸ Indeed, Neznamov, Svechin, and other military specialists may very well have argued in favor of Trotsky's position. Those theorists, however, ended up working within the context of Frunze's reformed RKKA, which Frunze and others in 1923-1924 had assessed as woefully unprepared for any sort of major war, if the planning and potential execution of mobilization, logistics, and deployment were any indicator.²⁹ Trotsky had gained sufficient support from the political commissars within the ranks that he posed a threat to the Central Committee, and while he may not have had designs on control of the Central

²⁶ Yitzhak Klein, “The Sources of Soviet Strategic Culture,” *The Journal of Slavic Military Studies* 2, no. 4 (1989): 462–465.

²⁷ Erickson, *The Soviet High Command*, 125–131. MAJ Thomas M. Lafleur, “Mikhail Frunze and the Unified Military Doctrine” (Master's thesis, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 2004), 45–46. Klein, “The Sources of Soviet Strategic Culture,” 466–467.

²⁸ Two papers provide a more detailed narrative of the debates and their outcomes. The first is Thomas M. Lafleur, “Mikhail Frunze and the Unified Military Doctrine,” a master's thesis at the U.S. Army Command and General Staff College. The second is Matthew M. Hurley, “A Workers' Way of War: The Red Army's Doctrinal Debate, 1918-1924” (Master's thesis, Seattle: University of Washington, 1991).

²⁹ Lafleur, “Mikhail Frunze and the Unified Military Doctrine,” 62.

Committee, the Red Commanders saw an opportunity to consolidate control of the Soviet military and enact some much-needed reforms. The leadership of the RKKA fell to Frunze, who was appointed deputy war commissar on March 11, 1924. Other senior leaders appointed to the RVSR at the same time included many veterans of the 1st Cavalry Army, including Budenny, S. S. Kamenev, Voroshilov, and several others.³⁰

By July 1924, the RVSR officially eliminated the distinction between the military specialists and Red Commanders, terming all leaders as “Commanders of the RKKA,” or Red Army Commanders. While the senior leaders of the RKKA were mostly Stalin’s confidants, the intellectual development of the RKKA fell to a different group of individuals, which included both former military specialists as well as Red Commanders.³¹ This group of military intellectuals laid the groundwork for the universal military doctrine that Frunze championed.

In Pursuit of a Unified Military Doctrine and Science: Soviet Theorists before the Great Patriotic War

The formal development of operational art began during the first two decades of the RKKA. The first theorists, such as N. Ye. Varfolomeev, A. A. Svechin, M. N. Tukhachevsky, and V. K. Triandafillov, pioneered the development of what became operational art. They represented a new group of Soviet theorists and the creators of a uniquely Soviet school of warfare. The Soviet schools of operational art were the result of an intensive period of theory development and experimentation resulting from an expectation of a war of ideological survival against the West. As many of the theorists fell victim to the purges of the RKKA starting in 1937, a few survivors, among them G. S. Isserson, continued the development of operational art theory, in some cases at great personal risk. The result was a rich body of military literature that

³⁰ Erickson, *The Soviet High Command*, 166–171.

³¹ *Ibid.*, 177–179, 192.

had lasting influence not only on Soviet military theory and practice, but also on the structure of the Soviet armed forces themselves, through what became known as deep operations theory.

Most of the accounts of Soviet military thought cite several common milestones as the RKKA developed deep operations theory, not all of which were necessarily theoretical in nature. The first step itself was Frunze's herculean reorganization of the RKKA from 1924 to 1926, which was the beginning of the formal professionalization of the RKKA that he advocated. In 1925, the Central Committee appointed Frunze to replace Trotsky as war commissar and first chairman of the newly-renamed Military Committee of the USSR [RVS SSSR]. Frunze presided over the establishment of the RKKA General Staff, established the Red Air Force and Navy separate from the RKKA underneath the defense commissariat, and completely overhauled not only the structure of the RKKA, but also its senior organizational structure and its professional military education system.³² In spite of Frunze's untimely demise in 1926, the professionalization of the RKKA from its Russian Civil War origins to the modern force that emerged just a decade later was the first of Frunze's legacies to the Soviet military.³³

The other legacy that emerged from Frunze's work was the basis for what became military doctrine (*voennaia doktrina*), a false cognate in its English translation. The U.S. Department of Defense defines doctrine as the "fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application." Such a definition refers primarily to the actual body of military literature that governs military actions. While doctrine in its American context is authoritative, it is not prescriptive. Thus, commanders and their subordinates can deviate from

³² Lafleur, "Mikhail Frunze and the Unified Military Doctrine," 85–97. See also Erickson, *The Soviet High Command*, 172–206 passim.

³³ The Soviet intermediate-level staff college was named for Frunze after his death.

doctrine (in its American sense) if their best military judgment leads them to a dissenting decision.³⁴

Frunze's notion of a unified military doctrine was far more expansive than its American interpretation. He developed and promulgated a completely new military science in pursuit of a class war envisaged in Marxist-Leninist ideology, involving not only the military, but also the whole of a mobilized society, including the national economy. Frunze's definition, promulgated in 1924, remained unchanged in Soviet military literature until 1987:

a set of views, accepted in a country at a given time, which covers the aims and character of possible war, the preparation of the country and its armed forces for such war, and the methods of waging it."³⁵

The implication of such a military doctrine went far beyond military literature; Frunze's military doctrine required a massive overhaul of Soviet military and civil education to prepare the country for the revolutionary class war he expected to prosecute.³⁶ Most significantly, Frunze's unified military doctrine also provided a single framework for all other Soviet military thought, enabling the development of an intellectually consistent body of military literature.

Concurrent with Frunze's work, Nikolai Ye. Varfolomeev was a member of the last wartime graduating class of the Nikolayev General Staff Academy, and served as the academy's first deputy chief of staff immediately after the Revolution and the creation of the RKKA. As the General Staff Academy deputy chief of staff, Varfolomeev focused on the "conduct of the operation," implemented through consecutive tactical actions. Varfolomeev, as had Neznamov previously, examined the simultaneous conduct of a penetration and pursuit, whereby the Soviet force would break through an adversary unit and then run down the survivors to annihilate that

³⁴ Joint Chiefs of Staff, *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms (revised as of 11 May 2011)* (Washington, D.C.: G.P.O., 2010), 114.

³⁵ Mary Glantz, "The Origins and Development of Soviet and Russian Military Doctrine," *The Journal of Slavic Military Studies* 7, no. 3 (1994): 447.

³⁶ Schneider, *The Structure of Strategic Revolution*, 111–116, 127–128.

adversary *in toto*. He also examined the logistical requirements necessary to sustain such a penetration and pursuit. One of Varfolomeev's influences was his service with the Western *Front* and its advance towards Warsaw during the Russian Civil War. The Western *Front* was unable to turn an operation into a decisive victory during that conflict in no small part because of the disunity of effort between forward commanders and the theater rear, resulting in culmination of the force prior to achieving destruction of its Polish adversaries.³⁷ Like many other military specialists, Varfolomeev perished in the Purges of the late 1930s.³⁸

The second milestone of Soviet military thought was the theoretical work of Aleksandr A. Svechin, who was the first Soviet-era theorist to give a comprehensive treatment of what could be termed as strategic art. Svechin, a former Imperial General Staff officer turned military specialist, was a military historian of considerable repute and used military history as an empirical basis for the conduct of strategic art. Svechin advocated a protracted war of attrition (*izmor*) much in the same context as Hans Delbrück's use of the term. The conduct of such a war required a coordinated series of operations, conducted for limited aims, and subordinate to strategic direction. According to Varfolomeev, Svechin formally introduced the term "operational art" (*operativnoe iskusstvo*) as a bridge between strategy and tactics in 1923-1924 whilst a professor at the RKKA Military Academy.³⁹ Svechin's view of strategy tied the military closely to politics and economics in a unified view of the relationship of front to rear in war and peace. He also articulated the resources and type of national mobilization necessary to fight a war of that duration.⁴⁰

³⁷ Kipp, "The Origins of Operational Art," 111-112.

³⁸ Richard W Harrison, *Architect of Soviet Victory in World War II: The Life and Theories of G.S. Isserson* (Jefferson, N.C.: McFarland & Co., 2010), 193.

³⁹ Kipp, "The Origins of Soviet Operational Art, 1917-1936," 214.

⁴⁰ A. A. Kokoshin and V. V. Larionov, "Origins of the Intellectual Rehabilitation of A.A. Svechin," in *Strategy*, ed. Kent D. Lee, by A. A. Svechin (Minneapolis, Minn.: East View Publications, 1992), 84.

Svechin developed an approach to achieving military strategic objectives that did not solely depend on the tactics that had characterized engagements and battles.⁴¹ To resource this different approach, Svechin proposed an economic general staff to direct not only the economic conduct of war, but also its prior economic preparation for war. He saw such an entity as necessary to enable the phased technical and financial preparation for the kind of war that he envisaged.⁴² While such a command economy is anathema to free-market nations, but the moribund Soviet economy of the 1920s left few other viable choices.

Informed by a realistic (at least in 1927) assessment of the ability of the USSR to implement Frunze's offensive strategy of destruction, Svechin advocated a system of "permanence of mobilization" to reduce the expense and time required to field what Schneider describes as an "operationally durable force." Such operationally durable forces must be capable of fighting and sustaining themselves over multiple operations, rather than culminating after only one operation.⁴³ This "permanence of mobilization" included discussions of economic self-sufficiency and economic warfare, as well as political propaganda in support of domestic security, and continuous development to improve the Soviet Union's strategic transportation infrastructure.⁴⁴ In doing so, Svechin echoed Carl von Clausewitz's *On War*, in particular the relationship of the population to the military and government, as well as the importance of intangibles, such as national will, in the conduct of warfare. Svechin also provided an example of what has become known in Western practice as "net assessment," or an estimate of the likely performance of a country's armed forces against a potential enemy.⁴⁵

⁴¹ Schneider, *The Structure of Strategic Revolution*, 139–144, 152–153.

⁴² Kokoshin and Larionov, "Origins of the Intellectual Rehabilitation of A.A. Svechin," 112–129 passim.

⁴³ Schneider, *The Structure of Strategic Revolution*, 52.

⁴⁴ A. A. Svechin, *Strategy* (Minneapolis, Minn.: East View Publications, 1992), 84, 104, 109, 211.

⁴⁵ Allan R. Millett and Williamson Murray, *Net Assessment in the 1930s* (Washington, D.C.: Defense Supply Service, 1990), 1, <http://handle.dtic.mil/100.2/ADA230153> (accessed September 12, 2011).

Svechin's work marked a clear distinction between strategy and operational art, when he asserted that "studying the methods of conducting an operation is a job for operational art rather than strategy."⁴⁶ Svechin examined the mechanics of an operation in detail, but he placed them specifically in the context of strategy. By doing so, he made several propositions about strategic logic that were largely absent from later scholarship, specifically in the coordination of military operations with political and economic realities, and most significantly, the "achievement of harmony" of all strategic objectives, rather than just objectives in isolation.⁴⁷

Svechin did not constrain himself solely to Soviet ideology in writing *Strategy*. His dialectical approach drew not only from Soviet thought, but also from Russians such as Neznamov, Germans like Delbrück and Schlichting, as well as some French military thought. Such a cosmopolitan approach certainly owed to his experience as a professor of strategy at the RKKA Military Academy.⁴⁸ Although Svechin's fall from favor was not immediate, his agnostic view of strategy, combined with Stalin's progressive centralization of strategic direction, ensured Svechin's demise in the Purges and subsequent status as a nonperson for almost forty years.⁴⁹

Tukhachevsky, Svechin's chief detractor, was one of the proponents of what became the theory of deep operations. The other two significant theoretical contributors to deep operations theory were Triandafillov and Isserson. Vladimir K. Triandafillov, a former Imperial Russian Army conscript, was among the first graduates of the RKKA Military Academy in 1919. Triandafillov was among the first theoreticians of the rich literature that emerged from the period between the Russian Civil War and the Great Patriotic War. During the Russian Civil War,

⁴⁶ Svechin, *Strategy*, 269.

⁴⁷ *Ibid.*, 306.

⁴⁸ *Ibid.*, 3–4.

⁴⁹ V. N. Lobov, "The Significance of Svechin's Military-Theoretical Legacy Today," in *Strategy*, ed. Lee, Kent D., by A. A. Svechin (Minneapolis, Minn.: East View Publications, 1992), 16.

when no military concept was sacred and the RKKA was trying to rebuild its ranks of military intellectuals in a war of national survival, the efficacy of military thought and effectiveness of its application held equal weight.⁵⁰

In *The Nature of the Operations of Modern Armies* (1927), Triandafillov developed a model of deep, operationally mobile forces capable of achieving strategically decisive results, and proposed the shock army (*undarnaia armiia*), a combined arms force that combined tactical lethality with operational mobility.⁵¹ *The Nature of the Operations of Modern Armies* also marked the introduction of successive operations into Soviet military thought and was the first significant study of the logistics and mechanics of the forces necessary to conduct such operations. Triandafillov's theory, explicitly developed for the possibility of a land war between Poland and the USSR, built on Neznamov's and Varfolomeev's previous theoretical work on envelopment and destruction of an enemy force. Triandafillov's shock army concept, which Varfolomeev later refined, first took root in official Soviet military literature in the 1929 Field Regulations of the RKKA (*polevoi ustav*, abbreviated PU-29).

Triandafillov envisaged the shock army as a mechanized combined arms force capable of independent action in support of a Soviet *front*. Triandafillov further proposed that "an army intended for action in the sectors of the main blow, must be organized so that *it will be capable with its own forces of conducting a series of successive operations from start to finish. It must have the resources that will allow it to surmount any enemy resistance, both at the outset and during operations*" (italics from original).⁵² Such an organization incorporated not only infantry

⁵⁰ Jacob W. Kipp, "Foreword," in *The Nature of the Operations of Modern Armies*, by V. K. Triandafillov (Ilford, Essex, England; Portland, Ore.: Frank Cass, 1994), ix–xi.

⁵¹ V. K. Triandafillov, *The Nature of the Operations of Modern Armies*, trans. William A. Burhans (Ilford, Essex, England; Portland, Ore.: Frank Cass, 1994), 90–92.

⁵² *Ibid.*, 90.

and artillery, but also aviation and auxiliary troops to enable it to operate independently from the *front* main body.⁵³

Triandafillov's proposed shock army was prodigious. He argued for an infantry strength of several rifle corps, comprised of 12-18 rifle divisions. Supporting that infantry was four or five artillery divisions, comprised of 16-20 artillery regiments, some eight to twelve tank battalions, at least two cavalry divisions, and some frontal aviation, including two reconnaissance squadrons and some four to five fighter squadrons. The shock army had to be operationally durable sufficient to enable a depth of movement of from 50-100 kilometers on a frontage of 60-80 kilometers, even under the decisive engagement that the shock army was intended to accept.⁵⁴ The discussion of artillery in PU-29 reflects this concentration of artillery to maneuver forces; not only did the manual describe artillery as a method of destruction (rather than just suppression) of enemy forces, but it also envisioned centralized control over of artillery at multiple levels to enable the "assault group in an offensive battle."⁵⁵

Another hallmark of *The Nature of the Operations of Modern Armies* was Triandafillov's discussion of force flow. He recognized that achieving tactical success required the distributed maneuver of forces over time and space to achieve local superiority over the defenders and described that movement in detail, drawing case studies from World War I. Triandafillov highlighted the failures of the Russian Imperial Army against the Germans, where forces were committed piecemeal, resulting in culmination and defeat of the Russian force.⁵⁶ This discussion was not solely offensive in nature, but also included the defense. Triandafillov identified the

⁵³ Joint Publications Research Service, trans., *Field Regulations of the Red Army, 1929 (PU-29)* (Moscow: Voenizdat, 1929), 5, <http://handle.dtic.mil/100.2/ADA354513> (accessed September 11, 2011). (hereafter abbreviated *PU-29*)

⁵⁴ Triandafillov, *The Nature of the Operations of Modern Armies*, 91–93, 118.

⁵⁵ Joint Publications Research Service, *PU-29*, 46–50.

⁵⁶ Triandafillov, *The Nature of the Operations of Modern Armies*, 100–102.

“rate of concentration” and the “tempo of measures regarding lateral movement” as significant factors in the success of a defense, especially against a breakthrough.⁵⁷

While Triandafillov limited his discussion to the first period of a war, he recognized that initial engagements were unlikely to be decisive on their own. As a data point, he illustrated that forces that had sustained losses even as high as thirty percent from starting strength still continued to fight during World War I. Triandafillov asserted that combat units became less operationally resilient as the war continued, making the composition and deployment of reserves of paramount importance.⁵⁸ The size and composition of the shock army itself was an acknowledgement of that analysis.

Triandafillov’s discussion of logistics in *The Nature of the Operations of Modern Armies* was the first real exploration of the mechanics of successive operations. In the absence of significant mechanization within the RKKA, he still envisaged the transport of most supplies by railroads. The greatly increased logistical and transportation requirements for rifle corps and shock armies in successive operations required a capability for reconstruction of railroads destroyed by a retreating enemy.⁵⁹ The shock army would culminate without external resupply throughout the duration of a campaign.

Triandafillov’s future force required mechanization to provide the mobility and lethality necessary for the kind of “deep and crushing blows” that may lead to “the rapid attrition of enemy personnel and material resources, of creation of objectively favorable conditions for sociopolitical upheavals in the enemy country.”⁶⁰ It also mandated the command structures and

⁵⁷ Ibid., 122–123.

⁵⁸ Ibid., 7, 125.

⁵⁹ Ibid., 129–138.

⁶⁰ Ibid., 150–151. A pursuit is an offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying that hostile force, typically precipitated by the hostile force’s loss of internal cohesion and subsequent physical destruction. Department of the Army, *Field Manual 3-90, Tactics* (Washington, D.C.: G.P.O., 2001), 7–1.

procedures necessary to control multiple operations distributed over time and space.⁶¹ The treatment of maneuver in PU-29 hints heavily towards mechanization but refers to it mostly as “wide envelopment” over depths far reduced from Triandafillov’s shock army since the RKKA of the day possessed neither the degree of mechanization nor the mobile protected firepower required to execute the kind of successive operations that Triandafillov envisioned.⁶²

One section of PU-29 that did not appear prominently in Triandafillov’s work but owes to Neznamov and Svechin was that of command and control. The manual articulated styles of centralized and decentralized control of units. In particular, the manual deemed decentralized “plan-oriented control” most appropriate in the breakthrough and pursuit, when “capacity for a bold and immediate display of initiative in all instances of a breakdown in communications with the superior officer and an interruption of control on his part,” a philosophy reminiscent of Schlichting.⁶³ However, it also acknowledged the virtual impossibility of centralized control of forces over the depths and frontages over which the RKKA envisaged its operations.

Triandafillov’s linkage of “deep and crushing blows” to strategic objectives made *The Nature of the Operations of Modern Armies* a milestone in the development of Soviet operational art. Triandafillov published one of the first influential theoretical works for the implementation of Frunze’s unified military doctrine. While Triandafillov spent far less time on the interface of military instruments of national power to other ones, he acknowledged “the decisive significance of politics in the initial selection of the target and axis of the blow and the assistance politics renders to military actions during the operations themselves.”⁶⁴

⁶¹ Schneider, *The Structure of Strategic Revolution*, 181–191.

⁶² Joint Publications Research Service, *PU-29*, 44–45.

⁶³ *Ibid.*, 13–14.

⁶⁴ Triandafillov, *The Nature of the Operations of Modern Armies*, 156.

As a committed Communist and one of the first of the Red Commanders to reach flag rank, Triandafillov envisioned a role for political commissars in spreading Communist ideology.⁶⁵ The discussion of political support for combat activities in PU-29 reflects a similar view of political commissars in support of the RKKA's combat operations. Agitation and propaganda work had both a sustaining role for the political orthodoxy of the Soviet military forces as well as in shaping the local organizations and population to support the RKKA forces in their area.⁶⁶

In spite of political work discussions, PU-29 was purely a manual of tactics, rather than operational art; only in its most abstract sense did the manual represent any contextualization of Soviet strategy, which in any event, was inaccessible to all but a few of the Marshals of the Soviet Union. Only the parts of that strategic discussion directly related to the combat employment of Soviet forces appeared in PU-29. While a discussion of strategic art was inappropriate to its target audience of military commanders ranging from *front* down to the battalion level, no separate treatment of what might have been considered strategic art (along the lines of Svechin) appeared elsewhere under official RKKA imprimatur. Triandafillov died in an airplane crash on July 12, 1931, ending his development of deep operations theory.

Mikhail N. Tukhachevsky, a Marshal of the Soviet Union, is perhaps the best known of the deep operations theorists in the interwar period. In spite of Tukhachevsky's fame, there exist few English language translations of his work, a consequence of his death during the Purges and the subsequent suppression of his writings. His greatest influence appeared in the Provisional Field Regulations of the RKKA of 1936 (PU-36), a refinement of the concepts in PU-29 and the official introduction of deep operations in the Soviet military lexicon.

⁶⁵ Ibid., 159–160.

⁶⁶ Joint Publications Research Service, *PU-29*, 27–33.

The notion of annihilation (*sokrushenie*) being the object of all military action was a prominent theme in Tukachevsky's professional writing. That theme was apparent as early as 1924, in a short polemic piece called "The Battle of the Bugs," in which Tukachevsky uses killing bedbugs as a metaphor. Tukachevsky recognized that destruction of a force was not possible in a single so-called decisive operation, and cannot occur solely in the moral domain of warfare. Tukachevsky saw attrition as a guarantee of culmination prior to victory and argued instead for "the destruction of the organism itself – of the forces, and of an army's *real* (emphasis in original) nervous system, its communications."⁶⁷ The extension to the impossibility of a single decisive battle also led Tukachevsky, in his 1928 article "War as a Problem of Armed Struggle" to the successive operations that later appeared in PU-29.⁶⁸

Tukachevsky pilloried Svechin's strategy of attrition as inconsistent with Marxist-Leninist ideology. Part of Tukachevsky's criticism of Svechin also rested in the latter's eclectic approach to military theory and advocacy of a more defensive posture. Instead, Tukachevsky proposed an RKKA capable of executing a strategy of destruction in line with Marxist-Leninist political thought and was successful in ousting Svechin as a class enemy.⁶⁹

In PU-36, Tukachevsky expanded on Triandafillov's prior work to introduce the concepts of simultaneously overwhelming an enemy and the "all-arms battle" to Soviet military science. The simultaneity of offensive operations entailed a holding force and a shock group (*udarnaia grupa*) force to establish wide contact to overwhelm an adversary. Adding to this simultaneity was the employment of armored forces in PU-36, expanding on their treatment in

⁶⁷ Mikhail N. Tukachevsky, "The Battle of the Bugs," in *Deep Battle: the brainchild of Marshal Tukhachevskii*, ed. Richard E. Simpkin and John Erickson (London; Washington: Brassey's Defence, 1987), 85–87.

⁶⁸ Mikhail N. Tukachevsky, "War As A Problem of Armed Struggle," in *Deep Battle: The Brainchild of Marshal Tukhachevskii*, ed. Richard E. Simpkin and John Erickson (London; Washington: Brassey's Defence, 1987), 123–124.

⁶⁹ Harrison, *The Russian Way of War*, 129–133.

PU-29.⁷⁰ Richard Simpkin's *Deep Battle*, a history of Tukhachevsky's work, also notes that simultaneity was an inheritance of Russian military thought since the 18th century.⁷¹

The "all-arms battle" emphasized combined arms integration throughout and across formations and units to a degree beyond what Triandafillov had proposed. To resource this concept, Tukhachevsky proposed a comprehensive modernization of the RKKA, building on Frunze's and Triandafillov's foundations to apply mechanization across the entire force. Although his early recommendations in the late 1920s for modernization were extravagantly infeasible, he saw such estimates as necessary for the RKKA to have the ability to conduct penetration, envelopment, and pursuit of an enemy force and destroy it at the operational level.⁷²

In 1931, Tukhachevsky became deputy commissar of Military and Naval Affairs, a member of the RVSR, and Director of Armaments for the RKKA, enabling him to initiate the mass mechanization that was the foundation for the large, mobile, and lethal force he envisioned.⁷³ PU-36 was the blueprint for the kind of "deep battle" that his mass mechanized force would conduct. Rather than just the successive operations that appeared in PU-29 and Triandafillov's work, deep battle promised decisive maneuver over the frontages and depths that successive operations attempted to achieve. However, Tukhachevsky never fully realized his vision. The development of deep operations passed to the few remaining theoreticians after Tukhachevsky's arrest, trial, and execution in 1937.

⁷⁰ This comes from Simpkin's own translation of PU-36, appearing as Richard E. Simpkin, trans., "Soviet Field Service Regulations 1936," in *Deep Battle: The Brainchild of Marshal Tukhachevskii* (London; Washington: Brassey's Defence, 1987), 170–171, 193–194. Simpkin's translation of PU-36 differs from another one produced under U.S. Government auspices in the 1980s. U.S. Joint Publications Research Service, trans., *Provisional Field Regulations of the Red Army, 1936 (PU-36)* (Moscow: Voenizdat, 1936), 32–37, <http://handle.dtic.mil/100.2/ADA361873> (accessed September 11, 2011). (hereafter abbreviated PU-36)

⁷¹ Simpkin, "Soviet Field Service Regulations 1936," 197.

⁷² Lennart Samuelson, "Mikhail Tukhachevsky and War-Economic Planning: Reconsiderations on the Pre-war Soviet Military Build-Up," *The Journal of Slavic Military Studies* 9, no. 4 (1996): 816, 823–829.

⁷³ Kipp, "The Origins of Soviet Operational Art, 1917-1936," 236–237.

Georgii S. Isserson was one of the few of the deep operations theorists to survive the Purges. Unlike Triandafillov who died in an airplane crash in 1931, and Tukhachevsky who perished in 1937, Isserson was witness to the revival of deep operations theory in the Great Patriotic War of 1941-1945 and beyond. Isserson was both the editor of PU-36 and author of one of its chapters.⁷⁴ Styling himself as successor to Triandafillov's theoretical work, Isserson emphasized successive and deep operations more so than Tukhachevsky's focus on total destruction of the enemy force.

Isserson's "deep strategy" concept was the last refinement of operational art prior to the Great Patriotic War. Deep strategy involved not just successive operations, but successive campaigns in pursuit of a strategic end in a war. As a result, modern operations were distributed efforts in time along the entire depth of a defending force.⁷⁵ Although Svechin placed operational art in an appropriate strategic context, Isserson was among the first to present operational art in its proper context within the strategy of annihilation that hallmarked not only Triandafillov's and Tukhachevsky's work, but also PU-36. However, Isserson had a more nuanced appreciation of the difficulties involved in the translation of strategic objectives into direction to subordinate units for action:

During the epoch of deep strategy, a deep multi-act, multi-level main battle incorporating all an operation's phenomena will lie from beginning to end within modern operational art's sphere of competence. Otherwise there absolutely cannot be any operational art.⁷⁶

In advancing Soviet operational art theory, Isserson also examined an operational commander's concerns of force flow and sustainment, continuing Triandafillov's earlier work.

⁷⁴ Richard E. Simpkin and John Erickson, *Deep Battle: The Brainchild of Marshal Tukhachevskii* (London; Washington: Brassey's Defence, 1987), 33.

⁷⁵ G. S Isserson, *The Evolution of Operational Art*, trans. Bruce W. Menning, 2nd expanded. (Moscow: Voenizdat, 1937), 48–49.

⁷⁶ *Ibid.*, 55–58, 68–75.

As he states in *The Evolution of Operational Art*, “contemporary operational art as the art of direction is above all the art of organization.” In particular, Isserson examined the complexities of trying to assemble the necessary resources to ensure the success of an assault force throughout the depth of a *front*.⁷⁷ Isserson planned to cover operational art in further detail in subsequent work. “Operational Prospects for the Future,” a short article in a 1938 issue of the journal *Military Thought*, shows the glimmers where Isserson sought to take deep operations theory and its implementation at the army and *front* level using combined arms forces.⁷⁸

Some of those writings (for example, all but one chapter of his 1936 book *The Fundamentals of Conducting Operations* and the second half of *The New Forms of Combat*, written from 1939-1940) disappeared in the wake of Isserson’s arrest and imprisonment in 1941. Isserson did not emerge from the *gulag* until 1955.⁷⁹ His students, however, applied the lessons they had learned from Isserson and his predecessors at the Frunze Academy in the Great Patriotic War.

The Revival of Operational Art in the Great Patriotic War

Although a full treatment of operational art during the Great Patriotic War is beyond the scope of this chapter, some treatment of the RKKA’s institutional renunciation and subsequent rediscovery of operational art during the war is necessary. The first narratives of Soviet victory in the West were one of a Soviet juggernaut that annihilated the *Wehrmacht* on the Eastern Front through sheer weight of numbers and resources. Unsurprisingly, these narratives relied heavily on German sources available immediately after the war, as the opacity of Soviet military history

⁷⁷ Ibid., 77.

⁷⁸ G. S. Isserson, “Operational Prospects for the Future,” in Harold S. Orenstein, trans., *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 2*, vol. 2 (London; Portland, Ore.: Taylor and Francis, 1995), 78–90.

⁷⁹ Harrison, *Architect of Soviet Victory in World War II*, 210, 264, 314.

sources at the time denied Western historians access to those records. Political and cultural tensions during the Cold War exacerbated the absence of balanced studies of Soviet operational art during the Great Patriotic War, extending even a decade after the fall of the USSR.⁸⁰

John Erickson, one of the leading analysts and historians of the Soviet period, was among the first to debunk the original narratives of the Great Patriotic War. Among Erickson's first contribution was his mammoth *The Soviet High Command*, a history of the RKKA from 1917 to 1941. *The Soviet High Command* first appeared in 1962, with two subsequent editions, the most recent as late as 2001. Erickson's *Stalin's War with Germany*, published in two volumes in 1975 and 1983, was a seminal work in introducing the history of Soviet strategy and operational art to the West.⁸¹ Most of the Western studies of Soviet military history and military thought came from Lester Grau, Jacob Kipp, and Bruce Menning of the U.S. Army's Soviet Army Studies Office (SASO) at Fort Leavenworth, Kansas, or from related organizations such as the Soviet Studies Research Center, of which Peter Vigor and Christopher Donnelly were influential members.⁸² Their scholarship provided much of the analytical works that opened Soviet narratives and perspectives to the West. The most prolific writer to chronicle the Great Patriotic War, however, is without a doubt David Glantz, a former director of SASO. Glantz has authored numerous works about the Soviet military, most notably *Stumbling Colossus*, which covers the state of the RKKA at the outset of the Great Patriotic War, and its sequel *Colossus Reborn*, which describes the first phase of the war from 1941 to 1943. He also published the first

⁸⁰ David M. Glantz, *Colossus Reborn: the Red Army at War: 1941-1943* (Lawrence: University Press of Kansas, 2005), xvi–xvii.

⁸¹ Jacob W. Kipp, "Operational Art and the Curious Narrative of the Russian Contribution," in *The Russian Military Today and Tomorrow: Essays in Memory of Mary Fitzgerald*, ed. Stephen Blank and Richard Weitz (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010), 219–220.

⁸² Jacob W. Kipp, "FMSO-JRIC and Open Source Intelligence: Speaking Prose in a World of Verse," *Military Intelligence Professional Bulletin* 31, no. 4 (December 2005): 46–47. With the dissolution of the USSR in 1991, SASO became the Foreign Military Studies Office, which is still in operation at Fort Leavenworth.

English-language book-length monograph on Soviet operational art in 1991, appropriately titled *Soviet Military Operational Art: In Pursuit of Deep Battle*.

Current interpretations of the Soviet experience in the Great Patriotic War divide the war into three periods. During the first part of the war from the commencement of Operation BARBAROSSA in June 1941 to the defense of Stalingrad in November 1942, the Soviets fought a strategic and tactical defense. German operational culmination in 1942, marked by the inability of the *Wehrmacht's* Army Groups North, Center, and South to advance past Leningrad, Moscow, and Stalingrad respectively marked a transition to the second period of the war. This second period, strategically contested by both sides, lasted from the beginning of the RKKA counteroffensive to retake Stalingrad on November 19, 1942 to the RKKA's invasion of Belorussia and the Ukraine in late 1943. By the end of the second period, the Germans had culminated strategically, having failed to seize the Caucasus oil fields or to destroy the Soviet industrial capability that would have taken the USSR out of the war. Operationally, the Soviets had started relearning the mechanics of deep battle; tactically, the quality of German replacements became progressively inferior relative to their Soviet counterparts. In the third period of the war, from January 1, 1944 to May 1945, the Soviets held the strategic initiative, combining all of its available instruments of national power to compel German surrender. The RKKA, within three years of its near destruction in 1942, demonstrated a degree of competence in operational art that was strategically decisive.⁸³

Unlike the basis in theory and experimentation that characterized the development of operational art before the Purges, the practice of operational art during the Great Patriotic War occurred in the crucible of a war of national survival. Most of the writings on the practice of Soviet operational art did not appear until after the war. The resistance of Voroshilov and other

⁸³ Glantz, *Colossus Reborn*, 3–5.

opponents of deep operations from 1937 to 1940 quickly gave way to the unforgiving rigors of combat. Isserson's experience as chief of staff of the 7th Army of the Leningrad Military District during the Russo-Finnish War in January-February 1940 was a sobering indicator. Among the 7th Army's more glaring problems was abysmally poor combined arms integration among infantry, tanks, artillery, and aviation – some of which was not necessarily the fault of the tactical commander, but a consequence of a hasty mobilization that deployed units without cohesion or training, the very foundation of tactical success in Soviet and Imperial Russian military literature.⁸⁴

In contrast, General Georgiy K. Zhukov's victory in Mongolia at Khalkhin-Gol in August 1939 was a part of a successful exercise of Soviet strategic and operational art in the context of a limited war. Soviet diplomacy surrounding the conflict in the East, resulting in the Molotov-Ribbentrop Non-Aggression Pact with the Germans, denied the Japanese a potential coalition partner against the USSR at a time that such a coalition would have been decisive.⁸⁵ In the meantime, Zhukov's successful deep operations against the Imperial Japanese Kwantung Army at Khalkhin-Gol prevented the Japanese from advancing into Mongolia. Soviet forces in the east executed an all-arms offensive against the Japanese, integrating tanks, infantry, and artillery, stopping at the Mongolia-Manchukuo border. In doing so, they defeated the Kwantung Army, while preventing escalation of the war in the east. The Soviet victory at Khalkhin-Gol enabled the creation of a balance of power in the east and deterred further Japanese military action against the USSR with an armistice that remained in effect through 1945.⁸⁶ The conduct of Soviet tactics and operational art at Khalkhin-Gol was a tribute to the work of Tukhachevsky and Isserson, but those lessons were largely forgotten at the beginning of the Great Patriotic War.

⁸⁴ Harrison, *Architect of Soviet Victory in World War II*, 216–227.

⁸⁵ Erickson, *The Soviet High Command*, 532.

⁸⁶ *Ibid.*, 536–537. Jacob W. Kipp, interview by author, October 3, 2011, notes in author's possession.

The conduct of Soviet operational art in the west, however, was inept during the opening stages of the Great Patriotic War. The RKKA had a defensive strategy at the beginning of the war, but its preparation and execution was poor. As the new Chief of the RKKA General Staff, Shaposhnikov had developed a remobilization plan in response to the 1938 German annexation of Czechoslovakia. That plan sought to reconstitute the men and forces decimated during the Purges, as well as deploy what forces were available against European threats in the west and Japanese threats in the east. At the same time, the USSR embarked on a crash industrial mobilization to complete the re-mechanization of the RKKA against the German threat in the west.⁸⁷ In 1939, the USSR was incapable of prevailing in a general war against either the Germans or the Japanese, let alone both.

The human cost of the destruction of the RKKA's talent just three years prior also became apparent; many of the commanders who could have prevented some of the ugly errors of combined arms integration were dead, victims of Stalin's purges. One of the few bright spots coming out of the Soviet debacle was Voroshilov's removal as Defense Commissar and replacement by Semyon K. Timoshenko, the *front* commander in the Russo-Finnish War.⁸⁸ Two of Timoshenko's first accomplishments in reprofessionalizing the RKKA were the reactivation in May 1940 of the tank corps (abolished some nine months prior) and the institution of unitary command (*edinonachale*) in the ranks, which empowered junior commanders to make tactical decisions without the approval of a political commissar.⁸⁹ In the meantime, the RKKA attempted to capture the hard lessons of the Russo-Finnish War, developing a provisional Field Regulations of 1939 (PU-39). While it was not a full refinement of the concepts introduced in PU-36, it was

⁸⁷ David M. Glantz, *Stumbling Colossus: The Red Army on the Eve of World War* (Lawrence: University Press of Kansas, 1998), 83–87.

⁸⁸ Erickson, *The Soviet High Command*, 533–537, 552–555.

⁸⁹ Carl Van Dyke, "The Timoshenko Reforms: March-July 1940," *The Journal of Slavic Military Studies* 9, no. 1 (1996): 89.

at least a start. However, the RKKA was unable to recover fully from the damage inflicted upon it by Voroshilov and the Purges before the war started.⁹⁰

The combined German and Soviet invasion of Poland in 1939 placed a further complication in the reconstitution of the RKKA. While Shaposhnikov's plan envisaged units arrayed in so-called "fortified regions" along the USSR's western border, the movement of those forces forward to occupy Poland after 1939 and the Baltic states of Estonia, Latvia, and Lithuania in 1940 effectively turned those units out of their fortified regions. Schneider describes such movement as a "defensive and doctrinal dislocation" that "destroyed the integration and coherence of the Soviet defense." Rather than an echeloned defense employing those border zones, those forces operated in front of those border zones, making those regions irrelevant.⁹¹

To make matters worse, the second echelon of the Soviet defense was not ready in time to concentrate against the German offensive in June 1941; the speed and lethality of the German advance denied the Soviets the ability to mass the counterattack its doctrine supposedly espoused. Soviet forces, spread thin over depths and frontages that dwarfed what they would have normally covered from those so-called fortified border zones were destroyed piecemeal as they moved from their assembly areas to their assigned defensive positions.⁹²

Although the strategy did not change, its translation into operational and tactical direction to Soviet *front*, army, corps, and division commanders was spotty and its inconsistent practice was a recipe for disaster. The legacy of the Purges was a highly politicized officer corps where military competence was devalued over political reliability, even with the commissars no longer

⁹⁰ Erickson, *The Soviet High Command*, 558.

⁹¹ James J. Schneider, "The Cobra and the Mongoose: Soviet Defensive Doctrine During the Interwar Period and the Problem of Strategic Dislocation," *The Journal of Slavic Military Studies* 19, no. 1 (2006): 65–66.

⁹² *Ibid.*, 66. Glantz, *Stumbling Colossus: The Red Army on the Eve of World War*, 96–97.

in the command structure. The majority of the competent commanders who might have salvaged some tactical or operational performance at the outset of the Great Patriotic War were dead by then, victims of the purges. No amount of planning could compensate for the inability of the military instruments of Soviet national power to protect the country from attack, or the inability of the economic instruments of Soviet national power to resource the RKKA's defense of the country. Deficiencies in industrial production at the strategic level were manifest as critical shortages of trucks and other rolling stock, an incomplete railway system that stopped short of the RKKA's forward logistics infrastructure, and units that deployed from faraway military districts understrength and without sufficient weapons or tactical mobility to enable them to fight once forward.⁹³ One of the few bright spots in the Soviet strategic defensive during this period was the decision to move Soviet heavy industry east to the Urals, which created competing demand for strategic transport, but preserved the strategic industrial and logistics base that kept the USSR in the war. Another was the Soviet system for activating cadres and expanding them into larger formations. The RKKA survived its abysmal tactical performance in 1941 and 1942 and the loss of over 100 infantry divisions because it deployed 97 divisions westward, as well as creating 194 additional divisions and 84 separate brigades, creating a combined force of some 5,373,000 by the end of June 1941.⁹⁴

One creation of the first period of the war was a single body for military policymaking for all of the armed forces in the USSR. Stalin disbanded the RVS SSSR in 1934, consolidating political-military central authority under a single defense commissar.⁹⁵ That arrangement gave way to a new organization, the *Stavka* of the Soviet High Command (*Stavka VGK* after August 8,

⁹³ David M. Glantz and Jonathan M. House, *When Titans Clashed: How the Red Army Stopped Hitler* (Lawrence: University Press of Kansas, 1995), 102–106.

⁹⁴ Glantz, *Stumbling Colossus: The Red Army on the Eve of World War*, 107. Glantz and House, *When Titans Clashed: How the Red Army Stopped Hitler*, 68–73.

⁹⁵ Erickson, *The Soviet High Command*, 369–371.

1942), which served as a national security council for the management of the war. The RKKA General Staff was made subordinate to *Stavka VGK* and served in the capacity as the “brain of the army” (*Mozg Armii*) separate from, but always complementary to the commander. Shaposhnikov, as the first chief of staff of *Stavka*, had theorized such a role in the 1930s.⁹⁶ The term *Stavka* eventually came to refer to not only *Stavka VGK*, but also the RKKA General Staff. As a collective organization, it provided direction and guidance to four main commands of strategic direction (which had overall direction of multiple *fronts*), and later directly to the various *fronts* throughout the RKKA. While Timoshenko nominally chaired the *Stavka VGK* as the defense commissar, its membership also included Stalin, who ran it as commander-in-chief. In doing so, the USSR created a highly effective, if blunt mechanism for policy formulation, development of strategy, and the communication of that strategy into operational direction through the RKKA General Staff and the *Stavka* directives it published.⁹⁷

Improvements in force structure, materiel, and command structures aside, the Great Patriotic War was also the catalyst for the revival of deep operations in practice, if not in name. Although the draft Field Regulations of 1939, 1940 and 1941 were products of the post-purge RKKA, the RKKA adapted to the demands of combat against the Germans, hallmarked by the strategic offensive, a form of maneuver that appeared in 1943. These operations were multiple-front operations directed by a *Stavka* representative, enabling a high degree of strategic and operational coherence. Such offensive operations relied heavily on operational deception (*maskirovka*) to enable the *frontal* shock armies to penetrate and exploit German defenses.⁹⁸

⁹⁶ Ibid., 597–599. An overview of Shaposhnikov’s *Mozg Armii* appears in Schneider, *The Structure of Strategic Revolution*, 248–257.

⁹⁷ Glantz and House, *When Titans Clashed : How the Red Army Stopped Hitler*, 62–65.

⁹⁸ Glantz, *Soviet Military Operational Art*, 127–128. Simpkin and Erickson, *Deep Battle*, 58.

The official expression of this practice appeared in the Field Regulations of 1944 (PU-44), which took the concepts introduced in PU-36 and added further detail informed by wartime experience.⁹⁹ Although PU-44 does not contain the term “deep operation,” and eliminated terms such as “striking forces” and “holding forces,” the conduct of the offensive in PU-44 still involved weighting a primary axis of advance, with other forces preventing an adversary from massing on that primary axis.¹⁰⁰ PU-44 also translated hard lessons from Great Patriotic War experience into significantly more detail, specifically on the defense (especially in urban areas), withdrawal of forces under contact, breakout from encirclement, and coordination of attack aviation compared to PU-36.¹⁰¹ PU-44 was the last overarching manual published on operational art before the end of the Great Patriotic War.

The full expression of Soviet operational art occurred in the last phase of the war, which saw the USSR on the strategic offensive. This period also marked the pinnacle of Soviet operational art practice, marked by a coherence of action that was missing before this period. The strategic direction for the RKKA’s advance towards Germany came from the *Stavka*, which envisaged simultaneous operations by groups of multiple fronts along the entire frontage of the RKKA’s efforts in the west. These multiple-front operations were intended to apply pressure on the entire frontage of a defending German force, not only to enable the success of the primary axis of advance at the tactical and operational level, but also to accomplish a specific strategic

⁹⁹ Joint Publications Research Service, trans., *Draft Field Regulations of the Red Army, 1944 (PU-44)* (Moscow: Voenizdat, 1944), 4, <http://handle.dtic.mil/100.2/ADA354524> (accessed September 11, 2011).

¹⁰⁰ *Ibid.*, 5, 18.

¹⁰¹ *Ibid.*, 125–178 passim. Some of the experiences that contributed to the text in PU-44 related to “Defense of a Large Populated Area” and “Position Concerning the Organization and Operation of the Army Rear” appear in Harold S. Orenstein, trans., *Soviet Documents on the Use of War Experience: Volume II The Winter Campaign 1941-1942*, vol. 2 (London; Portland, Ore.: Frank Cass, 1991), 135–148, 218–232 passim.

objective. While these operations could occur at different locations at space and time, the strategic objective unified the conceptual intent of the various front-level operations.¹⁰²

What truly distinguished the operational and strategic performance of the RKKA (and of the USSR) was the coherence of the linkage from policy to strategy to operations. Stalin's presence as a member of the *Stavka* (and overriding vote as head of state) ensured a clear linkage between policy direction and strategy. The RKKA General Staff served as the top-level operational headquarters, parsing strategic direction into operational guidance to the multiple *fronts* that executed that operational guidance. While so-called "*Stavka* representatives" served, in essence, as operational commanders through 1944, such authorities shifted to Stalin for certain operations, such as the seizure of Berlin in 1945. The end of the Great Patriotic War even marked the precursor to the Cold-War era TVD headquarters, in the form of a joint high command charged with preparation for the Manchurian offensive against Japan, freeing the *Stavka* from having to manage both policy and strategy.¹⁰³

One example of the superb operational performance of the RKKA late in the war occurred in Belorussia in mid-1944, in the form of Operation BAGRATION, an operation named for P.I. Bagration, a Georgian-born Imperial Russian Army general in the 18th century. Operation BAGRATION effectively opened the door to Germany, which lost almost 450,000 men and more than 30 *Wehrmacht* divisions destroyed. While the Soviet forces that physically destroyed Army Group Center encompassed over four *fronts*, they were the beneficiary of another operation intended to compel Finnish surrender in the north. In addition, extensive *maskirovska* operations in the north and south of the Soviet frontage prevented the Germans

¹⁰² N. Talenskiy, "The Development of Operational Art According to the Experience of Recent Warfare," in *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 1*, trans. Harold S. Orenstein, vol. 1 (London; Portland, Ore.: Taylor and Francis, 1995), 162.

¹⁰³ David M. Glantz, *The Military Strategy of the Soviet Union: A History* (London: Frank Cass, 2004), 154. Glantz and House, *When Titans Clashed: How the Red Army Stopped Hitler*, 195–199.

from gaining actionable intelligence above the tactical level about the disposition of forces assembling for the attack.¹⁰⁴

The character of Soviet operational art practice in 1944 and 1945 was consistent with the theoretical foundations laid by Triandafillov, Tukhachevsky, and Isserson, even if those names were found nowhere in the literature of the time. BAGRATION was wildly successful in its first twelve days; the Germans lost 25 divisions (with many others heavily attrited) and over 300,000 men from June 22 to July 4, 1944. Soviet preparation in assembling forces prior to the attack enabled the initial attack to break through Army Group Center's front lines north of Minsk. Exploiting success, two fronts continued to attack through Belorussia towards Lithuania, with additional reinforcements following behind to expand the torrent of Soviet forces moving west. The remainder of Soviet combat power dedicated to the operation enveloped and annihilated the elements of Army Group Center encircled east of Minsk. Indeed, the Soviets culminated operationally only because they outran their supply lines, not because of German resistance.¹⁰⁵

The USSR's victory over the Germans enshrined the Great Patriotic War as the benchmark, if not the empirical basis, for virtually all subsequent development of Soviet operational art. Although Stalin wasted little time reconsolidating political power after the war, discrediting such wartime leaders as Zhukov, deep operations was enshrined in Soviet military thought as the method by which the RKKA prevailed on the battlefield.¹⁰⁶ Unsurprisingly, adulation of Stalin and his "permanent operating factors in war" hallmarked military discourse in

¹⁰⁴ Glantz and House, *When Titans Clashed: How the Red Army Stopped Hitler*, 195–202, 214–215.

¹⁰⁵ *Ibid.*, 206–210.

¹⁰⁶ Glantz, *Soviet Military Operational Art*, 160.

the first years after the war. Such sycophancy in postwar military thought stopped only with Stalin's death in 1953.¹⁰⁷

Through the 1950s, however, little changed regarding the theoretical dimensions of Soviet operational art other than the full mechanization (and the long-overdue retirement of Voroshilov's and Budenny's horse cavalry) of the newly-renamed Soviet Army and the use of nuclear weapons within the context of a formation or large unit (division, corps, or *front*) operation. Nuclear weapons appeared almost innocuously, as another type of artillery ordnance, in the *Field Service Regulations of the Armed Forces of the USSR (Division-Corps) of 1959* (PU-59). The methods laid out in PU-44, informed by the campaigns of 1945 and the Soviet fielding of nuclear weapons, remained the basis of PU-59 and other Soviet official pronouncements on operational art through the 1950s.¹⁰⁸ However, in describing nuclear weapons as "the primary means of destruction," PU-59 also contained the seeds for the next evolution of Soviet military thought, one in which operational art existed largely in name only.

Soviet Operational Art in the Nuclear Era

The de-Stalinization that ensued after Stalin's death in 1953, combined with the proliferation of nuclear weapons in the Soviet arsenal, initially precipitated a compression of the levels of war in Soviet military thought. The impact of the subsequent military discussion of

¹⁰⁷ The "deep operation" appears throughout the discussion of operational art in V. Zlobin and A. Vetoshnikov, "Concerning Soviet Army Operational Art," in *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 1*, trans. Harold S. Orenstein, vol. 1 (London; Portland, Ore.: Taylor and Francis, 1995), 173. A particularly egregious example of Stalin's cult of personality appears in V. Zlobin, "The Triumph of Soviet Operational Art in the Great Patriotic War," in *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 1*, trans. Harold S. Orenstein, vol. 1, 2 vols. (London; Portland, Ore.: Taylor and Francis, 1995), 218–236.

¹⁰⁸ Central Intelligence Agency, trans., *Field Service Regulations of the Armed Forces of the USSR (Division-Corps), 1959* (Voyenizdat, 1959), 13–14, http://www.foia.cia.gov/docs/DOC_0001197486/DOC_0001197486.pdf (accessed September 12, 2011). Glantz, *Soviet Military Operational Art*, 162, 167. The RKKA officially became the Soviet Army (*Sovetskaya Armiya*) in 1946.

nuclear tactics and strategy was a concurrent de-emphasis on operational art. Similar to the United States' "New Look" military thought during the 1950s, nuclear weapons offered a siren song of reduced spending on defense through nuclear deterrence.¹⁰⁹ Under Nikita S. Khrushchev and the de-Stalinization that occurred during his term as First Secretary of the Communist Party of the USSR, the Soviet military underwent, in Khrushchev's words, a "revolution in military affairs," and with it a far greater emphasis on the role of nuclear weapons in achieving Soviet strategic aims.¹¹⁰

The most significant piece of Soviet military thought during this period was Vasily D. Sokolovsky's 1962 anthology *Military Strategy* (with second and third editions in 1963 and 1968 respectively), which was the first significant Russian-language treatment on strategic art since Svechin's *Strategy* four decades prior. The authors of *Military Strategy* were senior Soviet military officers (with one exception, V. V. Larionov, who was a retired colonel and a civilian). Sokolovsky, a Great Patriotic War veteran and Marshal of the Soviet Union, was editor-in-chief, although he is credited with authorship in Western editions of *Military Strategy*.¹¹¹ The availability of nuclear weapons at the tactical and strategic level de-emphasized many of the operational characteristics that had hallmarked the conduct of deep and successive operations. *Military Strategy* expressly sought to refute "the principle of partial victory," in that "success of a general strategic nature" could accomplish partial success and "achieve decisive results in gaining victory in war often without utilizing the forces and means of the tactical and operational element." In the second edition (although removed from the third edition), the authors went as far as to claim that "over-all victory in war is no longer the culmination, nor the sum of partial

¹⁰⁹ LTC Andrew J. Bacevich, *The Pentomic Era: The U.S. Army Between Korea and Vietnam* (Washington, D.C.: National Defense University Press, 1986), 15–16.

¹¹⁰ Glantz, *The Military Strategy of the Soviet Union: A History*, 188–189.

¹¹¹ Vasily Danilovich Sokolovsky, *Soviet Military Strategy*, ed. Scott, Harriet Fast, 3rd ed. (London: Macdonald and Jane's [for the Strategic Studies Center, Stanford Research Institute], 1975), xxiv–xxvi.

successes, but the result of a one-time application of the entire might of a state accumulated before the war.”¹¹²

The implication was that strategic nuclear weapons could obviate the requirement for operational art by being able to achieve strategic success in a single battle or engagement. However, Harriet Fast Scott, editor of the English-language third edition of *Military Strategy*, posited that the character of military discourse under Khrushchev might have precluded any discussion of strategy using non-nuclear means, which may explain the rescission of the second edition’s highly provocative language (published while Khrushchev was still First Secretary) compared to the third edition.¹¹³ Sokolovsky’s discussion of the global destruction inherent to a strategic nuclear exchange and the unacceptability of a general war conducted through strategic nuclear means also corroborates Scott’s assertion since such discussion appears solely in the third edition. Other authors, even before Khrushchev’s removal, also echoed the necessity for more traditional deep operations in conjunction with nuclear fires, likely a tacit acknowledgment of Soviet failures in the Cuban Missile Crisis of October 1962.¹¹⁴

Soviet employment of nuclear weapons, regardless of magnitude or role, was constrained by the Western strategies of Assured Destruction and Mutual Assured Destruction during that time period. Simpkin noted that once those Western strategies were in place that nuclear weapons became, in essence, *negodnyi* (“unusable,” but also “unsuitable” or “inappropriate”).¹¹⁵ While the Soviet military literature continued to address strategic and tactical nuclear weapons, the reliance on nuclear fires as articulated in Sokolovsky’s second edition remained in place,

¹¹² Ibid., 12.

¹¹³ Ibid., 47.

¹¹⁴ Ibid., 197.

¹¹⁵ Simpkin and Erickson, *Deep Battle*, 29.

even after Khrushchev's removal as First Secretary.¹¹⁶ However, in the event of a war, the Soviet Army still intended to conduct deep operations much as it had done during the Great Patriotic War, namely the practice of attacking along breakthroughs at high speed, something which was institutionalized in the Field Service Regulations of 1964 (PU-64), which replaced PU-59.¹¹⁷

The de-Stalinization of the 1950s and 1960s also marked the rehabilitation of operational art theorists previously suppressed during Stalin's era. I. Mariyevsky, in a 1962 article in *Voeynno-istoricheskii zhurnal* (Military-Historical Journal), provided one of the first public rehabilitations of Tukhachevsky, Svechin, Varfolomeev, and other military specialists.¹¹⁸ The 1965 publication of *Questions of Strategy and Operational Art in Soviet Military Works 1917-1940* made some of those military specialists available to a generation of Soviet officers who had entered service long after the Purges.¹¹⁹ That rehabilitation provided the Soviet military a vehicle for recapturing the relevance of operational art as it sought to reconcile its strategy with its available instruments of national power.

By the 1970s, the USSR had gained rough parity in strategic nuclear delivery systems such as intercontinental and submarine-launched ballistic missiles, as made evident by the first Strategic Arms Limitation Treaty (SALT I) agreement between the United States and USSR in

¹¹⁶ V. Larionov, "The Struggle for the Strategic Initiative in Modern Warfare," trans. Central Intelligence Agency, *Voennaia Mysl'* 64, no. 3 (1962), <http://www.foia.cia.gov/SovietandWarsawPact/1963/1963-01-25a.pdf> (accessed September 12, 2011).

¹¹⁷ V. Chuykov, "The New Field Service Regulations of the Armed Forces of the USSR," trans. Central Intelligence Agency, *Voennaia Mysl'* 71, no. 1 (1964): 23–25, <http://www.foia.cia.gov/SovietandWarsawPact/1978/1978-12-14.pdf> (accessed September 12, 2011).

¹¹⁸ I. Mariyevsky, "Formation and Development of the Theory of Operational Art (1918-38)," in *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 1*, trans. Harold S. Orenstein, vol. 1 (London; Portland, Ore.: Taylor and Francis, 1995), 298–312 passim.

¹¹⁹ Glantz, *Soviet Military Operational Art*, 207.

May 1972.¹²⁰ While the USSR retained a capability to fight either with or without nuclear weapons, the rough parity of nuclear weapons between the two sides led to a revitalization of operational art.¹²¹

The shift back to prosecuting a strategic offensive in Europe using conventional weaponry occurred in the 1970s. Soviet military assessments conducted from 1968 to 1978 showed that fallout from nuclear weapons use in Europe would contaminate Eastern Europe and the USSR, regardless of whether nuclear escalation occurred or not.¹²² The catalyst was a series of studies starting in 1976 that sought to determine the optimal number of nuclear weapons required to prevail against the North Atlantic Treaty Organization (NATO). Based on analyses done in the 1970s, Marshal of the Soviet Union Nikolai V. Ogarkov, the Chief of the General Staff from 1977 to 1984, directed the General Staff away from any significant planning on limited nuclear war, believing that nuclear release at any level would inevitably lead to a strategic nuclear exchange between the United States and the USSR.¹²³

Although the USSR continued to develop the SS-20 theater nuclear ballistic missile as a long-range precision strike platform, the Soviet General Staff came to the observation that nuclear weapons were unusable in any military conflict with NATO.¹²⁴ Instead, the General Staff embarked on studies to determine how long a war in Western Europe could be fought conventionally before NATO elected for nuclear release. When Ogarkov took over as Chief of

¹²⁰ Harriet Fast Scott and William Fontaine Scott, eds., *The Soviet Art of War: Doctrine, Strategy, and Tactics* (Boulder, Colo.: Westview Press, 1982), 241.

¹²¹ Klein, "The Sources of Soviet Strategic Culture," 479. Glantz, *Soviet Military Operational Art*, 215.

¹²² John C. Hines, Ellis M. Mishulovich, and John F. Shull, *Soviet Intentions, 1965-1985: Volume I: An Analytical Comparison of U.S.-Soviet Assessments During the Cold War*, vol. 1 (McLean, Va.: BDM Federal, 1995), 43-49.

¹²³ John C. Hines, Ellis M. Mishulovich, and John F. Shull, "Record of Interview with Gen.-Lt. Geli Viktorovich Batenin, August 6, 1993," in *Soviet Intentions, 1965-1985: Volume II: Soviet Post-Cold War Testimonial Evidence*, vol. 2 (McLean, Va.: BDM Federal, 1995), 7-8.

¹²⁴ John C. Hines, Ellis M. Mishulovich, and John F. Shull, "Summary of Interview with Gen.-Col. (Ret.) Andrian A. Danilevich, March 5, 1990," in *Soviet Intentions, 1965-1985: Volume II: Soviet Post-Cold War Testimonial Evidence*, vol. 2 (McLean, Va.: BDM Federal, 1995), 25.

the General Staff, the assumption was for five to six days, with the final assumptions being that an entire war could be fought conventionally.¹²⁵

The introduction of the operational maneuver group (OMG), introduced as a tank or mechanized army corps, and later called a unified army corps, was an unpleasant surprise for many Western observers of the Soviet military.¹²⁶ The first Western recognition of the entity appeared in classified reporting in the 1970s, but first saw public recognition in “The Soviet Operational Manoeuvre Group: A New Challenge for NATO,” a 1982 article by Christopher N. Donnelly in *International Defense Review*.¹²⁷ The OMG itself was a reaction to NATO fielding not only tactical nuclear weapons, but also advanced conventional precision guided munitions in conjunction with target acquisition and observation systems, examples of what the Soviets termed as a reconnaissance-strike complex (*razvedivatel'no-udarnyy kompleks*).¹²⁸ Those systems, coupled with such Western operational concepts such as Active Defense, and later, Follow-On Forces Attack and AirLand Battle, enabled the identification and engagement of the second echelon forces that would have overwhelmed the NATO main battle area defense. In response, the Soviets essentially merged their first and second echelons to prevent NATO from defeating them in detail. The compression of echelons would have discouraged NATO from

¹²⁵ Ibid., 24.

¹²⁶ Soviet Army Studies Office, *The Soviet Conduct of War* (Fort Leavenworth, Kan.: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1987), 40–42, 59.

¹²⁷ Directorate of Intelligence, “The Soviet Operational Maneuver Group: An Intelligence Assessment” (Central Intelligence Agency, 1983), Soviet and Warsaw Pact Military Journals, FOIA Reading Room, http://www.foia.cia.gov/docs/DOC_0000498534/DOC_0000498534.pdf (accessed September 26, 2011) (accessed September 26, 2011). Donnelly’s article was later reprinted in the March 1983 issue of *Military Review*, the official journal of the U.S. Army Combined Arms Center. Christopher N. Donnelly, “The Soviet Operational Maneuver Group: A New Challenge for NATO,” *Military Review* LXIII, no. 3 (March 1983): 43–60.

¹²⁸ P. G. Skachko, “Simultaneous Action against the Entire Depth of the Enemy’s Operational Structure - Leading Trends in the Development of the Theory of Operational Art,” in *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis, Vol. 2*, trans. Harold S. Orenstein, vol. 2 (London; Portland, Ore.: Taylor and Francis, 1995), 254. Milan N. Vego, *Recce-Strike Complexes in Soviet Theory and Practice* (Fort Leavenworth, Kan.: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1990), 1–7.

employing nuclear fires close to their own lines, but effectively removed the *front's* exploitation force. The OMG was an attempt to recreate such exploitation capabilities internal to the *front*.¹²⁹

One potential complication for the OMG was its sustainment. The modeling done in the 1970s on mobilization and deployment of forces illustrated a flaw in the logistics and force flow of Soviet conventional forces in the offensive. Based on those models, an initial operation would allow the first echelon fronts approximately nine to twelve days to seize their objectives, after which time they had exhausted their logistical capacity, requiring another ten to fourteen days to consolidate and reorganize their forces as frontal logistical support caught up. The Yom Kippur War and other studies provided plenty of evidence for the dramatically increased lethality on the battlefield after the 1970s, with very real implications to supply, maintenance, medical support, and their effects on operational logistics and force flow. The USSR did not have a logistics structure that would support true successive maneuver short of cannibalizing armies and divisions in the offense.¹³⁰

Ironically, the precedent for the OMG dated back to the Great Patriotic War and the employment of “mobile units”, the concept for which appeared in nascent form in the 1930s, but became praxis by the time PU-44 saw publication. The primary role for mobile units, primarily tank, mechanized, and cavalry divisions and corps, was exploitation of a penetration. That exploitation involved the seizure of an enemy defensive zone before that enemy could organize a defense, as well as the annihilation of enemy reserves.¹³¹

¹²⁹ Orenstein, *The Evolution of Soviet Operational Art, Vol. 2*, 2:123. Donnelly, “The Soviet Operational Maneuver Group: A New Challenge for NATO,” 47–52.

¹³⁰ John C. Hines, Ellis M. Mishulovich, and John F. Shull, “Record of Interview with Dr. Vitalii Nikolaevich Tsygichko, December 21, 1991 and December 23, 1991,” in *Soviet Intentions, 1965-1985: Volume II: Soviet Post-Cold War Testimonial Evidence*, vol. 2 (McLean, Va.: BDM Federal, 1995), 155.

¹³¹ Skachko, “Simultaneous Action against the Entire Depth of the Enemy’s Operational Structure,” 255–256. Joint Publications Research Service, *PU-44*, 74.

However, command and control at the tactical level was always an element of risk for Soviet deep operations. The chaos and friction inherent to the operations of an OMG or any other exploitation force operating ahead of its *front* meant that direction and guidance to those units had to be very simple. That friction would have been magnified even further on a nuclear battlefield. Fielding of the so-called reconnaissance-strike complexes within NATO, rather than enabling greater certainty, would have increased the chaos on a modern battlefield as the scope of combat increased tremendously, very likely beyond the immediate control of Soviet tactical commanders. Coping with those conditions required leaders and followers who could cope with the level of uncertainty inherent to that chaos, driving a need for *auftragstaktik* in the ranks, a practice that required not only initiative from below, but also support for that initiative from higher.¹³²

The Soviet military had no institutional investment in the ability of junior officers and enlisted soldiers to exercise the initiative that their military literature proposed. The role of commanders much below the division or corps level was simply to execute whatever orders they received. Any interpretation of tactical opportunities or deviation from a battle plan was the domain of general officers.¹³³ Colonel-General A. A. Danilevich, one of Ogarkov's trusted subordinates and the author of the Soviet General Staff's three-part deep operations strategy for the 1980s, was blunt in his assessment of the quality of forces in determining combat potential. At the tactical level, the Soviets prevailed through mass, not through skilled tactical art.¹³⁴ Soviet soldiers were conscripts on two-year enlistments. Only the middle twelve months of that period was militarily productive as those conscripts spent the first six months adapting to their

¹³² Simpkin and Erickson, *Deep Battle*, 266.

¹³³ Kipp, interview, October 3, 2011.

¹³⁴ Hines, Mishulovich, and Shull, "Summary of Interview with Gen.-Col. (Ret.) Andrian A. Danilevich, March 5, 1990," 25.

duties and their last six months anticipating their mustering out. Even then, those conscripts were highly reliant on battle drills to prescribe set actions on the battlefield. In the absence of junior level institutional initiative, real decision-making occurred far away from close combat.¹³⁵

Finally, as the Soviet General Staff concluded that it had the full set of capabilities to execute Danilevich's strategy of deep operations, it lost one of the linchpins of that strategy. Under the provisions of the Intermediate Nuclear Forces Treaty of 1987, the USSR gave up the SS-20 missile. The General Staff had counted on the SS-20 to enable the strategic offensive of multiple *fronts* under a TVD.¹³⁶ The long-range accuracy of the SS-20 provided the deep precision strike capability to enable operational maneuver by *fronts* and their OMGs. However, the OMG itself was a tactical attempt to address parts of a strategic problem, which operational art could not fully address.

A Revolution Left Unfinished

Soviet operational art had two flaws, neither of which it could completely address. These flaws started from opposite ends of the levels of war. The first stemmed from the consonance of Soviet military doctrine with the political culture it served. The second flaw stemmed from the need for a Soviet military that could exercise initiative on the battlefield, while remaining politically orthodox. Both flaws were a consequence of the greater ideological and political environment in which the Soviet military had to exist, and created an operational art disparate from the strategy and tactics it sought to bridge.

The separation of Soviet operational art and strategy was to some extent a function of the separation that existed between Soviet military strategy and its policy direction. Condoleezza

¹³⁵Kipp, interview, October 3, 2011.

¹³⁶Hines, Mishulovich, and Shull, "Record of Interview with Gen.-Lt. Gelii Viktorovich Batenin, August 6, 1993," 8.

Rice, in “The Making of Soviet Strategy,” offers an important observation of Soviet military thought and the implications it held for the theory and practice of Soviet operational art. Noting that much late Soviet thought still owes much to its formative period, Rice observed that “Soviet military strategy is created on two levels, one political and the other military-technical.” While the military-technical side was supposedly subordinate to the political, they did not always coexist well.¹³⁷ Both Kipp and Rice noted that the object of Soviet military theorists was always a unified military doctrine and science (in the Soviet usages of those terms). That unified military doctrine and science remained mostly elusive for the existence of the Soviet Union.

The debate over nuclear weapons was symptomatic of that discontinuity between Soviet strategy and policy. Khrushchev’s advocacy of nuclear weapons as an instrument of Soviet strategy was the centerpiece of the Revolution in Military Affairs, with an underlying assumption that all wars would be nuclear. Khrushchev’s de-emphasis of conventional forces was an attempt to achieve policy aims through a nuclear strategy that, in Khrushchev’s view, required no translation into tactics. After Khrushchev’s failure to achieve policy objectives in the Cuban Missile Crisis in 1962, conventional force options began to reenter Soviet military discourse, although the discussion of nuclear warfare remained.¹³⁸ The shift in tone between Sokolovsky’s second and third editions was but an example of this shift, as was the change in instruction back towards conventional combat at the Voroshilov General Staff Academy in the 1970s.¹³⁹

The shift away from nuclear weapons stemmed from Ogarkov’s assumption, based on analyses done in the 1970s, that any conflict involving the use of tactical nuclear weapons would inevitably escalate to a strategic nuclear exchange between the United States and the USSR. The

¹³⁷ Rice, 674-676.

¹³⁸ Condoleezza Rice, “The Party, the Military, and Decision Authority in the Soviet Union,” *World Politics: A Quarterly Journal of International Relations* 40, no. 1 (1987): 60.

¹³⁹ Ghulam Dastagir Wardak, *The Voroshilov Lectures: Materials from the Soviet General Staff Academy*, vol. 3 (Washington, D.C.: National Defense University Press, 1989), 51–129.

consequent shift to a defensive policy and grand strategy created a mismatch between policy and the offensive military strategy that was the basis of Soviet military doctrine. Nuclear weapons became “unsuitable,” leading to concepts such as the OMG intended to create rapid victory. The paradox was that rapid success through conventional means could very well have been the trigger event for the nuclear release that the Soviets sought to prevent.

One of the expressions of the military-technical wing of a unified Soviet military doctrine would have been the coordination of operational art and strategy, the linkage of which was more the exception rather than the rule. Of the Soviet theorists, only Svechin had written about anything that resembled strategic art. Tukhachevsky’s suppression of Svechin and the latter’s defensive strategy also meant that strategy remained largely unexplored before the Great Patriotic War. Much of Triandafillov’s details were technical in nature, as he articulated the physical requirements of a force that did not yet exist. Tukhachevsky and Isserson’s attempts to address strategy stopped at military instruments of national power, rather than the other instruments of national power required to reconcile operational art to strategy.¹⁴⁰

Command and control of the RKKA was the other discontinuity of Soviet operational art. Erickson’s masterful *The Soviet High Command* gave the human toll of the Purges, which gutted the ranks of the RKKA and its senior political and directive bodies. The human toll included almost the entire senior leadership and over 30,000 of the intermediate ranks between captain and colonel.¹⁴¹ Stalin’s consolidation of power within the Communist Party and its subordinate committees entailed the elimination of any leadership rivals and the creation of a security apparatus that was, above all, politically reliable. In Erickson’s assessment, an independent,

¹⁴⁰ Tukhachevsky, “War As A Problem of Armed Struggle,” 102–124 passim. Isserson, *The Evolution of Operational Art*, 10–19.

¹⁴¹ Erickson, *The Soviet High Command*, 505.

nationalist RKKA was irreconcilable to Stalin's total control of the Soviet state.¹⁴² The aftermath of the Purges was a politically reliable, but militarily incompetent Soviet military, notwithstanding such leaders as Zhukov in the ranks. Although the RKKA rediscovered operational art in the crucible that was the Eastern Front from 1942-1945, its development was primarily evolutionary, rather than revolutionary, after the war. The Great Patriotic War was the proving ground for what had previously appeared in prewar deep operations theory.

The presence of political commissars was the Communist Party's insurance to prevent the RKKA, and later the Soviet Army, from becoming a counterrevolutionary force. When former Imperial General Staff officers comprised the bulk of the force, this fear of mutiny was a legitimate concern. After the Purges, the extermination of much of the RKKA's talent left a highly politicized organization, the remnants living in fear of arrest at the hands of the NKVD. So-called unitary command removed neither the political commissars (who became commanders instead) from the force structure, nor did it remove the NKVD's troops as a force for political orthodoxy.¹⁴³ The KGB, as inheritor of the NKVD's heritage and mission, retained a similar role after the war for the Soviet military.

The combination of a conscript force, centralized decision-making, and a command structure that was always subject to political oversight meant that *auftragstaktik* was more the exception rather than the norm. Healthy internal debate ran counter to the efforts of the political commissars to maintain the political orthodoxy of the force. The offensive philosophy underpinning the Soviet Field Service Regulations from PU-29 on required subordinate commanders to understand the higher commander's intent and exploit sometimes-fleeting

¹⁴² Ibid., 427–428–465.

¹⁴³ Roger R. Reese, *Red Commanders: A Social History of the Soviet Army Officer Corps, 1918-1991* (Lawrence: University Press of Kansas, 2005), 67–68, 118.

opportunities.¹⁴⁴ Such a philosophy required a high degree of initiative on the part of tactical and operational commanders to identify and act on those opportunities. The politicized officer corps left in the wake of the Purges exhibited little of that initiative until the rigors of combat forced nonperforming officers out of the way, either by promotion, removal, or death in battle. Integrating the political commissars into the command structure ensured the political orthodoxy of the force instead. The threat of sentencing officers to penal battalions or NKVD arrest was a reality for officers up to the end of the war.¹⁴⁵ Even at the end of the war, what might have sounded like a call for examination of the war could not include criticism of Stalin or his management of the Great Patriotic War, especially in its first two years.¹⁴⁶

The two great successes of Soviet operational art were from opposite strategic contexts. In the case of limited war, the campaign at Khalkhin-Gol was part of the skillful coordination of Soviet policy, strategy, and campaigning to terminate hostilities with the Japanese before the start of World War II. In the case of general war, the last two years of the Great Patriotic War were the hallmark of the total integration of strategic art, operational art, and tactics to destroy the *Wehrmacht* forces threatening the USSR and to compel the unconditional surrender of Nazi Germany. While the lessons of Khalkhin-Gol (and much of the campaign itself) were largely forgotten, the conduct of operational art in operations such as BAGRATION remained ingrained in Soviet military thought as the RKKA's pinnacle of movement, maneuver, fires, and deception. Much of the success of the RKKA in those two years stemmed from the unified strategic action to accomplish Stalin's policy objectives. That unified action came through the *Stavka*, which

¹⁴⁴ Joint Publications Research Service, *PU-29*, 1, 4, 7–8. Joint Publications Research Service, *PU-36*, 2, 37. Joint Publications Research Service, *PU-44*, 10–11.

¹⁴⁵ David M. Glantz, *Companion to Colossus Reborn: Key Documents and Statistics* (Lawrence: University Press of Kansas, 2005), 3–6, 15–16, 22–24, 27. The experiences of one individual's experience under arrest appears in Aleksandr Isaevich Solzhenitsyn, *The Gulag Archipelago, 1918-1956: an experiment in literary investigation* (New York: Harper & Row, 1974).

¹⁴⁶ Andrei Afanas'evich Kokoshin, *Soviet Strategic Thought, 1917-91* (Cambridge, Mass.: MIT Press, 1998), 169.

provided strategic direction and guidance to orient the deep maneuver at the *front* and armies.

The tactical aspect of this unified action was the coordinated maneuver of tactical forces at corps, division, and below to annihilate German forces defending the approaches to Berlin.

The development of Soviet operational art represents a body of military intellectual development largely unmatched in Western military thought. Operational art emerged from existing trends in warfare, but bore fruit in the RKKA's unique circumstances during and after the Russian Civil War. The result of that experience was a revolutionary change in how the Soviet military viewed the conduct of military operations. Operational art and its expression through deep operations became a keystone of Soviet military thought, in spite of Stalin's liquidation of many of its theorists and suppression of their professional military literature. The legacy of Varfolomeev, Svechin, Tukhachevsky, Triandafillov, and other military specialists lived on far beyond their lifespans through survivors like Isserson but also through Zhukov and other students. Victory in the Great Patriotic War was based on deep operations theory, the last form of which was Danilevich's strategy in the 1980s. At its best, Soviet operational art was an intellectually consistent body of knowledge that was, at its outset, informed by its political ideology, became consistent with its military strategy, and provided a framework for tactical action. The potential for decisive victory coordinated by the unified action of a *Stavka* providing authoritative policy direction to all of its instruments of national power, along with the structure of the TVDs to translate that policy guidance to strategy for implementation by *fronts* through operational art was devastatingly effective, especially at the end of the Great Patriotic War.

However, the bifurcation of Soviet military-technical doctrine from political doctrine was virtually inevitable after Stalin's consolidation of power and the subsequent relationships of the Soviet military to its political masters. This implication of this divide, given Rice's assessment

of the split, was that strategic art in Soviet practice was inherently flawed. After the Great Patriotic War, operational art's full expression of the offensive military strategy of the Soviet military was mismatched to the policy aims of the Soviet senior leadership and its other instruments of national power, as was evident in the changes in Sokolovsky's strategy treatise. Soviet operational art was also dependent on a style of tactical execution that was antithetical to the highly politicized culture and structure of the Soviet military.

Nonetheless, the ever-present possibility of a Soviet military offensive in Western Europe unified the West and its military affairs after World War II. The threat posed by the Warsaw Pact and its military forces provided a focal point for the efforts of the United States, in conjunction with its allies, to develop its own approach to operational art. Largely without the intellectual rigor that characterized the Soviet approach, the West approached modern warfare through a tactical myopia that took years to correct.

Chapter 3

The Rediscovery of Tactics and Strategy in the Post-Vietnam U.S. Army

...the Army faces serious problems of manpower, morale, strategy and leadership. It has entered a period of searching inquiry, of readjustment and redirection. This time can become one of renaissance, as well, if we combine the best thoughts and efforts of us all. Now more than ever before it is essential that the members of our profession share their ideas, not only with each other, but also with the larger community whose stake in the Army is no less important than our own.

Major General John J. Hennessey,
Commandant, U.S. Army Command and General Staff College, 1972¹

The Soviet Union emerged from the 1960s a more dangerous threat than it had ever posed. Armed with a new generation of tanks, artillery, infantry fighting vehicles, combat aircraft, and nuclear-armed ballistic missiles, the U.S.S.R. added a qualitative threat to its former quantitative advantages over the West. Having moved away from an overwhelming reliance on nuclear weapons to a more balanced conventional force capability, the Soviets were also well on their way to revitalizing the quality of their conventional forces.

In comparison, the U.S. Army emerged from the Vietnam War bereft of its institutional identity. The veterans of that conflict who stayed in the Army through general officer rank were the agents of future reform, an account told in popular histories such as James Kitfield's *Prodigal Soldiers* and Al Santoli's *Leading the Way*. However, the institutional framework for that reform did not originate from the grassroots level. The revitalization of American military thought that started in the 1970s came from above, as the Army's senior leadership sought immediately to redirect the institution away from its strategic defeat in Vietnam, back to a mission in Europe far more traditional in scope.

¹ MG John J. Hennessey, "A Look Ahead," *Military Review* LII, no. 2 (February 1972): 1.

That redirection manifested itself in the Army's reexamination of tactics and strategy, providing the foundations not only for changes in the forces themselves, but also in the culture and intellectual foundations for those forces and their employment. However, these examinations of tactics and strategy occurred separately, sometimes even in conflict with each other. Although much of the Army readily grasped the import of changes in the rhetoric and practice of tactics, the equally important revival of strategy received far less attention. The legacy of the changes in the 1970s Army persist to this day, a testament to their foundational importance. Those changes included not only a revitalized role for doctrine, but the necessity of a fully-professionalized institution, one that complemented the newly created All-Volunteer Force of 1973. However, the prospect of a fully-professionalized institution seemed remote indeed in the Army's cultural and institutional malaise after the Vietnam War.

The U.S. Army's cultural and institutional inheritance in 1973

The U.S. Army emerged from Vietnam looking ostensibly capable but was in reality a shattered institution. Internecine budgetary competition among the armed services, combined with rapid changes in technology and changing views of the nature of war in the 1950s, resulted in a so-called "New Look" Army unsure of its primary role.² President John F. Kennedy's emphasis on counterinsurgency, combined with the transition of strategy from Mutual Assured Destruction to Flexible Response, did little to help the institutional confusion.³ The Army spent

² LTC Andrew J. Bacevich, *The Pentomic Era: The U.S. Army Between Korea and Vietnam* (Washington, D.C.: National Defense University Press, 1986), 3–4. Matthew B. Ridgway, Army Chief of Staff from 1953-1955, commented on his experiences with the "New Look" Army in *Soldier: The Memoirs of Matthew B. Ridgway* (New York: Harper, 1956). Another account of the period appears in MAJ Robert A. Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-76* (Fort Leavenworth, KS: Combat Studies Institute, US Army Command and General Staff College, 1979).

³ Adrian R. Lewis, *The American Culture of War: The History of U.S. Military Force from World War II to Operation Iraqi Freedom* (New York: Routledge, 2007), 220, 224–227. Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-76*, 26–27.

the 1960s attempting to reorganize from its ill-fated Pentomic structure; however, no energy was devoted to clarifying its roles under Flexible Response. The result was a void in the Army's thinking about strategy.

One contributor to the absence of strategic thinking was the Army's traditional method of professional military education. Until the 20th century, the Army's professional military education was limited to the United States Military Academy and emphasized "military art and science" over study of true strategy or policy. To a large degree, this focus occurred because of the control the Army Corps of Engineers held over the curriculum of West Point. Historian Brian McAllister Linn has noted that the Mexican War skewed this relationship as regulars distrusted the military skills and professionalism of the citizen-soldiers who fought in that war.⁴ Although the Civil War marked a national mobilization on both sides, the forces raised were dominated by citizen-soldiers who expected to stop soldiering at the end of the war, and for the most part did so.

The first impetus for reforming professional military education was the Spanish-American War. The extraordinary bravery of the soldiers and volunteers who fought in Cuba could not surmount the near-criminal negligence in those forces' organization, deployment, and logistics, nor could it compensate fully for the gross failures in the tactics employed by American forces.⁵ The Army, in the meantime, closed almost all of its schools during the war. After the war, Secretary of War Elihu Root directed the creation of a general staff system, five service schools (Artillery, Engineer, Submarine Defense, Cavalry and Field Artillery, and Medical), a General Staff and Service College at Fort Leavenworth, Kansas, and the Army War College (USAWC) at Washington, D.C., with the overall objective of improving the professional training

⁴ Brian McAllister Linn, *The Echo of Battle: The Army's Way of War* (Cambridge, Mass.: Harvard University Press, 2007), 21.

⁵ *Ibid.*, 102.

for Army officers.⁶ The closure of the Army's schools (less West Point) during major wars continued through World War I and World War II.⁷ Those closures were a deliberate decision to expend the intellectual seed corn of the institution on the immediate personnel needs during the wars. The assumption of sufficient time to conduct full mobilization to win a general war remained a constant element of American military thought through the end of World War II.

The outset of the Korean War illustrated the hazards of that approach when U.S. Army occupation forces in Japan deployed to Korea in 1950 and barely survived the initial North Korean onslaught. At the same time, the Soviet fielding of nuclear weapons in 1949 meant that a general war would end before full national mobilization could be achieved. After the war, General Matthew B. Ridgway, Chief of Staff of the Army (CSA), fought hard against cuts in Army force structure and missions, arguing that true deterrence could only be achieved through both conventional and nuclear means. Ridgway saw mobilization as the fatal flaw in deterring the Soviet threat, given that military and economic mobilization could not generate the forces required to counter a Soviet attack before the war ended. Harnessing the industrial potential of the United States to achieve victory required years during World War II, a luxury that Ridgway did not expect in a war against the Soviet Union.⁸ However, the strategy outlined in 1953 in National Security Council Document 162/2 hamstrung the Army by vesting nuclear weapons as the primary means of deterrence, while the NSC envisaged primarily covert means to offset increasing Soviet nuclear strength, rather than using conventional forces such as the Army.⁹

⁶ Richard W. Stewart, ed., *American Military History: The United States Army and the Forging of a Nation, 1775–1917*, vol. 1 (Washington, D.C.: U.S. Army Center of Military History, 2009), 375–377.

⁷ Deputy Chief of Staff for Personnel, "Report of the Department of the Army Board to Review Army Officer Schools. Volume 2. Description of Current Educational and Training Systems" (Headquarters, Department of the Army, 1966), 217–218.

⁸ Ingo Trauschweizer, *The Cold War U.S. Army: Building Deterrence for Limited War* (Lawrence, Kan.: University Press of Kansas, 2008), 34.

⁹ Bacevich, *The Pentomic Era*, 15.

The Army's sought to reshape itself in the Cold War around technology and methods. Andrew Bacevich, in *The Pentomic Era*, argues that the Army chased technological solutions such as tactical nuclear weapons, intermediate range ballistic missiles, and continental air defense in a futile attempt at retaining a perceived fair share of the defense budget. What was missing from those efforts was a coherent strategic concept to drive its force development, doctrine, and activities.¹⁰ The introduction of Flexible Response also saw the Reorganization Objective Army Division (ROAD), a force structure reminiscent of the World War II armored division that integrated Cold War-era equipment. The ROAD structure was concurrent with President John F. Kennedy's advocacy of counterinsurgency, another abrupt shift away from tactical nuclear warfare or conventionally-equipped large-unit operations.¹¹ The pursuit of technology or methods alone without a valid strategic concept was intellectually bankrupt.

The Vietnam War was the catalyst to the intellectual and physical gutting of the U.S. Army through the 1960s. A pivotal reason was President Lyndon B. Johnson's decision to fight in Vietnam without a call-up of the Reserve Component, a decision intended to protect Johnson's Great Society programs from defeat in Congress.¹² Instead of employing the National Guard and Army Reserve in its role as a strategic reserve, the Army had to assume tremendous strategic and operational risk by hollowing out units elsewhere to fill requirements in Vietnam. The Army

¹⁰ Ibid., 151–153.

¹¹ Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-76*, 21–29.

¹² H. R. McMaster, *Dereliction of Duty: Lyndon Johnson, Robert McNamara, the Joint Chiefs of Staff, and the Lies that Led to Vietnam* (New York: HarperCollins, 1997), 312. The Reserve Component of the Army refers collectively to the Army National Guard and the Army Reserve. The total commitment from the Army National Guard was 12,234 Army National Guardsmen in twenty units from seventeen states, of which approximately 7,000 personnel and eight units served in Vietnam. Mort Künstler and U.S. Army Center of Military History, "Indiana Rangers: The Army Guard in Vietnam," *National Guard Heritage Series*, 1984, <http://www.history.army.mil/art/225/INRGRS.htm> (accessed November 4, 2011).

was effectively incapable of manning, training, and equipping itself as a functional force when its forces departed Vietnam in 1973.¹³

The Army had 801,015 soldiers on active duty as it transitioned to the All-Volunteer Force at the end of 1973.¹⁴ However, the quality of the soldiers in the ranks had decreased precipitously. Breakdowns of discipline in Vietnam manifested itself in rising drug use, as well as some troops killing their own leaders. The erosion of discipline in the ranks coincided with Project 100,000, a Great Society program running from 1966 to 1971 that inducted physically or mentally unqualified individuals into the military.¹⁵ As could be expected, recruiting standards dropped. By 1973, some 40% of the Army's soldiers were not even high school graduates. In Europe, there were numerous racial incidents, gang violence among soldiers, and drug use in the force, causing some officers to perform their staff duty checks with loaded weapons.¹⁶

The cultural effects on the force were equally deleterious. Much of the officer corps fundamentally did not trust its senior army leadership. The perceived breach of faith in the ranks stemmed from a series of five "reduction in force" boards, shattering morale in an officer corps already worn down from its Vietnam experience. In one example, an infantry officer commissioned in 1966 described the remnants of the 163 graduates of his officer basic course class by the 1970s. Half of them died during the Tet Offensive and two-third of the survivors

¹³ Richard Lock-Pullan, *US Intervention Policy and Army Innovation: from Vietnam to Iraq* (New York: Routledge, 2006), 53–54. For the inconsistent readiness of U.S. forces in Korea from 1966-1969, see MAJ Daniel P. Bolger, *Scenes from an Unfinished War: Low-Intensity Conflict in Korea, 1966-1969*. (Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command & General Staff College, 1991), 25–30.

¹⁴ William Gardner Bell and Karl E. Cocke, eds., *Department of the Army Historical Summary for Fiscal Year 1973*. (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1977), 59.

¹⁵ I. M. Greenberg, "Project 100,000: The Training of Former Rejectees," *The Phi Delta Kappan* 50, no. 10 (June 1, 1969): 570–574. An official memorandum describing the program can be found at I. M. Greenberg, "Project 100,000: New Standards Program" (U.S. Department of Defense, n.d.), <http://www.rand.org/pubs/monographs/MG265/images/webG1318.pdf> (accessed November 5, 2011).

¹⁶ One story told to the author from a veteran of the period was of an officer in the mid-1970s who, after discovering a soldier smoking marijuana in the barracks at Fort Hood, Texas, was murdered by being put into a wall locker and being thrown out a second-story barracks window. He survived the first attempt, but not the second.

were purged in the boards convened after the U.S. withdrawal.¹⁷ In 1970, the CSA, General William Westmoreland, directed that the U.S. Army War College conduct a study on the prevailing culture within the Army's officer corps. The resulting work, *Study on Military Professionalism*, portrayed an Army officer corps' professional ethic so damaged that Westmoreland directed the report be restricted as "For Official Use Only" and "close hold."¹⁸

The *Study on Military Professionalism* was but one signal of malaise. A scorching depiction of the widespread disillusionment in the ranks was Lieutenant Colonel John H. Moellering's article, "Future Civil-Military Relations: The Army Turns Inward?," which appeared in the July 1973 edition of *Military Review*, the official journal of the U.S. Army Command and General Staff College (CGSC) at Fort Leavenworth.¹⁹ Moellering's article provided empirical data to back his findings, a powerful support for the anecdotal evidence apparent all over the force. Westmoreland himself was booted off the stage at the Infantry Officer Advanced Course in 1972 after announcing that he would remove "the scum from the officer corps," a comparatively tame response compared to the heckling he received from majors attending CGSC later that year. The bitterness was slow to abate. Another major attending CGSC in 1977 vented his frustrations, saying "Goddamn this army anyway. We ought to abolish it and start one of our own."²⁰

¹⁷ Roger J. Spiller, "In the Shadow of the Dragon: Doctrine and the U.S. Army after Vietnam," in *In the School of War* (Lincoln: University of Nebraska Press, 2010), 226.

¹⁸ An account of the official presentation of the report to Westmoreland and his staff appears in James Kitfield, *Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War* (Washington, D.C.: Brassey's, 1997), 107–113. The "For Official Use Only" caveat was removed on June 30, 1973 after Westmoreland's retirement. U.S. Army War College, *Study on Military Professionalism* (Carlisle Barracks, Pa.: U.S. Army War College, 1970).

¹⁹ LTC John H. Moellering, "Future Civil Military Relations: The Army Turns Inward?," *Military Review* LIII, no. 7 (July 1973): 68–83. An overview of the literature on military professionalism of the period appears in Sam C. Sarkesian, "An Empirical Reassessment of Military Professionalism," *Military Review* LVII, no. 8 (August 1977): 3–20.

²⁰ Spiller, "In the Shadow of the Dragon: Doctrine and the U.S. Army after Vietnam," 227. A detailed study from an eyewitness to the recruitment and retention of personnel during that period appears in Bernard Rostker, *I Want You!: The Evolution of the All-Volunteer Force* (Santa Monica, CA: RAND, 2006).

The readiness of the Army's training and equipment for its assigned missions was also a hollow shell. The Army Training Program, the model for training from 1918 until 1975, had remained largely unchanged during that time. Rather than vetting actual learning, units cycled their personnel through predetermined schedules. The training itself relied heavily on rote learning, with the underlying assumption that completion of all training tasks in the assigned time delivered a fully-trained unit. There was no useful assessment of actual learning.²¹

The training base, oriented on a European mechanized land war, was not provided the resources, equipment, or expertise to train large numbers of soldiers for light infantry operations in Southeast Asia.²² Although some commanders such as Major General William E. DePuy, commanding the 1st Infantry Division in Vietnam, mandated training tactics, techniques, and procedures for new replacements in theater, such practice was by no means universal.²³ Many commanders faced the unenviable prospect of integrating untrained replacements with the goal of enabling them to learn long enough to survive.²⁴

The actual ranks of the Army were as hollow as their equipment and training. President Johnson's refusal to mobilize more than a token of the Reserve Component resulted in the commitment of most of the Active Component strategic reserve to meet requirements in Vietnam. U.S. Army Europe (USAREUR), rather than being a force-in-readiness, became a pool for manpower and equipment in the 1960s, losing so many enlisted men and officers that most combat battalions fell below 75 percent of their authorized levels of organization for both

²¹ William E. DePuy, Romie L. Brownlee, and William J. Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired* (Carlisle Barracks, Pa.; Washington, D.C.: U.S. Military History Institute ; U.S. Army Center of Military History, 1988), 202. BG Robert H. Scales, LTC Terry L. Johnson, and MAJ Thomas P. Odom, *Certain Victory: The United States Army in the Gulf War* (Washington, D.C.: G.P.O., 1993), 12.

²² Bruce Palmer, *The 25-Year War: America's Military Role in Vietnam* (Lexington, Ky.: University Press of Kentucky, 1984), 171.

²³ Henry G. Gole, *General William E. DePuy: Preparing the Army for Modern War* (Lexington: University Press of Kentucky, 2008), 182–183.

²⁴ Bradley Dean Helton, "Revolving-Door War: Former Commanders Reflect on the Impact of the Twelve-Month Tour upon Their Companies in Vietnam" (Thesis, Raleigh: North Carolina State University, 2004), 29–33.

manpower and equipment. Particularly painful for USAREUR was the loss of strength in combat support and logistics forces, effectively hobbling the combat units that were left. The loss of those support forces was even more keenly felt there since the preponderance of forces in Europe were mechanized and thus heavily reliant on the supply and maintenance functions that those units provided.²⁵

The actual equipment fielded to U.S. forces in Europe represented yet another deficiency. Of the major weapons systems that had been fielded to the U.S. Army, the only successful new system that came into service during the Vietnam period was the AH-1 Cobra attack helicopter, an adaptation of the 1950s UH-1 Iroquois assault helicopter. Attempts at developing new systems saw little success, delivering stillborn products such as the M551 Sheridan armored reconnaissance/airborne assault vehicle, the M60A2 tank, and the M114 armored reconnaissance vehicle, or outright failures such as the MBT-70 tank program.²⁶ In comparison, the Soviets fielded several systems during the period that produced no small anxiety on the part of observers in the West. Of them, the BMP-1 infantry fighting vehicle, T-64 and T-72 main battle tanks, Mi-24 attack helicopter, and manifested qualitative superiorities over their Western counterparts.²⁷

The Vietnam War exacerbated deficiencies in manning, training, and equipping forces in Europe. Undermanned and underequipped units in Germany, suffering from a myriad of personnel, maintenance, and organizational problems, were at best a paper deterrent to a Soviet

²⁵ Trauschweizer, *The Cold War U.S. Army: Building Deterrence for Limited War*, 180–182.

²⁶ Oscar C. Decker, “The Patton Tanks: The Cold War Learning Series,” in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington, Ky.: University Press of Kentucky, 1999), 311–314. Lewis Sorley, “Adaptation and Impact: Mounted Combat in Vietnam,” in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington, Ky.: University Press of Kentucky, 1999), 332–334.

²⁷ Diane L. Urbina, “‘Lethal beyond all expectations’: The Bradley Fighting Vehicle,” in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington, Ky.: University Press of Kentucky, 1999), 407. Robert J. Sunell, “The Abrams Tank System,” in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington, Ky.: University Press of Kentucky, 1999), 434–435.

invasion of Western Europe. In the words of General Bruce Palmer, Jr., who served as Vice Chief of Staff (VCSA) of the Army under Westmoreland, “The proud, well-trained, and combat-ready Seventh Army in Germany was in effect, over time, destroyed as a fighting force.”²⁸ The instrument to reverse the evisceration of the Army, however, came from an unexpected direction.

The doctrinal inheritance of the post-Vietnam Army: Field Manual 100-5

The master blueprint governing how U.S. Army forces were supposed to operate in combat was Field Manual (FM) 100-5. From its origins in the old Army Field Service Regulations, FM 100-5, a so-called “capstone manual” at the top of the hierarchy of doctrine, was intended to provide context and guidance for subordinate doctrine. Although some of its editions spanned strategy, not all did. More often than not, it was a prescriptive guide for the principles governing how the Army as a whole would fight.

First published in 1939, FM 100-5, titled “Field Service Regulations,” reflected the influence of Carl von Clausewitz’s *On War* on the Army General Staff.²⁹ The 1939 edition formally defined the conduct of war as “the art of employing the armed forces of a nation in combination with measures of economic and political constraint for the purpose of effecting a satisfactory peace.” This definition set a precedent in recognizing a military objective necessary for war termination, specifically the destruction of the enemy’s armed forces in battle, but also other instruments of national power necessary to achieve a “national aim” of peace. Other Clausewitzian influences included acknowledgments of friction and chance in combat, as well as the attainment of objectives supporting a strategic end. Such supporting objectives were a tacit

²⁸ Palmer, *The 25-Year War: America’s Military Role in Vietnam*, 94.

²⁹ Walter E. Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence: University Press of Kansas, 2011), 144.

acknowledgment that a single decisive battle could not bring about victory in war.³⁰ The prewar curriculum at the Army War College reinforced the practical aspects of campaigning by using actual war plans as case studies. Student work on those plans provided relevant preparation for the problems USAWC graduates faced in the Pacific and in Europe during World War II, paving the way for future wartime success.³¹

However, the 1939 edition of FM 100-5 was never the capstone document it was intended to be. Field commanders and their subordinates favored doctrine favoring their branches of service, and in doing so, ignored the guidance in the 1939 FM 100-5.³² The branches, most significantly Infantry and Cavalry Branches, had grown accustomed during the interwar period to setting their own doctrinal direction independent of any central direction from the Army General Staff.³³ The 1939 edition went beyond its nominal role as a set of regulations for managing and employing forces, for it articulated some of what the U.S. Department of Defense now terms as “elements of operational design,” tools intended to help commanders and their staffs visualize and describe the conduct of military operations.³⁴

The 1941 manual expanded on the 1939 manual’s emphasis on combined arms doctrine to include sections on armored, parachute, and aviation forces. The manual itself also included discussions of culmination, operations in urban areas, mountains, snow, jungle, deserts, and with

³⁰ Department of the Army, *Field Manual 100-5, Tentative Field Service Regulations: Operations* (Washington, D.C.: G.P.O., 1939), 27. Carl von Clausewitz, *On War*, trans. Michael Howard and Peter. Paret (Princeton, N.J.: Princeton University Press, 1984), 86–90, 227–229.

³¹ Michael R. Matheny, *Carrying the War to the Enemy: American Operational Art to 1945* (Norman: University of Oklahoma Press, 2011), 78–88.

³² Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror*, 147.

³³ The most bitter example of this independence was the development of armored forces under Brigadier General Adna R. Chaffee, raising the ire of Major General John K. Herr, Chief of Cavalry. Herr fought mechanization of the Cavalry until retirement. Robert Stewart Cameron, *Mobility, Shock, and Firepower: The Emergence of the U.S. Army’s Armor Branch, 1917-1945* (Washington, D.C.: U.S. Army Center of Military History, 2008), 257.

³⁴ Department of the Army, *FM 100-5 (1939)*, 5–26, 27, 128–130, 163–170. Joint Chiefs of Staff, *Joint Publication 3-0, Joint Operations* (Washington, D.C.: G.P.O., 2011), II–4–II–5. Kretchik attributes the origins of elements of operational design to the 1941 edition, but some of the elements are apparent as early as the 1939 manual.

partisans.³⁵ The 1941 edition represented the best available thought on combined arms warfare and remains a classic – to the point where CGSC reprinted the manual in 1992 as an exemplar of what doctrine should look like. In short, it was the formative combined arms doctrine for the conduct of American land campaigns during World War II. A 1944 revision reflected little significant conceptual change, other than an expansion of the roles of airborne forces and the Army Air Forces as well as further scrutiny on the conduct of amphibious operations. Written on the eve of the invasion of Normandy, the 1944 edition of FM 100-5 reflected a deliberate preparation for anticipated events in Europe and in the Pacific, built upon the foundation provided by the 1941 edition.³⁶

The first revision of FM 100-5 for the Cold War appeared in 1949. The manual made allusions to nuclear weapons without specifying them, since the Army did not at the time have nuclear weapons in its arsenal.³⁷ It was the first to include as part of its text the U.S. Army's Principles of War, an adaptation of the principles of war given in J.F.C. Fuller's 1926 anthology *Foundations of the Science of War*.³⁸ The 1949 manual it continued the functional focus of the World War II-era manuals for combat operations, focusing on tactical considerations. The Principles of War replaced the exploration of strategy in the 1939 manual.

The political discussion missing from the 1949 FM 100-5 reappeared in the 1954 edition. Another addition to the manual was a discussion on limited wars, an outgrowth of experience in

³⁵ Department of the Army, *Field Manual 100-5, Field Service Regulations: Operations* (Washington, D.C.: G.P.O., 1941), 97–160, 182–253 passim.

³⁶ Department of the Army, *Field Manual 100-5, Field Service Regulations: Operations* (Washington, D.C.: G.P.O., 1944). Chapter 3 covers the expanded discussion of air forces, while amphibious and airborne forces appear in Chapters 13 and 14.

³⁷ Department of the Army, *Field Manual 100-5, Field Service Regulations: Operations* (Washington, D.C.: G.P.O., 1949), v–vi.

³⁸ J. F. C. Fuller, *The Foundations of the Science of War* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College Press, 1993), 16. Department of the Army, *FM 100-5 (1949)*, 21–23.

Korea.³⁹ By that time, the Army had fielded tactical nuclear weapons such as the 280mm nuclear artillery shell and the Honest John unguided nuclear rocket. However, the Army's intellectual direction remained conservative, retaining a tactical focus on the offense to destroy enemy land forces in a general war. Nuclear weapons were considered merely a more powerful type of artillery.⁴⁰ The 1954 manual saw two incremental changes in 1956 and 1958 to accommodate the Pentomic divisional structure and its planned integrated employment of both conventional and tactical nuclear weapons.⁴¹ The failure of the Pentomic Division and the infeasibility of its doctrine led to a reversion to the ROAD division.⁴²

The 1962 edition of FM 100-5 expanded on the discussion of strategy in the 1954 edition, providing the first substantial treatment of strategy in the history of the manual. The entire first chapter provided context for the conduct of military operations, and reflected the influence of Joint Chiefs of Staff (JCS) directives and the USAWC curriculum.⁴³ The manual was the first to address the involvement of joint, interagency, and multinational forces, and included discussions of warfare against irregular forces, consistent with Kennedy's policy direction at the time. Nonetheless, the manual was oriented primarily on the prospect of war in Western Europe, a trend that continued in the 1968 edition of the manual.

The 1968 FM 100-5, retitled *Operations of Army Forces in the Field*, was the first to include compliance with North Atlantic Treaty Organization (NATO) standardization agreements (STANAGs), an explicit acknowledgement of its European focus.⁴⁴ What was

³⁹ Department of the Army, *Field Manual 100-5, Field Service Regulations: Operations* (Washington, D.C.: G.P.O., 1954), 6–7.

⁴⁰ *Ibid.*, 6–8.

⁴¹ Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror*, 173.

⁴² Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-76*, 21–22.

⁴³ Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror*, 180.

⁴⁴ Department of the Army, *Field Manual 100-5, Operations of Army Forces in the Field* (Washington, D.C.: G.P.O., 1968), 1–1. Other agreements included Southeast Asia Treaty Organization Standardization

largely absent from the manual was doctrine relevant to Vietnam; what little was present was almost desultory in its treatment.⁴⁵ The 1968 edition of FM 100-5, unlike its predecessors, is curiously absent from the discussion of Vietnam in Robert A. Doughty's monograph *The Evolution of US Army Tactical Doctrine, 1946-1976*.⁴⁶ Walter Kretchik, in a study of U.S. Army doctrine, argued that the manual was intended to reassure NATO allies in Europe, even as the U.S. Army gutted its forces there for requirements in Vietnam.⁴⁷ The guidance in the 1968 edition was so general that it was a capstone doctrine in name only.

The ambiguity that had appeared in FM 100-5 left wide latitude to the various branches to pursue their own doctrines. It was also symptomatic of a long bias towards tactics in the U.S. Army, a consequence of the cultural divisions of the Army along branch lines. Such divisions reflected the parochialism that had long existed inside each of the branches, rather than the broader combined arms perspective required for operational art. The greatest cultural divide existed between Armor Branch, which focused on mechanized warfare in Europe, and Infantry Branch, which had focused on doctrine for light dismounted units in Vietnam.⁴⁸

Reframing tactics for a post-Vietnam Army: The 1976 edition of FM 100-5

Rebuilding the Army in the wake of Vietnam was the primary concern of General Creighton W. Abrams, the CSA in office at the end of Vietnam.⁴⁹ One component of that process was the reform of tactical doctrine, the vanguard of which was the 1976 edition of FM 100-5. Under the direction of DePuy, who had been promoted to general in 1973 as first

Agreements (SEASTAGs) and American, British, Canadian, and Australian Standardization of Operations and Procedures (SOLOGs).

⁴⁵ *Ibid.*, 6–25–6–29.

⁴⁶ Doughty, *The Evolution of U.S. Army Tactical Doctrine, 1946-76*, 29–40.

⁴⁷ Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror*, 190–191.

⁴⁸ Spiller, interview, November 28, 2011.

⁴⁹ Lewis Sorley, *Thunderbolt: General Creighton Abrams and the Army of his Times* (New York: Simon & Schuster, 1992), 335.

commander of the newly-organized U.S. Army Training and Doctrine Command (TRADOC), FM 100-5 was written to revolutionize theory and practice at the tactical level of war in the U.S. Army. Not surprisingly, that aim led to difficulties. The imposition of the 1976 edition of FM 100-5 on the Army generated a backlash against the manual itself. However, to call the manual a failure overlooked its lasting legacy in the Army's overall doctrine, its training, and the changes in the Army's institutional culture that gradually emerged.

DePuy laid out an ambitious agenda for the 1976 edition in a talking paper to General Fred Weyand, the Army's Chief of Staff following Abrams's death in office. DePuy envisioned far more than a "cookbook" that described how the Army was supposed to fight. DePuy wanted to establish a capstone manual to serve as the basis for all other statements of doctrine. He sought to provide a simple, readily-understood method for all ranks from private to general by which US Army forces would fight in support of NATO. The talking paper that accompanied the new manual to the CSA was clear: "In a sense, this manual takes the Army out of the rice paddies of Vietnam and places it on the Western European battlefield against the Warsaw Pact. The manual is not exclusively directed toward NATO, as it comments on other types of operations and other contingencies."⁵⁰ The denial of exclusive focus on NATO was eyewash to mollify the light infantry community, for which little in FM 100-5 directly applied. In reality, FM 100-5 focused Army doctrine almost exclusively on the defense of Western Europe, advocating a style of warfare in which the Army had little recent practical experience.

The manual incorporated observations from the 1973 Yom Kippur War, most significantly the lethality of the modern battlefield, as well as the roles of weapons and tactical

⁵⁰ "Talking Paper on Field Manual 100-5, Operations" (U.S. Army Training and Doctrine Command, 1976), FM 100-5 folder, Box 17, William E. DePuy Papers, U.S. Army Military History Institute.

organizations in modern armored combat.⁵¹ The manual emphasized the lethality, range, and capabilities of various weapons systems, informed by professional collaboration with the Israeli Defense Force.

DePuy envisaged a central role for doctrine in combat developments and acquisition, stating that “FM 100-5 has been designed to cover the period when the next generation of modern weapons will be absorbed into the Army.”⁵² The weapons systems that the Army developed in support of the doctrine set forth in FM 100-5 were the so-called “Big Five,” all of which remain in front-line service some forty years after their development. Other innovations included the Pershing II intermediate range ballistic missile and the general support rocket system, which was the precursor to the modern-day Multiple Launch Rocket System (MLRS).⁵³

DePuy’s framework on doctrine and training for combat derived from his experience as a battalion commander and regimental operations officer in the 90th Infantry Division, which in his recollection “was a killing machine – of our own troops!”⁵⁴ DePuy recognized the unenviable task of reforming an Army in transition from a conscript force dependent on rapid expansion to an all-volunteer force sized to prevail in a “come as you are” war.

Professionalizing the Army in the 1970s also coincided with the beginnings of the All-Volunteer Force. DePuy, as proponent of the Army’s institutions for training and education, confronted a military establishment that tacitly assumed that it would fight a general war using a

⁵¹ DePuy, Brownlee, and Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired*, 191.

⁵² “FM 100-5 Talking Paper.”

⁵³ The Big Five systems were the M1 Abrams main battle tank, M2 Bradley infantry fighting vehicle, the UH-60 Blackhawk assault helicopter, the AH-64 Apache attack helicopter, and the Patriot air defense missile. John L. Romjue, Susan Canedy, and Anne W. Chapman, *Prepare the Army for War: A Historical Overview of the Army Training and Doctrine Command, 1973-1993* (Fort Monroe, Va.: Office of the Command Historian, United States Army Training and Doctrine Command, 1993), 44–46.

⁵⁴ DePuy, Brownlee, and Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired*, 202.

mass mobilization similar to that of World War II.⁵⁵ Expanding a small Regular Army with conscripts at the outset of a general war was still the underlying model. Informed by his observations of the tremendous attrition both the Israelis and Arabs experienced in the Yom Kippur War, DePuy came to accept that modern combat was so lethal that the entire U.S. Army, including the Reserve Component, had to be a force-in-readiness.

DePuy recognized that the timelines for what he called a “mobilization army” would not work for an army that was intended to fight upon notification. Reinstatement of the draft in the 1970s was politically unlikely unless a general war of national survival was imminent – in which case mobilization would finish too late to matter. DePuy was emphatic that “we don't have a Mobilization Army; we have an 800,000 man Army! That's what we are going to war with. Why should we go to war with untrained platoon leaders, untrained company commanders, and untrained battalion commanders, when they have to win the first battle?”⁵⁶ DePuy sought to prepare soldiers for the duties commensurate to their rank at the time, not to wartime promotion one or two echelons above their peacetime responsibilities. The only strategic mobilization for a general war that could occur remotely in time was through activation of the Army National Guard and Army Reserve. Those forces could not afford the luxury of a protracted mobilization period either and also had to be trained adequately before the start of the war. Such a view of training the Reserve Component also tied in with Abrams’ system of National Guard roundout brigades in each of the divisions.⁵⁷

⁵⁵ MAJ Paul H. Herbert, *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* (Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command & General Staff College, 1988), 26.

⁵⁶ DePuy, Brownlee, and Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired*, 183.

⁵⁷ Sorley, *Thunderbolt*, 364. Abrams envisaged the roundout brigades third brigade in a three-brigade Regular Army division. Those roundout brigades were maintained at a higher readiness than other National Guard combat brigades.

The scope of TRADOC's responsibilities did not stop solely at doctrine. One of the functions DePuy's new command inherited was combat developments, or the identification of requirements for future weapons systems. Although each of the branch schools had responsibility for identifying requirements for their own programs, overall oversight of the process belonged to TRADOC. DePuy, ever the pragmatist, was far more interested in replacements for the already-obsolescent M60 tank, the M113 armored personnel carrier, and the Chaparral air defense system than anything ten years distant or beyond.⁵⁸

The other major element of TRADOC's responsibilities was training. DePuy and Brigadier General Paul F. Gorman, TRADOC Deputy Chief of Staff for Training, sought to jettison the old Army Training Program for a much more rigorous process that actually prepared soldiers to assume their responsibilities. Rather than performing to time, Gorman's Army Training and Evaluation Program (ARTEP) measured organizations against an established standard and outlined corrective actions in those standards were not met. The Skill Qualification Test (SQT) did the same for individual soldiers.⁵⁹

Those training initiatives—introduced through the mid-1970s—were necessary precursors to Gorman's concept of a Combined Arms Training Center. Gorman's inspiration was the U.S. Air Force's RED FLAG program at Nellis Air Force Base, Nevada, which trained Air Force fighter and attack aircraft in air-to-air and air-to-ground combat operations. That initiative eventually bore fruit in 1982 as the National Training Center at Fort Irwin, California.⁶⁰

⁵⁸ DePuy, Brownlee, and Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired*, 181–182.

⁵⁹ Anne W. Chapman, *The Army's Training Revolution, 1973-1990: An Overview* (Fort Monroe, Va.: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1991), 3–7.

⁶⁰ MG Paul F. Gorman, "Towards a Combined Arms Training Center," November 1976, DCST 1973-1977, Strategy and Tactics for Learning: The Papers of General Paul F. Gorman, USA (Ret), http://usacac.army.mil/cac2/csi/docs/Gorman/03_DCST_1973_77/26_76_NTC_CombinedArmsTng_Nov.pdf (accessed November 12, 2011).

The ultimate goal of DePuy's work was to prepare the Army to fight the first battle of the next war outnumbered, and prevail.

DePuy was explicit about what he did not want to see in the FM 100-5 rewrite, which began in July 1974 with the publication of a memorandum to his subordinate school commandants that became known as the "pot of soup" letter, named for its idiom of a French peasant's pot of soup boiling in the fireplace.⁶¹ The "pot of soup" letter and its attached draft concept paper on combat operations was a reaction to an impassioned memo from Major General Donn A. Starry, commanding the Armor Center, advocating for changes in doctrine. Starry's memo, informed by his own observations of the Yom Kippur War, articulated what he intended to do within Armor Branch to promulgate his doctrinal changes.⁶² Starry's initiatives ran afoul of Gorman, an infantryman, who felt that Starry's stated priorities, centered on the employment of armor and aviation, would derail the larger effort of standardizing the ARTEP across the entire force.⁶³ The "pot of soup" letter and draft concept paper served both to mollify Gorman (and also Major General Thomas M. Tarpley, commander of the Infantry Center), and made some of Starry's ideas more palatable to the larger community.⁶⁴

DePuy sent further doctrinal guidance prior to an October 1974 conference at Fort Knox that became known as OCTOBERFEST. The conference was DePuy's attempt to orient senior leaders both in TRADOC, which owned the institutional training base, and in Forces Command,

⁶¹ The memorandum's first paragraph included the following text: "In France in the house of a peasant there is always a pot of soup boiling in the fireplace...Everyone can add to it and anyone may partake. I view the attached paper somewhat the same way." COL Richard M. Swain, Carolyn D. Conway, and Donald L. Gilmore, eds., *Selected Papers of General William E. DePuy: First Commander, U.S. Army Training and Doctrine Command, 1 July 1973* (Fort Leavenworth, Kan.: Combat Studies Institute Press, US Army Combined Arms Center, 1994), 121.

⁶² GEN Donn A. Starry, "Rationale for Changes in Doctrine," in *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 1 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 272-274.

⁶³ Herbert, *Deciding What Has to Be Done*, 44-47.

⁶⁴ Department of the Army, *Field Manual 100-5 (Test), Operations* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1974), attached at end.

which owned the actual forces that would deploy to combat.⁶⁵ OCTOBERFEST was the prelude to a comprehensive revision of all of the Army's important doctrinal manuals that took place during the years 1974-1976. DePuy was setting the azimuth for the revision at a conference at Fort A.P. Hill, Virginia, held from 11-13 December 1974. At the top of the agenda for the A.P. Hill conference was FM 100-5. DePuy laid out a comprehensive outline for what he wanted from the new capstone manual, with the central purpose being "to tell the US Army how to win the first battle of the war / How to win outnumbered."⁶⁶ DePuy's guidance outlined a prescriptive treatise on how to fight the Warsaw Pact, one that reflected his assumptions as to the absence of initiative on the part of first-line leaders on the battlefield, an outgrowth of his experiences in World War II and Vietnam.

DePuy assigned Major General John H. Cushman, commander of the Combined Arms Command (CAC) and CGSC's immediate higher headquarters, the task of writing the first draft of FM 100-5. Unfortunately for Cushman, the two general officers approached doctrine from fundamentally irreconcilable viewpoints. In a 2001 retrospective essay, Cushman admitted to "an unconventional, nonstandard approach to the teaching of tactics (among other things)." Education, far more than training, was central to Cushman's approach. To Cushman, tactical decisionmaking was not a matter of rules but a creative act.⁶⁷ Such an approach clashed with DePuy's far less optimistic view of human nature especially as regards to making informed, independent decisions.

Richard Swain, who edited a collection of DePuy's papers for CGSC's Combat Studies Institute, has described DePuy as "the ultimate Cartesian," a description borne out not only in

⁶⁵ John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982* (Fort Monroe, Va.: Historical Office, U.S. Army Training and Doctrine Command, 1984), 47-48.

⁶⁶ "AP Hill Outline of FM 100-5" (U.S. Army Training and Doctrine Command, 1976), FM 100-5 folder, Box 17, William E. DePuy Papers, U.S. Army Military History Institute.

⁶⁷ John H. Cushman, *Fort Leavenworth, A Memoir* (Annapolis, Md.: John H. Cushman, 2001), 44-47.

DePuy's own oral histories, but also in the record of DePuy's actions.⁶⁸ DePuy was not interested in the education or philosophy that Cushman espoused. Rather, DePuy wanted a training document to communicate very clearly defined tactics, techniques, and procedures, a reflection of his combat experience. Unlike Cushman, DePuy did not attribute much initiative to the average soldier, placing the onus of tactical competency in the rapid execution of simple battle drills and principles.⁶⁹ DePuy wanted a "How to Fight" manual, and used those terms explicitly in his guidance for the A.P. Hill Conference.⁷⁰ DePuy's view of management gave great latitude to the talented, but he was convinced that very few of those talented individuals existed, a consequence of his combat experience in the 90th Infantry Division. Instead, Army schools were more useful for the less driven or less talented, a niche where his approach to doctrine would make its greatest contribution.⁷¹

In comparison, Cushman's draft for the A.P. Hill conference, designated FM 100-5 (Test), reflected its authorship. Cushman's own guidance to CAC, and specifically CGSC's Department of Tactics, was to use the 1949 FM 100-5 as a starting point, and the draft remained true to that direction. While FM 100-5 (Test) nominally integrated DePuy's initial guidance, it did so colored by Cushman's own mindset. DePuy was irate with the prose in FM 100-5 (Test), and effectively wrote Cushman and CAC out of the upcoming manual by dividing responsibilities for the manual among the other schools.⁷² While CAC had initial responsibility for the chapter on the defense, DePuy had savaged "The Division in the Defense," Cushman's

⁶⁸ Richard M. Swain, "AirLand Battle," in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington: University Press of Kentucky, 1999), 363.

⁶⁹ GEN William A. DePuy, interview by Michael Pearlman, May 16, 1987, 21, Box 2, U.S. Army Military History Institute, William E. DePuy Papers.

⁷⁰ "FM 100-5, AP Hill Outline," 2.

⁷¹ Gole, *General William E. DePuy: Preparing the Army for Modern War*, 90.

⁷² An example appears in the first chapter: "Tactics is a thinking man's art. It has certain principles which can be learned, but it has no traffic with rules. It is better that a tactician be able to go to the essentials of a single situation and solve it well than that he memorize all the rules ever written. The master tactical leader never stops thinking and learning, even in combat." Department of the Army, *FM 100-5 (Test)*, 1974, 1-1.

previous paper on the topic, writing that “there is no concept – no connection with weapons effectiveness, suppression, mobility, blocking, etc.” and marked sections of it as “sophomoric” and “we are teaching, not debating.”⁷³ Although Tarpley and the Infantry Center subsequently received the chapter on the defense at another meeting at Fort A.P. Hill in April 1975, much of the actual chapter on defense, as well as the chapter on the offense, ended up being Starry’s own work.⁷⁴ Rather than leaving overall responsibility with CAC, DePuy had Gorman collect all of the chapters, elevating responsibility for the manual to TRADOC, an unprecedented move.⁷⁵ The philosophical differences between Cushman and DePuy made further development of FM 100-5 by CAC entirely unacceptable to DePuy.

The only other input to the manual came from a group of majors, lieutenant colonels, and one civilian. That group received the nickname of the “Boathouse Gang” since they worked out of a building at Fort Monroe adjacent to the yacht anchorage. Drawn mostly from Gorman’s staff directorate, they acted as an extension of DePuy’s beliefs and style, ghost writing portions of the text for DePuy’s personal review and approval.⁷⁶ Aside from the school commandants, the Boathouse Gang was the only group to interact directly with DePuy during the production of the manual.

TRADOC attempted to gain better acceptance of its concepts with FORSCOM in an October 1975 conference at Fort Hood, Texas. This meeting was called OFTCOM and was intended as a sequel to OCTOBERFEST, ostensibly an attempt to integrate the Army’s airmobile

⁷³ Department of Tactics, “The Division in the Defense” (U.S. Army Command and General Staff College, 1976), FM 100-5 folder, Box 17, U.S. Army Military History Institute, William E. DePuy Papers.

⁷⁴ GEN Donn A. Starry, letter to Richard M. Swain, June 7, 1995, 10, Combined Arms Center Historical Files, Combined Arms Research Library.

⁷⁵ Herbert, *Deciding What Has to Be Done*, 59. The definitive account of the outcome of the conflict of philosophies between Cushman and DePuy appears in chapter 5 of Herbert’s book.

⁷⁶ *Ibid.*, 84–87.

experience from Vietnam into the new doctrine.⁷⁷ In reality, DePuy sought to co-opt potential critics from the light infantry community before they could voice criticism. The audience and location was no accident. Cushman had been a commander of the 101st Airborne Division (Airmobile) during Vietnam, and the 1st Cavalry Division had recently been reorganized into a composite organization comprised of an armored brigade, light infantry brigade, and an air cavalry combat brigade to provide attack and assault aviation support to the division. Thus, the location provided a showcase for all of the potential audiences for DePuy's tactical concept, just before FM 100-5 was approved for publication.⁷⁸

The tactical concept outlined in FM 100-5 has been nicknamed Active Defense, although that term appears only four times in the entire manual.⁷⁹ The concept, drawn from the “pot of soup” draft concept paper, used a systems analysis approach to compare quantitative assessments of weapons and terrain against the numbers of Soviet forces expected in a combat situation. The underlying philosophy of Active Defense was that “what could be seen can be hit, and what could be hit could be killed.”⁸⁰ The concept gave voice to DePuy's long-held beliefs in the value of cover, concealment, and suppression on the battlefield. The so-called “Active Defense” envisaged a mobile defense conducted by armored forces against a Warsaw Pact attack. Those mobile forces were intended to fight outnumbered and prevail through achieving local superiorities through fire and maneuver to blunt the attack.⁸¹ The early versions of the tactical concept implied what DePuy called an “elastic” defense that traded depth for maneuver space.

⁷⁷ Swain, Conway, and Gilmore, *Selected Papers of General William E. DePuy*, 180.

⁷⁸ Herbert, *Deciding What Has to Be Done*, 89–90.

⁷⁹ Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1982), 3–9, 5–7, 5–13, 14–20. The title “Active Defense” appears to have stuck because of its usage in Field Manual 71-1, *Tank and Mechanized Infantry Company Team*.

⁸⁰ Swain, Conway, and Gilmore, *Selected Papers of General William E. DePuy*, 85, 131. Department of the Army, *FM 100-5 (Test)*, 1974, 1–4. Department of the Army, *FM 100-5 (1982)*, 2–6.

⁸¹ Swain, Conway, and Gilmore, *Selected Papers of General William E. DePuy*, 131.

The conduct of that elastic defense, however, required the cooperation of partners outside the U.S. Army.

One of the unintended benefits of DePuy's centralization of authority for FM 100-5 was external coordination. DePuy needed the support of two organizations outside the U.S. Army to gain acceptance of his vision of land warfare. The *Bundeswehr*, or Federal Armed Forces of Germany, was a logical partner given that any likely land war against the Warsaw Pact would be fought in West Germany. The second critical source of support was Tactical Air Command (TAC), the U.S. Air Force major command responsible for doctrine and combat developments for tactical air forces.⁸²

German involvement was a new development for this edition of FM 100-5. DePuy's prior experience in NATO as an infantry battalion and battle group commander was in the context of a mobile defense in depth. The numerical advantages the Warsaw Pact held in conventional forces until the 1960s gave little recourse but to fight a delay to the Rhine River until reinforcements from the United States and the United Kingdom could arrive. Once the *Bundeswehr* became an established member of the NATO military structure, the Germans weighed in politically for a change in strategy. They rightly feared that a NATO defense in depth, regardless of tactical nuclear release, would leave West Germany a wasteland.⁸³ Subsequent study of Warsaw Pact military journals and declassified correspondence revealed that the Soviets sought to achieve deep penetration into Germany expressly to preempt NATO's potential employment of tactical nuclear weapons.⁸⁴

⁸² TRADOC's functions also spanned the Air Training Command, which was responsible for the Air Force's training and education functions. The term "tactical air forces" refers to those forces that operate in support of a joint force commander, rather than those reserved for strategic (typically nuclear strike) roles.

⁸³ GEN William A. DePuy, interview by Michael Pearlman, September 23, 1986, Box 2, U.S. Army Military History Institute, William E. DePuy Papers.

⁸⁴ LtGen (Ret) Paul K. Van Riper, interview by author, March 28, 2011, notes in author's possession. Starry, June 7, 1995, 4.

Abrams, before he died in office, asked DePuy to be his representative in working with the German Army as the latter was revising its own capstone doctrinal manual, Army Directive (*Heer Dienstvorschrift*, abbreviated HDv) 100/100. DePuy's counterpart was General Rudiger von Reichert, the German Army vice chief of staff. Weyand, Abrams' successor, did not pay close attention to doctrinal reform, leaving DePuy a relatively free hand. It also made TRADOC, not U.S. Army Europe, the U.S. Army's primary agent for doctrinal coordination.

The degree of coordination between TRADOC and the German Army was such that there were relatively few philosophical differences between Active Defense and the Germans' own defensive doctrine in HDv 100/100. DePuy and Starry's substantial previous experience in Europe and DePuy's own desire to "emulate the Germans" resulted in an American tactical concept that bore remarkable similarities to its German counterpart. The American doctrine was more quantitative in its treatment, reflecting DePuy's own predilection for systems analysis as well as his focus on "fighting outnumbered and winning."⁸⁵

Philosophical similarities at the tactical level could not bridge a fundamental difference in strategic approaches to the defense of Western Europe. German aversion to fighting throughout the depth of West Germany made DePuy's initial vision of a deep elastic mobile defense politically unacceptable. The Germans wanted a forward defense on a depth as shallow as 30 kilometers, rather than the 250-300 kilometers that a defense along the Rhine would have allowed.⁸⁶ This difference in defensive depths created a paradox for Allied commanders as the U.S. Army described Soviet doctrinal depths in excess of 100 kilometers for a motorized rifle

⁸⁵ Herbert, *Deciding What Has to Be Done*, 66, 84–85.

⁸⁶ GEN William A. DePuy, interview by Michael Pearlman, January 15, 1987, Box 2, U.S. Army Military History Institute, William E. DePuy Papers. DePuy, interview, September 23, 1986.

division in the march.⁸⁷ The strategic restrictions demanded by German (and by extension, NATO) considerations precluded the best tactical solution to achieving the ends for that strategy. Von Reichert announced publicly at a 1976 demonstration of the doctrine at the maneuver area at Grafenwöhr that “if that is what the American Army means, we, the German Army, buy it completely.” However, von Reichert’s rhetoric masked his private unease that U.S. Army forces would still fight an elastic defense, a concern that remained through the 1980s even after other concepts had replaced Active Defense.⁸⁸

The relationship with the U.S. Air Force was also a function of circumstances. The support of both services’ senior leadership, combined with the services’ complementary observations from the Yom Kippur War, was vital to a doctrine that did not just acknowledge the other service, but explicitly argued for joint functional interdependence, as was the case in the 1976 FM 100-5. The coordination between the two was a very small start at bridging some of the fundamental disputes between landpower and airpower advocates.

Coordination between TRADOC and the U.S. Air Force started from a happy coincidence of personalities. Abrams recognized that budgets would decrease substantially after Vietnam and saw public budgetary infighting with the Air Force as counterproductive to both services. General George S. Brown, Air Force Chief of Staff, had been Abrams’ deputy commander for air operations at U.S. Military Assistance Command, Vietnam and was both personally and professionally receptive to Abrams’ desire for collaboration.⁸⁹

The first instance of that collaboration occurred in the summer of 1973 in the Pentagon. Air Force Major General Leslie W. Bray and Army Major General John H. Elder did a study to

⁸⁷ Department of the Army, *Soviet Army Operations*, IAG-13-U-78 (Arlington, Va.: U.S. Army Intelligence and Threat Analysis Center, 1978), 3–23.

⁸⁸ DePuy, interview, September 23, 1986.

⁸⁹ Herbert, *Deciding What Has to Be Done*, 68.

determine the divisions of authority between the two services, with major implications for doctrine, combat developments, and acquisitions. Both Abrams and Brown endorsed the subsequent Bray-Elder Papers, although they did not formally approve them.⁹⁰

That same summer, General William W. Momyer, commanding TAC, initiated Air Force outreach to the Army, on matters of mutual interest such as airspace management and battlefield reconnaissance and surveillance. Momyer's successor, General Robert J. Dixon, continued the dialogue between the two major commands. The subsequent creation of the Air-Land Forces Application (ALFA) agency in June 1975 institutionalized the working groups between TAC and TRADOC that refined the doctrine being produced. Although such formal coordination might possibly have resulted in greater doctrinal integration, limiting the scope of doctrinal change reduced potential friction between the Army and the Air Force.⁹¹

The introduction of the term "AirLand Battle" itself was an indicator of improved relations. Although "AirLand Battle" is the name of the central concept in the 1982 and 1986 editions of FM 100-5, the term "Air-Land" originated in the 1960s at Fort Leavenworth. Chapter 5 of Cushman's FM 100-5 (Test) was titled "Air/Land Operations," and presaged much later joint doctrine by having a single headquarters to control airspace in conjunction with Army forces. Neither the Army nor the Air Force was willing to embrace that degree of integration yet.⁹²

"Air-Land Battle," Chapter 8 of the approved 1976 FM 100-5, stated that "the Army and Air Force are separate services which come together on the field of battle under joint

⁹⁰ Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, D.C.: Office of Air Force History, U.S. Air Force, 1987), 25–26.

⁹¹ *Ibid.*, 27. Gen Robert J. Dixon, "TAC-TRADOC Dialogue," *Strategic Review* VI, no. 1 (Winter 1978): 45–48.

⁹² Department of the Army, *FM 100-5 (Test)*, 1974, 5–1–5–4. Herbert, *Deciding What Has to Be Done*, 70–72.

commanders.” The manual specified five Air Force contributions, namely air superiority, reconnaissance and intelligence, battlefield air interdiction, close air support, and tactical airlift. One precedent in the manual was its explicit description of Army support for suppression of enemy air defenses, involving artillery, surface-to-surface missiles, and electronic attack.⁹³ The chapter represented a start, like the rest of the manual, toward offering a concrete description delineation of what commanders had to do to fight outnumbered and win against a Soviet foe.

The tentative consensus with the Air Force and the Germans belied the peremptory way in which DePuy had produced FM 100-5. As has been shown, the doctrine establishment and certainly not Fort Leavenworth, could not have produced the manual that DePuy desired. He sacrificed consensus (beyond Starry, Gorman, and an inner circle of doctrine writers at TRADOC) to enact dramatic change from within the Army. DePuy’s process, however, set the stage for a debate about doctrine—what it was and what it should be—that was hitherto unseen within the Army.

Reactions to FM 100-5

The bold changes in FM 100-5 created a significant reaction that appeared in several key military journals. Most of the varied commentary appeared in *Military Review*, although some appeared in venues such as *Army*, the journal of the Association of the United States Army, and *Armed Forces Journal*, an independent publication. The reaction included praise, examples of which were reviews from Canadian brigadier Dan G. Loomis, defense analyst Philip A. Karber,

⁹³ Department of the Army, *FM 100-5 (1982)*, 8–2–8–5.

historian Archer Jones, and strategist Colin Gray.⁹⁴ However, the new doctrine also generated significant negative response.

Ironically, the first critique of Active Defense came in the form of “Winning the First Battle: Another Look at New Tactical Doctrine,” a student essay by Captain Wesley K. Clark, the distinguished honor graduate in the CGSC class of 1975. In commenting on the draft version of FM 100-5 in use at CGSC, Clark was concerned with the draft manual’s focus on small unit battles to the detriment of the needs of higher level commanders.⁹⁵

The catalyst for the pushback against Active Defense was an article by William S. Lind, at the time a legislative aide for Senator Gary Hart. Lind, in “Some Doctrinal Questions for the United States Army,” which ran in *Military Review*, asserted that “American doctrine traditionally has been an attrition/firepower doctrine.”⁹⁶ Lind was critical of what he saw as an undue emphasis on fighting outnumbered and winning and winning the first battle at the expense of subsequent battles, based on the belief that the Soviets would attack in multiple echelons. In Lind’s assessment, the relatively shallow defense envisaged in Active Defense could not prevail against the Soviet threat. Instead, Lind advocated a “maneuver” approach predicated on dislocation and defeat of an enemy through attacking his mental cohesion and will instead of physical destruction.⁹⁷

⁹⁴ BGen Dan G. Loomis, “FM 100-5 Operations: A Review,” *Military Review* LVII, no. 3 (March 1977): 66–69; Philip A. Karber, “Dynamic Doctrine for Dynamic Defense,” *Armed Forces Journal International* 114, no. 2 (October 1976): 28–29; Archer Jones, “The New FM 100-5: A View From the Ivory Tower,” *Military Review* LVIII, no. 2 (February 1978): 27–39; Colin S. Gray, “Force Planning, Political Guidance and the Decision to Fight,” *Military Review* LVIII, no. 4 (April 1978): 5–16.

⁹⁵ Richard M. Swain, “Filling the Void: The Operational Art and the U.S. Army,” in *The Operational Art: Developments in the Theories of War*, by B. J. C. McKercher and Michael A. Hennessy (Westport, Conn.: Praeger, 1996), 152.

⁹⁶ William S. Lind, “Some Doctrinal Questions for the United States Army,” *Military Review* LVII, no. 3 (March 1977): 58.

⁹⁷ *Ibid.*, 54–65.

Lind's article began as a draft memorandum to DePuy, followed by a contentious office call that did not endear the two to each other. DePuy, in an interview over a decade later, recalled his thoughts after the meeting:

I had no intention of dealing with Lind anymore because I thought he was kind of a lightweight...I don't think I read him entirely correctly. I think he has more to offer than I perceived at that time. But I didn't particularly like the guy and I didn't intend to spend any more time with him, period."

Predictably, DePuy's first reaction to Lind's article when presented for editorial review was "hell no" because of that personal judgment. After a series of articles ran in the October 1976 issue of *Armed Forces Journal International*, DePuy relented, making Lind's critique of Active Defense the first to appear in any Army journal.⁹⁸

Internal debate within the Army lagged behind civilian debate chiefly as the Army's leadership sought to learn how to implement the new doctrine before commenting. Some of the initial printed reactions to the doctrine from within were attempts at trying to make it work at the small unit level.⁹⁹ Others were dissenting views expressing doubt as to the ability of the new doctrine to work as promised.¹⁰⁰ Light infantry units such as the 82d Airborne Division improvised in the absence of branch-peculiar doctrine, but the most rigorous test came from Starry, who after promotion, went from the Armor Center to command V Corps in central Germany. Starry's own field testing of Active Defense in V Corps and discovery of some of its limitations led him to write "A Tactical Evolution: FM 100-5" in 1978, after he succeeded DePuy as commanding general of TRADOC. Lind's reaction to "A Tactical Evolution" was a

⁹⁸ DePuy, interview, May 16, 1987. A sensationalized account of the events surrounding Lind's article appears in John Patrick, "Banned At Fort Monroe, Or The Article The Army Doesn't Want You To Read," *Armed Forces Journal International* 114, no. 2 (October 1976): 26.

⁹⁹ LTC Robert G. Chaudrue, "Requiem for the Infantry," *Infantry* 68, no. 3 (June 1978): 28-31; CPT Gregory Fontenot and CPT Matthew D. Roberts, "Plugging Holes and Mending Fences," *Infantry* 68, no. 3 (June 1978): 32-36.

¹⁰⁰ LTC George F. Steger, "More Dilemmas in Studying Soviet Tactics," *Military Review* LVIII, no. 2 (February 1978): 88-91.

letter to the editor of *Military Review*. That letter, excoriating FM 100-5 as “irretrievably flawed in both theory and practice,” never saw publication. Lind’s abrasive demeanor and tone had effectively marginalized him in Starry’s view as much as he had earlier done with DePuy.¹⁰¹

Notably, the differences in the military discourse on Active Defense focused on tactics. Lind’s criticisms, as did Loomis’s and Gray’s articles, focused on the strategic level. Although Loomis was a serving military officer, he was in the Canadian Army and thus approached the issues with a different focus than his American counterparts. The strategy that was the focal point of external discourse was altogether missing from the new doctrine. Another group within of the Army, completely separate from DePuy’s work on FM 100-5, set out to remedy that absence.

The Rediscovery of Strategy in the U.S. Military

The virtually total absence of strategy in the text of FM 100-5 was not just a function of the authors’ predilection for tactics or the mechanics of combined arms warfare. It was symptomatic of a far larger issue that plagued the U.S. Army, namely the dichotomy between strategy and tactics in the Army’s culture itself. The so-called “Mobilization Army” that DePuy disparaged was heavily reliant on filling the ranks with conscripts at junior levels and promoting junior officers to higher levels of tactical responsibility. Senior leadership, however, remained the domain of career officers who presumably would have learned about strategy through their careers and professional military education. This pattern was certainly not new. No less influential a figure as Emory Upton, in an attack on citizen soldiers and political generals,

¹⁰¹ William S. Lind, letter to the editor of *Military Review*, August 7, 1978, Document 17, Folder 9, Box 13, U.S. Army Military History Institute, Donn A. Starry Papers. Donn A. Starry, letter to Colonel Addison D. Davis, III, July 19, 1976, Document 37, Folder 8, Box 5, U.S. Army Military History Institute, Donn A. Starry Papers.

described a cycle of peacetime neglect, military disaster early in a war, followed by victory won only through enormous costs of lives and materiel.¹⁰²

This pattern remained in place until after World War II, when the advent of nuclear weapons challenged the relevance of a mobilization army in a general war of national survival. The absence of a viable strategic concept, the siren song of nuclear deterrence in lieu of land campaigning, and the visceral ground combat experiences of many in Korea was a powerful influence on many in the Army to pursue tactical-level considerations of combat, rather than the broader roles and missions for which the Army was responsible.¹⁰³ Strategic performance in Vietnam reflected that inappropriate tactical bias, a condition that John Shy and Thomas Collier described as “almost a purely military approach, like the Normandy landings or the liberation of Luzon in 1944, targeted on an enemy presumed to be the mirror image of American combat units, the peasants...waiting for the blessings attendant on American liberation.”¹⁰⁴

Ironically, the 1968 edition of FM 100-5 had set forth a substantial treatment of the purpose of the Army in a strategic context. It nested military strategy in a larger perspective of national strategy and explicitly tied those strategies to the broad policy objectives that further the national interest. It was the final refinement of the portrayals of strategy that had begun under the 1939 edition of FM 100-5.¹⁰⁵ However, given the Army’s focus on tactical considerations in Vietnam, that chapter was virtually irrelevant.

As part of the restoration of the Army’s institutions and culture, Abrams established a Strategic Assessment Group in early 1973 to determine if there was a legitimate role for

¹⁰² Brian McAllister Linn, “The American Way of War Debate: An Overview,” *Historically Speaking* 11, no. 5 (2010): 22.

¹⁰³ Bacevich, *The Pentomic Era*, 129–133, 144.

¹⁰⁴ John Shy and Thomas W. Collier, “Revolutionary War,” in *Makers of Modern Strategy: from Machiavelli to the nuclear age*, ed. Peter Paret, Gordon Alexander Craig, and Felix Gilbert (Princeton, N.J.: Princeton University Press, 1986), 856.

¹⁰⁵ Department of the Army, *FM 100-5 (1968)*, 1–1–1–7.

conventional (i.e., non-nuclear) strategy for the Army after Vietnam. The group, operating out of the Plans Directorate of the Army's Deputy Chief of Staff for Operations and Plans (DCSOPS), became known as the Astarita Group, after its lead, Colonel Edward F. Astarita, who enjoyed Abrams' personal confidence.¹⁰⁶ In fact, virtually all of the Astarita Group, in the words of Lieutenant Colonel Thomas Noel, one of its members, were "almost complete mavericks to the system" but they enjoyed Abrams' trust as men who would speak truth to power.¹⁰⁷

The Astarita Group developed the first authoritative expression of a strategic concept for the Army after Vietnam. It did so based on a net assessment of the domestic and international situation of the day, an identification of the vital national interests of the United States, and the roles and elements of a national strategy and a military strategy in the pursuit of those interests. The group's work yielded a three-hour oral report, briefed widely throughout the four services, the Office of the Secretary of Defense, the State Department, and the Central Intelligence Agency.¹⁰⁸ As the VCSA, General John W. Vessey directed the release of a redacted version of the briefing in 1981, the task for which fell to one of the group members, Colonel Harry G. Summers, Jr., who was assigned to the Strategic Studies Institute at USAWC.¹⁰⁹

The effects of the Astarita Report were considerable within the Department of Defense. It was a description of political, military, and economic elements in strategy and a precursor to what is now taught as the elements of national power, which had no basis in military doctrine prior to the report.¹¹⁰ It also described a role for the military as an instrument of national policy, meaning that military strategy had to operate in coordination with considerations beyond just

¹⁰⁶ COL Harry G. Summers Jr., *The Astarita Report: A Military Strategy for the Multipolar World* (Carlisle Barracks, Pa.: US Army War College, 1981), v.

¹⁰⁷ As a major, Noel was Abrams' aide-de-camp while the latter was deputy commander, U.S. Military Assistance Command, Vietnam.

¹⁰⁸ Summers, *The Astarita Report: A Military Strategy for the Multipolar World*, v, 3–31.

¹⁰⁹ *Ibid.*, v.

¹¹⁰ *Ibid.*, 16.

military victory.¹¹¹ Rather than continue the reliance on nuclear weapons that characterized Mutual Assured Destruction and Flexible Response, the report made a persuasive case for adequate conventional military forces—meaning land power—as a way to control a conflict and achieve termination of a conflict. The notion of conflict termination (a modern-day element of joint operational art), as well as the linkage of strategy, policy, and national interests in American military literature, owes much to the Astarita Report.¹¹²

Summers' work on the Astarita Report also made him the logical choice for a project that had a far greater impact than was originally intended. Between his stint on the Astarita Group and his arrival at USAWC, Summers was assigned to the Office of the Chief of Staff of the U.S. Army, where he worked with the BDM Corporation on a *Study of Strategic Lessons Learned in Vietnam*. Summers' arrival coincided roughly with a directive by Major General Jack Merritt, USAWC commandant, to develop a study of strategic lessons from the Vietnam experience.¹¹³ The resulting book, *On Strategy: The Vietnam War in Context*, was successful beyond anyone's expectations. It was widely read both within and outside the Army, and became the basis of a revival of interest in military strategy that neither Merritt nor Summers intended or anticipated.

On Strategy drew heavily from the theoretical work of Clausewitz and Antoine-Henri Jomini in framing its analysis of Vietnam. He introduced the Army to concepts familiar to readers of Clausewitz's *On War*, such as friction and the role of national will in waging war, but used Jomini's divisions of tactics, grand tactics, and strategy to frame the Army's Principles of

¹¹¹ Ibid., 32–33.

¹¹² Ibid., 39–40.

¹¹³ Harry G. Summers Jr., *On Strategy: The Vietnam War in Context* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 1981), iv. Hereafter referred to as *On Strategy (USAWC Edition)*. David T. Zabecki, "Colonel Harry G. Summers, Jr., was a soldier, scholar, military analyst, writer, editor and friend," *The Clausewitz Homepage*, n.d., <http://www.clausewitz.com/readings/SummersObitText.htm> (accessed November 29, 2011).

War.¹¹⁴ He identified the void in strategic thought in the Army's doctrine, using the 1962 edition of FM 100-5 as a comparison, and in essence, provided a vehicle for reintroducing strategic theory to the Army, even at CGSC, where the only instruction in strategy was in its history.¹¹⁵

The other influence on strategy appeared in the work of Colonel Arthur F. Lykke, Jr., another member of the USAWC faculty. Lykke, Director of Military Strategy at the Department of Military Strategy, Planning and Operations, edited the USAWC survey text produced for the department's course on military strategy from its inception in 1981 until 1994. His substantive contribution to the literature was his article "Towards An Understanding of Military Strategy," which appeared in every USAWC guide to national strategy until 2001. Lykke formally credited the origins of this article to a 1981 visit to USAWC by General Maxwell D. Taylor, who "characterized strategy as consisting of objectives, ways, and means." Lykke's model of strategy adapted Taylor's construct to a structure of ends, ways, means, all articulated as a balanced whole. Failure to balance the elements of strategy induced a risk of strategic failure.¹¹⁶ The formal publication of Lykke's article, following closely after the publication of *On Strategy*, made them complementary instruments of a revival of interest in strategy, which paralleled the Army's first dedicated manual on strategy after Vietnam.

The relative absence of consideration of strategy in FM 100-5 led to the development of FM 100-1, *The Army*, at the direction of General Bernard W. Rogers, who succeeded Weyand as CSA in 1976. The purpose behind FM 100-1, as laid out in its preface, was to express "the

¹¹⁴ Clausewitz, *On War*, 17, 77; Summers, *On Strategy (USAWC edition)*.

¹¹⁵ Summers, *On Strategy (USAWC edition)*, 59. Roger J. Spiller, interview by author, November 28, 2011, recording in author's possession.

¹¹⁶ Harry R. Yarger, "How Do Students Learn Strategy? Thoughts on the U.S. Army War College Pedagogy of Strategy," in *Teaching Strategy: Challenge and Response*, by Gabriel Marcella (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010), 184. Arthur F. Lykke, "Towards An Understanding of Military Strategy," in *Military Strategy: Theory and Application: A Reference Text for the Department of Military Strategy, Planning, and Operations, 1982-1983*, ed. Arthur F. Lykke (Carlisle Barracks, Penn.: U.S. Army War College, 1982), 3-1-3-5.

fundamental roles, principles, and precepts governing the employment of United States Army forces in support of United States national security objectives.”¹¹⁷ Written primarily by Colonel Tom Thompson at the Strategic Studies Institute, FM 100-1 was the first manual specifically addressing strategic considerations about the roles and missions of the Army, and it sought to provide necessary context for the tactical considerations described in FM 100-5.¹¹⁸ The influence of the Astarita Report was evident in the 1978 FM 100-1, which outlined three major strategic purposes for so-called general purpose forces: conflict prevention, conflict control, and conflict termination.¹¹⁹ The manual also marked a return of the Principles of War, which DePuy and Gorman removed from FM 100-5 as being too abstract.¹²⁰ Indeed, the omission of the Principles of War had prompted Rogers to initiate FM 100-1 in the first place.¹²¹

Unusually, the specific organization with proponency for FM 100-1 was not TRADOC. It was the Strategic Plans and Policy Division of the DCSOPS Strategy, Plans, and Policy Directorate, an office informally called SSP, from DAMO-SSP, its office address for internal Army correspondence.¹²² The USAWC was a field operating agency of Headquarters, Department of the Army, and did not answer to TRADOC. While SSP was not assigned the

¹¹⁷ Department of the Army, *Field Manual 100-1, The Army* (Washington, D.C.: G.P.O., 1978), iii.

¹¹⁸ MG Dewitt C. Smith Jr., “Letter to Lieutenant General Glenn K. Otis, Deputy Chief of Staff for Operations and Plans,” March 31, 1980, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute; COL Harry G. Summers Jr., Letter to Colonel Andrew C. Remson, Jr., Director, Strategic Studies Institute, October 15, 1979, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute.

¹¹⁹ Department of the Army, *FM 100-1 (1978)*, 6–8. The term “general purpose forces” originates in the Defense Department’s infamous Planning, Programming, and Budgeting System (PPBS), which funded those forces separate from intelligence, space, mobility, strategic (i.e., nuclear strike) forces, and later, special operations forces.

¹²⁰ DePuy, interview, May 16, 1987.

¹²¹ COL Robert S. Thompson, Memorandum to Chief of Staff, United States Army, Subject: Review of TRADOC Third Draft Revision of FM 100-1 (The Army)--DECISION MEMORANDUM, February 27, 1981, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute. Of note, while Thompson, a colonel, was chief of DAMO-SSP during this time, the action officer on FM 100-1 was Lieutenant Colonel Allan P. Meyer.

¹²² DAMO still is the office symbol for DCSOPS (now renamed the Army G-3/5/7), with SSP referring to the directorate (SS) and division (P).

resources to write the manual on an enduring basis, its masters were also those of USAWC, which provided the actual authorship of the manual.

Summers became the USAWC primary point of contact for FM 100-1 in 1979 after Thompson's retirement from the Army. Recognizing much of the ties to the Astarita Report, Summers intended to tie the manual to the follow-on to the BDM Vietnam Lessons Learned project, which became *On Strategy*. Summers received the backing of USAWC commandant Major General Dewitt C. Smith, Jr., who passed command to Merritt in July 1980. In 1980, Merritt, informed by Summers' ongoing work on FM 100-1 and *On Strategy*, identified several omissions in the 1978 FM 100-1 to be addressed in a future revision, and he formally designated Summers as lead author for the revision of FM 100-1.¹²³ This assignment was fortuitous. Shortly thereafter, Starry, commanding TRADOC by this time, directed CAC to develop a first draft of FM 100-1, in an attempt to bring FM 100-1 far closer to the tone of FM 100-5 than Merritt or Lieutenant General Glenn K. Otis, the DCSOPS at the time, were willing to accept.

The other impetus for the revision of FM 100-1 was an irate letter that General Edward C. Meyer, Rogers' successor as CSA, sent to his senior leaders on June 4, 1980:

Frankly, I am troubled when I observe apparently competent officers who apply the tools of our trade inappropriately in operational situations, or who fail to scrutinize rather basic but critical assumptions underlying our plans, or who substitute program guidance in situations which clearly demand military judgment.¹²⁴

The first part of Meyer's ire was a reaction to inappropriate tactical bias, when officers applied tactical concepts against concepts that those tactical concepts could not resolve. The second was a reaction to Army officers who had responsibilities for the Planning, Programming and

¹²³ Summers, letter to Remson, October 15, 1979. MG Jack N. Merritt, "Letter to Brigadier General Robert H. Forman, Deputy Commandant, U.S. Army Command and General Staff College," August 22, 1980, Drafts and Correspondence Concerning FM 100-1, U.S. Army Military History Institute, Harry G. Summers Jr. Papers.

¹²⁴ GEN Edward C. Meyer, "Untitled memorandum," June 4, 1980, Drafts and Correspondence Concerning FM 100-1, U.S. Army Military History Institute, Harry G. Summers Jr. Papers.

Budgeting System (PPBS), and made decisions based solely on fiscal considerations, rather than an informed appreciation for the strategy that underpinned those tactical or budgetary actions.

Neither USAWC nor SSP concurred with the August 1980 draft that came from Leavenworth that incorporated a new chapter on the organization of the Army. They objected that this effort did not address the role that the Army played in the creation of strategy within the Department of Defense, whether fiscally as part of PPBS, institutionally as part of the Joint Strategic Planning System (JSPS), or operationally as part of the Joint Operations Planning System (JOPS). Instead, the Leavenworth draft, written by Major Gary Weis, a CGSC instructor who had been using FM 100-1 as a teaching text, added a focus on Starry's concept of the "integrated battlefield," an outgrowth of his practical work with Active Defense at V Corps.¹²⁵ Merritt had Summers and Colonel Andrew C. Remson, Jr., director of the Strategic Studies Institute, begin the USAWC process of revising the manual in response, essentially rejecting the validity of the draft produced at Fort Leavenworth.¹²⁶

In an attempt to break the logjam, Starry submitted a second TRADOC draft of FM 100-1 to Meyer and Otis on September 23, 1980, and provided Merritt a courtesy copy. Starry's intent, under the cover of having to revise all of the Army's manuals, was apparent from the aggressive "deadline" in the draft's cover letter, requesting substantial comments within thirty days. Starry wanted to use FM 100-1 to drive the institutional discourse and politics of the Army. His primary effort during that time was the revision of FM 100-5, which further articulated the integrated battlefield concept into a concept that later became known as AirLand Battle. It was

¹²⁵ COL Andrew C. Remson Jr., "Internal memo to Commandant, U.S. Army War College," August 14, 1980, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute. COL Harry G. Summers Jr., Memorandum for Commandant, U.S. Army War College, Subject: Revision of FM 100-1, December 5, 1980, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute.

¹²⁶ Merritt, "Letter to Brigadier General Robert H. Forman, Deputy Commandant, U.S. Army Command and General Staff College."

also possible that Starry saw ownership of FM 100-1 as a means of establishing precedent for TRADOC control over USAWC, something for which DePuy had long wished and Meyer explicitly did not want.¹²⁷

At Merritt's request, Summers reviewed the TRADOC draft of FM 100-1 and described it as "not only unsatisfactory" but "also potentially dangerous." The basis of Summers' criticism appeared in a particularly mordant passage in his cover letter to Merritt:

My perception of the danger of this rewrite grows out of my analysis of the Vietnam war. It became apparent--at least to me--that our field manuals provided the framework through which we saw the war and this faulty framework was at the root of many of our mistakes. I see us perpetuating the error with this rewrite. Especially pernicious is the whole idea of defining war in terms of "means" rather than in terms of "ends."¹²⁸

This assessment made readily apparent the complementary relationship between Summers' and Lykke's work—well before Lykke's model saw formal publication.

At Starry's behest, the doctrine writers at Leavenworth developed a third FM 100-1 draft in January 1981 in response to the official correspondence of October 1980. While some of the inappropriate tactical bias that had so alarmed Summers was gone, the draft still reflected Starry's own preference to avoid the abstract, to provide emphasis on the aspects of potential combat in Europe as part of NATO, and to retain a chapter on the Army's organization and functions. The latter material was curiously out of place with the philosophical tone of the rest of the draft. Starry was apparently confident that his draft would be approved, since the draft's cover letter to Meyer concluded with the statement that "the first time since 1973 we have

¹²⁷ COL Harry G. Summers Jr., Memorandum for Commandant, U.S. Army War College, Subject: Revision of FM 100-1, October 6, 1979, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute.

¹²⁸ COL Harry G. Summers Jr., Memorandum for Commandant, U.S. Army War College, Subject: Revision of FM 100-1, October 1, 1979, Drafts and Correspondence Concerning FM 100-1, Harry G. Summers Jr. Papers, U.S. Army Military History Institute.

written an important piece of Army doctrine at Leavenworth. We both just have to say hurrah to that!”¹²⁹

However, the final draft of the manual actually came from SSP, which developed what insiders termed the “DCSOPS draft” of FM 100-1 in March 1981. The DCSOPS draft drew on further guidance that Meyer gave in a session with the VCSA, the Director of the Army Staff, and Otis as the DCSOPS on February 10, 1981. Meyer was emphatic that the manual should retain a “lofty tone” so as to remain a concise treatment of fundamentals of strategy, and expected to see several elements relating to how the Army fought at the strategic level, specifically the Total Army Concept involving integration of both the Active and Reserve Components; nuclear, biological, and chemical warfare; and staying power, referring to how the United States provided needed resources to the Army at the national level for a conflict. The TRADOC draft’s lip service to those national strategic considerations was another impetus to the DCSOPS draft. The last chapter of the DCSOPS draft, covering the Profession of Arms, was actually written outside of DCSOPS, by Colonel Francis A. Waskowicz, who was assigned to the Office of the Chief of Staff and writing under Meyer’s direct guidance.¹³⁰

Summers, Merritt, and those who favored a more conceptual strategic approach prevailed in the published version of FM 100-1, dated August 14, 1981. Meyer’s response to Starry was affable but unmistakable in its tone:

“When published, draft FM 100-1 (The Army) will indeed have the broad focus and philosophic base appropriate for the Army’s capstone manual...Hopefully it will be used

¹²⁹ GEN Donn A. Starry, Letter to General Edward C. Meyer, Chief of Staff, U.S. Army, January 12, 1981, Folder 11, Box 23, Donn A. Starry Papers, U.S. Army Military History Institute. Reprinted in GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 1 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 364.

¹³⁰ Thompson, February 27, 1981.

profitably and we will be less prone to use “cookbook” approaches to mission analyses, conceptualizing, and planning.”¹³¹

The Army finally had a doctrine that covered the strategic considerations inherent to its own forces. However, the manual itself had little impact on the operational forces for which strategy was typically an abstraction. FM 100-1 was an internally-focused manual, primarily intended to shape the development of subordinate doctrine. In practice, the Cartesian approach to tactics that was DePuy’s hallmark was the centerpiece of how the Army would fight. The philosophical underpinnings of strategy that had informed Summers’ critique of the TRADOC drafts of FM 100-1 remained an arcane art, limited mostly to places such as Carlisle Barracks and DCSOPS.

Two Parallel and Separate Revivals

A decade after its withdrawal from Vietnam, the U.S. Army was on its way to rebuilding itself as a credible fighting force. The intellectual foundations for that process rested with the revitalization of tactics and strategy during the 1970s, legacies of which still exist in the present day. However, the Army never successfully bridged the gaps between tactical and strategic thought. Within the U.S. Army, the notion of campaigning, let alone operational art, effectively did not exist at the time. However, those disparate revivals became the basis for the Army’s formal development of operational art, an innovation that could not have existed without the foundations in tactics and strategy previously laid down.

DePuy’s efforts to reform how the Army fought seemed unsuccessful to many at first. The way in which DePuy imposed the new doctrine left little room for debate, and the critics of the doctrine, at least in print, outweighed its advocates. The criticisms of the 1976 FM 100-5 pointed out its excessive focus on Western Europe, its emphasis on purely qualitative factors on

¹³¹ GEN Edward C. Meyer, “Memorandum to Commanding General, U.S. Army Training and Doctrine Command,” February 27, 1981, Drafts and Correspondence Concerning FM 100-1, U.S. Army Military History Institute, Harry G. Summers Jr. Papers.

the battlefield, and its focus on fighting the first battle of a war to the exclusion of much else. What those criticisms missed was actually the enduring legacy of the 1976 manual.

DePuy intended for the 1976 FM 100-5 to lay out a method for fighting on a mechanized battlefield in a joint and multinational environment. However, the U.S. Army's most significant legacy from the development of that manual was the centrality of doctrine to equipment and training. Not only did DePuy revise the body of Army doctrine—using FM 100-5 as a template—but FM 100-5 marked the first formalized use of doctrine to drive acquisitions, replacing the historical pattern of a purely reactive response to existing programs and systems.¹³²

Under DePuy, the Army's doctrine lost its philosophical tone and became something much less theoretical. DePuy's reaction to Cushman's abstractions in FM 100-5 (Test) and "The Division in the Defense" were still felt throughout the 1980s as the term "How to Fight" remained in infantry and combined arms doctrine.¹³³ Starry's actions with FM 100-1 were fully consistent with DePuy's essentialist view of doctrine. The ARTEP and the National Training Center that emerged from Gorman's Combined Arms Training Center proposal provided a crucible for that doctrine.¹³⁴ DePuy's reform of the Army's practice of tactics far outlived the concept that was its vehicle. The codification of that practice through the total revision of the Army's important doctrinal manuals was no less important.

¹³²The role of doctrine as a central concept for combat developments still lives on in the present-day Joint Capability Integration and Development System, in which doctrine dictates requirements to drive future acquisitions. Office of the Joint Staff J-8, "Chairman of the Joint Chiefs of Staff Instruction 3170.01G, Joint Capabilities Integration and Development System" (U.S. Joint Chiefs of Staff, March 1, 2009).

¹³³ Several doctrinal manuals received the qualifier "(HTF)" in its designations, meaning that they were written as a prescriptive method on how to fight. Even as late as summer 1993, the author, as an Army Reserve Officer Training Corps cadet, was issued a small pamphlet on light infantry combat operations titled "How to Fight Manual," in the same basic camouflage appearance as the 1976 FM 100-5.

¹³⁴ Chapman, *The Army's Training Revolution, 1973-1990: An Overview*, 19–20, 25. The National Training Center opposing forces, dressed in uniforms with red stars and Soviet-style rank insignia, labeled themselves as the "32nd Guards Motorized Rifle Regiment and the 125th Guards Tank Regiment."

Killing the “Mobilization Army” was a prescient step. Deploying a force to Europe in response to a contingency was the basis of a 1978 deployment exercise called NIFTY NUGGET. The exercise, conducted across the Department of Defense and other federal agencies, was a simulation of a full mobilization required for a general war against the Soviets. The exercise itself was a wakeup call for the Department of Defense, highlighting systemic shortfalls in ammunition, equipment, and personnel. The simulated outcome of European combat in NIFTY NUGGET was sobering; one participant was quoted as saying that “the Army was simply attrited to death.” Subsequent exercises such as PROUD SPIRIT, conducted under a less demanding scenario, provided equally dismal assessments of the United States military’s ability to move and sustain the forces necessary to prevail against a Soviet attack.¹³⁵

It was plainly obvious to even casual observers of NIFTY NUGGET and PROUD SPIRIT that the U.S. Army had to be a force-in-readiness because a war against the Soviets would be over, even in simulation, within weeks of its commencement. DePuy, Gorman, and Starry saw the path to achieving the required readiness to fight as one of improving the tactical effectiveness of the Army, an effort which they could directly control.

DePuy’s focus on tactics reflected his own and more general myopia. As far as the Army (and DePuy) was concerned, all that was not strategy was tactics. The practice of tactics was mostly at the brigade and battalion task force level. The only large-scale maneuvers occurred in the REFORGER (Return of Forces to Germany) exercise, a live rehearsal for the strategic deployment of forces to Germany in response to a Soviet attack.¹³⁶ Even the so-called National

¹³⁵ John J. Fialka, “The Pentagon’s Exercise ‘Proud Spirit’: Little Cause for Pride,” *Parameters* XI, no. 1 (March 1981): 38–39. Edith M. Boldan, ed., *Department of the Army Historical Summary: Fiscal Year 1979*. (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1983), 6. An overview of the myriad problems that occurred in NIFTY NUGGET appears in Gail E. Yoshitani, “The Power of Simulation” (Master’s thesis, Duke University, 2001), 7–33.

¹³⁶ Tauschweizer, *The Cold War U.S. Army: Building Deterrence for Limited War*, 190.

Training Center did not formally train forces above the battalion level until 1987.¹³⁷ The demonstration at Grafenwöhr that gained von Reichert's public endorsement was one of battalion-size ambushes in conjunction with joint fires to destroy as much of an attacking Soviet force as possible. The primary goal of those actions was destruction of an enemy, which was only incidentally related to NATO's strategic aims. Starry realized the limitations of what these discrete tactical engagements could accomplish when he tried to implement the new doctrine within V Corps.

In framing the 1976 FM 100-5 almost exclusively at the tactical level, DePuy focused on training (relying on Gorman's work) to impart rules of thumb that could substitute for the judgment that came from education. Looking back a decade later, DePuy commented that FM 100-5 was "an operator's manual for the division level and below." Its tone, content, and graphical format, he admitted, represented a deliberate attempt to "retrain the United States Army after Vietnam."¹³⁸ While strategic considerations drove the tactics, there was no treatment of strategy in the 1976 FM 100-5.

The 1976 FM 100-5 did not address larger unit operations either. The focus on divisions and smaller units ignored the multinational army groups or joint unified commands that were responsible for translating theater-level strategic guidance into tactical direction for the divisions. The U.S. Army's equities (and personnel investments) in those commands, however significant, did not allow it to prescribe doctrinal guidance for organizations it did not own. As a result, the highest level doctrine that TRADOC could develop was for the corps, and the intent was to address that subject after FM 100-5. Although CAC had developed FM 100-15 (Test), *Larger Unit Operations* in 1974, that manual also became a casualty of DePuy's centralization of

¹³⁷ Anne W. Chapman, *The National Training Center Matures: 1985-1993* (Ft. Monroe, Va.: Military History Office, United States Army Training and Doctrine Command, 1997), 39.

¹³⁸ DePuy, interview, May 16, 1987.

authority and the first post-1976 edition of FM 100-15 published long after Active Defense was rescinded.¹³⁹

DePuy attempted to address this void in strategy and larger unit tactics indirectly. He requested TRADOC oversight of all of the Army's professional military education schools, including USAWC, which had always been a field operating agency of the Army Staff. By owning those schools, DePuy intended to distribute responsibilities for division and corps doctrine to CAC, while making USAWC responsible for corps, armies, army groups, and theater doctrine. The overlap at the corps level was deliberate, as the corps level was immediately subordinate to a combined army group and thus had to be cognizant of the strategic considerations affecting the army group. The corps, by structure, was also the smallest organization possessing sufficient combined arms organizations necessary for sustained land operations.¹⁴⁰ As it turned out, the USAWC remained separate from TRADOC, and the curriculum at CGSC did not address the void that existed above the tactical level. Only the USAWC curriculum, uniquely addressing strategy and policy as it related to the military, was presumably capable of filling that void, and aside from FM 100-1, which was not doctrine as much as philosophy, USAWC did not write doctrine.¹⁴¹

The divide between TRADOC and USAWC was not purely academic but also cultural. Starry, informed by his observations of the development of the 1976 FM 100-5, was also DePuy's heir apparent as commanding general of TRADOC and continued DePuy's trend towards tactical doctrine as "operator's manuals." The internal debate over FM 100-1 was a friction point between the Army's tactical revival, exemplified by Starry and his doctrine writers

¹³⁹ Department of the Army, *Field Manual 100-15 (Test), Larger Unit Operations* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1974). The first approved version of FM 100-15 did not publish until 1989.

¹⁴⁰ "The Further World of the TRADOC" remarks at TRADOC commanders' conference, in Swain, Conway, and Gilmore, *Selected Papers of General William E. DePuy*, 244–246.

¹⁴¹ TRADOC was eventually successful in gaining control of USAWC, albeit in 2003.

at CAC and TRADOC, and the separate revival of the Army's strategic conscience, exemplified by Merritt, Otis, and Summers at USAWC and DCSOPS. While not as irreconcilable as the differences between Cushman and DePuy in the FM 100-5 rewrite, it demonstrated the dichotomy that needed to be bridged before the Army could address the divergent but critically important trends that both represented. Meyer's decisions as CSA were the trump card for those who sought to prevent strategic irrelevance by inappropriate tactical bias, with FM 100-1 as one of the battlegrounds. The other area of contention proved to be the popular consciousness. While FM 100-5 was emblematic of the changes in tactics in the 1970s, Harry Summers' *On Strategy* was equally so for strategy.

The importance of *On Strategy* is hard to overstate. In the words of Colonel Douglas V. Johnson II, who inherited the development of FM 100-1 from Summers at USAWC in 1985:

On Strategy was the best thing that has happened to the Army between Vietnam and 1985. It gave the military the intellectual basis for saying to those in government that your decisions cost lives and treasure. You must be disciplined in thinking through what you want to do and how badly you want to do it. The military will do whatever you direct even if it is a fool's errand.¹⁴²

By creating a readily accessible and widely published book that illustrated the interface of strategy between policy considerations and military tactical actions, Summers provided a powerful case study for illustrating the tactical and strategic consequences of the failure to set termination objectives in a war.

Lykke's model of strategic ends, ways, means, and risk, while far less known by the public than *On Strategy*, was also important. Lykke's model of strategy has become the *de facto* accepted framework for how strategies are expressed, not only within the Department of Defense, but also throughout the U.S. government. It provided an intellectual construct through which strategists could articulate the broad implications for the future, and formed the

¹⁴² Douglas V. Johnson II, email to author, December 3, 2011.

cornerstone for future work in strategic art. Whereas Summers provided the definitive post-Vietnam case study for strategy, Lykke provided a method to apply the lessons of that case study for the future.

The successes in reviving the theory and practice of tactics and strategy, however, occurred in generally discrete realms. FM 100-5 was purely a manual of tactics, oriented on the division level and below. DePuy, Gorman, and Starry were the prophets of that tactical revolution. FM 100-1, on the other hand, focused on the institutional roles of the Army and was a deliberate attempt to reframe principles at the strategic level. There was effectively no linkage between the two manuals, and the philosophies espoused by the authors of the two manuals were so diametrically opposite that a bridge was not possible. Meyer's editorial intervention on FM 100-1 marked a temporary victory for Merritt, Summers, and those who sought to protect strategy's place in the Army. Unfortunately, they could do relatively little to address the wider void regarding strategy. Although CGSC taught a brief overview of strategy in its core curriculum, the fact remained that most Army officers did not truly study strategy until (and if) they attended USAWC, typically as colonels.¹⁴³ Only a tiny fraction of the officer corps would ever attend a senior service college of any kind.

Operational art simply did not exist as a part of the lexicon. The internal debate over the 1981 edition of FM 100-1 was effectively over primacy and not the coexistence of two equally important milieus. DePuy acknowledged the absence of operational art in FM 100-5 in a 1986 oral interview:

Those of us who wrote 100-5 in '76 were not part of the renaissance of "operational art." It was not part of our lexicon and not part of our thinking process. It was a deficiency of which we were simply not aware. Ironically, Active Defense was in some ways driven by operational considerations but they were German, not ours. "Forward Defense" is an

¹⁴³ U.S. Army Command and General Staff College, "College Catalog, 1977-1978" (Fort Leavenworth, Kan., 1977), V-4, College Catalogs, Combined Arms Research Library.

operational consideration tactically executed. But of course we did not say so because the operational level was not part of our consciousness. We were tactical guys by self-definition and preference. We thought the problem facing the Army was “tactical performance.” We were only half right.¹⁴⁴

DePuy recognized the limits of that approach in a letter to Major Paul Herbert, whose dissertation at the Ohio State University covered the development of the 1976 FM 100-5. DePuy was candid: “the greatest error we made was to focus 100-5 on the tactical level as opposed to the operational level. This was a major flaw and is leading to very dangerous misconceptions by the Army today. Because of this error we did not hold forth any real hope of victory in Europe—just one hell of a battle prior to going nuclear.” Even if the Army had not been the shattered institution that it was in the 1970s, the discontinuities between the strategy of forward defense and its tactical implications for a defender who had to execute that strategy were unpleasant at best. DePuy added a sobering postscript:

...Active Defense addressed...how the 3rd Armored Division in V Corps would hold off a Russian army of about five divisions, not how CENTAG (Central Army Group) or Allied Forces Central Europe would win the war...Soldiers do not like to have a mission which has no happy ending.¹⁴⁵

Starry recognized some of the same limitations when he tried to implement Active Defense in V Corps. In spite of the political constraints imposed by the forward defense strategy, Active Defense stood a chance, however small, of working if the Soviets attacked in a single echelon. Neither the strategy of forward defense nor the tactics of active defense had an answer for the second Soviet echelon at the frontal level that was expected to appear less than three days after NATO defenders spent themselves on the first echelon.¹⁴⁶ Clearly, a better solution was required, one that was in the works at Fort Leavenworth in the 1980s.

¹⁴⁴ DePuy, interview, May 16, 1987.

¹⁴⁵ DePuy, interview, May 16, 1987.

¹⁴⁶ A common unclassified source was the U.S. Army Intelligence and Threat Analysis Center’s 1978 *Soviet Army Operations* manual, but one of the most influential studies was a classified study, W. R. Bell, et al.,

The foundations for that development were already in place. The backlash against FM 100-5 within the Army and promulgated by other observers such as Lind created indirectly an environment that fed the next major doctrinal development within the Army. That development was to become the U.S. Army's central operational concept through the end of the Cold War and beyond. The fruitful discourse on the doctrinal direction of the Army resulted in a concept that marked the formal introduction of the term "operational art" into Western military thought.

Holding Pact Second Echelon Forces At Risk (McLean, Va.: BDM Corporation, dated March 31, 1979), which became known more informally as the "BDM Echelonment Study."

Chapter 4

AirLand Battle and the Formal Introduction of Operational Art to the U.S. Army

“Studies involving serving officers portray today’s Army and its leadership as the best in their memory . . . With these accolades we could rest on our laurels, but more remains to be done if we are to transform a good Army into a great Army.”

General John A. Wickham, Jr. Chief of Staff of the U.S. Army
“A Letter to the Army’s General Officers on Innovation,” January 16, 1987¹

AirLand Battle doctrine enjoys a particularly honored place in the history of the U.S. Army. The usual narrative of the changes in doctrine in the 1970s and 1980s describes a rebirth of the Army and a revolution in military thought that emerged from the deep dissatisfaction with what had happened in Vietnam.² In reality, the emergence of AirLand Battle reflected its institutional roots. The changes in tactics that emerged from the Active Defense doctrine led to the recognition that improved tactics alone could not address the challenges the U.S. Army faced, especially in the defense of Western Europe. The articulation of tactics as the basis for a doctrinal solution was consistent with the Army’s prevailing culture. The discourse about that doctrine in the Army’s professional journals, in conjunction with the work of several influential but junior intellectuals in the ranks, gave rise to the Army’s first true articulation of operational art, and with it some of the institutions necessary to foster its theory, education, and practice. However, the infusion of this knowledge at the operational level could not offset the Army’s larger cultural bias towards tactics, nor could it address certain elements of operational art over which the Army had no authority.

¹ GEN John A. Wickham Jr., *Collected Works of the Thirtieth Chief of Staff, United States Army* (Washington: Headquarters, Department of the Army, 1987), 305.

² Steven Metz, “The Next Twist of the RMA,” *Parameters* XXX, no. 3 (Autumn 2000): 40.

The Evolution of Tactics after Active Defense

The central figure in the development of the tactics of the U.S. Army through the late 1970s and early 1980s was unquestionably General Donn A. Starry. A protégé of General William E. DePuy, first commander of the U.S. Army Training and Doctrine Command (TRADOC), Starry was one of the primary authors of the 1976 edition of Field Manual (FM) 100-5. Starry was also one of the first to truly explore the implications of that manual's tactics when he tried to implement them as a corps commander. Those experiences were the basis for the changes that Starry directed at TRADOC as DePuy's successor.

As has been shown, Active Defense, the basic tactical concept in the 1976 FM 100-5, was not rigorously vetted before its formal publication to the Army. DePuy's imprint on the manual was unmistakable, in spite of the opposition of Army leaders such as Lieutenant General John H. Cushman. Indeed, DePuy's peremptory manner in publishing the Active Defense left the concept's actual implementation to the family of "how to fight" doctrine manuals that DePuy intended to have produced. Although the manuals for battalion and subordinate units were published within a year of FM 100-5, the first manual to articulate clearly what the Active Defense required in execution was Field Manual 71-100, *Division Operations*, publishing in September 1978.³

By that time, Starry had departed Fort Knox to command V Corps, assuming command on February 16, 1976. V Corps was one of the two corps headquarters under U.S. Army Europe (USAREUR), the Army's largest subordinate command under the North Atlantic Treaty Organization. The commander of USAREUR, a 4-star general, was also the commander of the

³Richard M. Swain, "AirLand Battle," in *Camp Colt to Desert Storm: The History of U.S. Armored Forces*, ed. George F. Hofmann and Donn A. Starry (Lexington: University Press of Kentucky, 1999), 377.

Central Army Group (CENTAG), a NATO formation with responsibility for defending the approaches to the southern half of West Germany.⁴

Starry was in a unique position. As one of the primary authors of the 1976 FM 100-5, he could see what his doctrine looked like in implementation at V Corps. Starry's efforts to make Active Defense work resulted in a series of concepts that evolved through his term at V Corps and afterwards when Starry became commanding general of TRADOC. That conceptual evolution provided the practical foundation for progressive refinement of the tactics in the 1976 FM 100-5.

As a corps commander, Starry recognized a gap between strategy and tactics. According to later recollections, that gap had become apparent to him as far back the early 1960s, when he was a brigade operations officer and a tank battalion commander. The tactics to blunt a Soviet penetration attack through a mobile defense required a defense in depth. However, the West Germans were adamant on a forward defense to prevent the Soviets from occupying large portions of West Germany, and they considered attacking the Soviets forward of the inner German border as unacceptably provocative. Even if the Germans had been willing to accept the notion of cross-border attack, NATO forces lacked the intelligence, surveillance, target acquisition, and strike capabilities to attack Warsaw Pact forces beyond those forces already joined to close combat. The hazard was that the Warsaw Pact could overwhelm NATO defenses through sheer numbers. The only alternative was nuclear release, an option the West Germans

⁴ The CENTAG commander, an American general, reported through NATO channels to Commander-in-Chief, Central Region (CINCENT), a German general located at Brunssum, Netherlands. CINCENT in turn reported to Supreme Allied Commander, Europe (SACEUR), an American general or admiral who was also the Commander in Chief, U.S. European Command (CINCEUR). Under purely U.S. command channels, the USAREUR commander was under the combatant command of CINCEUR, a parallel command relationship to the NATO command relationship through CINCENT to CENTAG.

obviously did not favor. The resulting paradox of tactics and strategy represented a no-win situation for NATO.⁵

While Starry could not hope to affect the NATO alliance's strategy, he could affect the tactics that those forces used. The springboard for Starry's work on Active Defense was "Modern Armor Battle," a concept paper he had written years prior in response to a request from General Creighton Abrams. When he returned to Europe, Starry vetted the Active Defense for feasibility through the Battlefield Calculus, a simulation developed by Daniel McDonald of the BDM Corporation. The result was a concept that Starry called the Corps Battle.⁶

The BDM Corporation's other significant contribution to the development of the concept was a study of Soviet echelonment, or how the Soviets would position and maneuver forces at the theater level. In response to a request from the Defense Nuclear Agency and the Department of the Army, BDM conducted a study of Soviet military tactics, doctrine, and combined arms operations in 1977-1978. The result of the study was a reference manual called *Soviet Army Operations*, published under the auspices of the U.S. Army Intelligence and Threat Analysis Center in April 1978. While the manual focused primarily at the Soviet division and below, it did briefly mention multiple echelonment of forces at the army and *front* level.⁷ Much of the available literature that went into BDM's work came from classified translations of Soviet military thought from the early 1960s, when Nikita Khrushchev was still the Soviet First Secretary. The majority of the Central Intelligence Agency's studies of Soviet doctrine and combined arms warfare also dated from the same period. Most of the CIA's reports were

⁵ GEN Donn A. Starry, letter to Richard M. Swain, June 7, 1995, 5, Combined Arms Center Historical Files, Combined Arms Research Library.

⁶ *Ibid.*, 14-16. The Corps Battle script itself appears in GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 1 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 285-294.

⁷ Department of the Army, *Soviet Army Operations*, IAG-13-U-78 (Arlington, Va.: U.S. Army Intelligence and Threat Analysis Center, 1978), 2-5-2-14.

translations and analyses of articles appearing in both open source and classified Soviet journals.⁸

In 1979, at the direction of General George S. Blanchard, commander of USAREUR, BDM developed the first study of the likely full disposition of Warsaw Pact forces to be employed in an offensive into Western Europe.⁹ The study, published as *Holding Pact Second Echelon Forces at Risk*, sought to identify the requirements, both conventional and nuclear, to target Warsaw Pact divisions not initially committed or engaged in close combat with Western ground forces. The premise to holding those second echelons at risk was making the material cost of employing those second echelon forces so prohibitive as to make it a credible deterrent to a Soviet attack.¹⁰ *Holding Pact Second Echelon Forces at Risk* was highly influential, as it provided a context for the criticisms levied against Active Defense and the conflict between the doctrine of the U.S. Army and that of its NATO allies. It also provided a definitive threat model that described not only the composition and likely maneuver of Soviet forces, but also the expected timelines for the arrival of various echelons of those forces.¹¹ Those timetables influenced Starry's conceptual thinking on how to make Active Defense work at V Corps.

Starry benefited from a unique perspective as both a theorist and a practitioner. Even if he had not been one of the primary authors of the 1976 FM 100-5, what distinguished his approach from his contemporaries was his use of terrain walks with his subordinate commanders at division, brigade, and battalion level.¹² By mid-1977 and numerous Corps Battle terrain walks, Starry was confident that his tactical units could prevail at the small unit level, but that

⁸ David A. Glantz, e-mail to author, December 15, 2011.

⁹ LtGen (Ret) Paul K. Van Riper, interview by author, March 28, 2011, notes in author's possession.

¹⁰ W. R. Bell et al., *Holding Pact Second Echelon Forces at Risk*, vol. 2 (McLean, Va.: BDM Corporation, 1979), 5–6.

¹¹ *Ibid.*, 2:24.

¹² Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:27.

tactical success only addressed the first echelon of the Warsaw Pact threat. The role of the corps and larger units in the defense remained unresolved. In the worst case, V Corps and other NATO tactical units could prevail against the first wave of the Soviet attack but would be annihilated by the follow-on forces that were less than three days behind. Tactical excellence in isolation was irrelevant.

One of Starry's observations from the Corps Battle was that purely mathematical solutions, usually based on relative firepower, rendered results that he and his subordinates could not reconcile with their own professional judgment, especially when applied to larger units where firepower calculations did not apply.¹³ A purely material view of destroying the enemy, the approach that William S. Lind had disparaged as an "attrition/firepower doctrine," could not achieve the strategic ends required to assure success for current NATO strategy.¹⁴

Two events emphasized the need for a solution above the tactical level. The first was the September 1976 REFORGER exercise, in which Starry, commanding V Corps, was unable to communicate reliably via radio with his subordinate units, making it impossible for him to command or control the corps.¹⁵ As a corps commander, Starry was unable to coordinate his subordinate commanders' actions to accomplish anything beyond disaggregated division engagements. The risk, especially against a numerically superior Soviet adversary, was the defeat in detail of the corps, resulting in annihilation of his command.

¹³ Ibid., 1:345. The employment of relative firepower calculations works well for smaller units where the effects of individual weapons systems can be easily modeled. When dealing with larger units, typically above brigade size, the effects of individual weapons systems was not against those larger units as much as it was their component parts or subordinate units. For example, modeling the battlefield effects for a single machine gun makes sense against individuals, but not against a much larger unit such as an infantry division.

¹⁴ William S. Lind, "Some Doctrinal Questions for the United States Army," *Military Review* LVII, no. 3 (March 1977): 57–65.

¹⁵ LTG (Ret) Wilson A. Shoffner, interview by author, December 15, 2011, notes in author's possession. Shoffner was Starry's corps G-3 (operations) officer and witnessed this event firsthand.

The second revelation occurred on February 10, 1977 near Fulda, Germany, when the 11th Armored Cavalry Regiment observed some 160 Soviet tanks that had appeared seemingly out of nowhere. That tank force was the independent tank regiment of the Soviet 8th Guards Combined Arms Army. More alarmingly, it had infiltrated over 150 miles undetected from its garrisons in Dresden to the border. None of the intelligence assets available to U.S. Army Europe provided any early warning; the first contact with that tank regiment was its observation on ground surveillance radar and a scout hearing noises of armored vehicles, well inside the five kilometer exclusion zone from the border. That incident, combined with a staff ride to the Golan Heights in May 1977 at the invitation of Israeli Generals Musa Peled and Rafael Eitan, convinced Starry of the necessity of finding technical, tactical, and operational ways “to fight and win with conventional means, below the nuclear threshold,” with the intent of deterring the Soviets from employing tactical nuclear weapons of their own. It also underscored Starry’s convictions for a corps commander to control directly the reconnaissance, surveillance, target acquisition, and strike assets to identify, target, and attack forces beyond the direct fire range of his ground combat forces.¹⁶

The result of Starry’s focus on the importance of deep surveillance, target acquisition, and attack was a further refinement of the concept called the Central Battle. That concept marked the debut of some of the terms that would appear in future doctrine. In a briefing of the concept to a chapter of the Association of the United States Army in 1978 at Fort Benning, Georgia, Starry was emphatic:

“Simply put, those concepts tell us we must see deep to find the second echelon, move fast to concentrate forces, strike quickly to attack before he can break into our defense, and finish the fight quickly before the second echelon closes.”¹⁷

¹⁶ Starry, June 7, 1995, 16–17. The furor over the absence of any early warning of the arrival of that tank regiment resulted in the relief of the USAREUR Deputy Chief of Staff for Intelligence.

¹⁷ Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:313.

Starry's discussion of tactics portrayed the Central Battle as a progressive refinement of the Active Defense. He judged the most essential activity for battalions and below as killing enemy vehicles, euphemistically described as "servicing targets," in the same stark tone that DePuy had advocated in the Active Defense:

At battalion and below, the battle is won by destroying enemy systems—servicing targets. A simple explanation of servicing in the defense is to determine how many targets must be destroyed in time and space in order to destroy the enemy attack. A battalion might have to destroy as many as 250 targets in about 10 minutes; a division more than 2,000 targets in hours or perhaps days; a corps more than 3,000 targets in perhaps 3 to 5 days.¹⁸

In the Central Battle formulation, Starry sought to develop a balance not only of specific weapons systems, but also in force structure to "stress the enemy and to take stress off other friendly systems." Unlike previous concepts, the Central Battle was a specific attempt to attack systems other than just combat vehicles. It targeted a Soviet force's command and control, communications, and logistics to break its cohesion.¹⁹ Starry reiterated these points in "A Tactical Evolution – FM 100-5," an article appearing in the August 1978 *Military Review* that summarized much of the Central Battle concept for those who had not had a chance to see his presentations or slides in person.²⁰

Starry was cognizant of the backlash that resulted from DePuy's imposition of Active Defense on the Army and was determined to gain a consensus on the concept with its most important audience—those who were to use it.²¹ "A Tactical Evolution" was not just a presentation of the concept as much as it was an attempt to gain support from the rest of the Army for the upcoming concepts, something that Starry was well-positioned to do as the

¹⁸ Ibid., 1:314–315.

¹⁹ Ibid., 1:315.

²⁰ GEN Donn A. Starry, "A Tactical Evolution - FM 100-5," *Military Review* LVIII, no. 8 (August 1978): 2–11.

²¹ Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:28.

TRADOC commander. The briefing at Fort Benning was but one of many. Recognizing that the concept required a spokesman, Starry reorganized the TRADOC headquarters, creating the office of the TRADOC Deputy Chief of Staff for Doctrine and appointing newly-promoted Brigadier General Donald Morelli as Starry's surrogate to brief the operational concept.²²

One of Starry's subordinate organizations that required little salesmanship was the Field Artillery Center at Fort Sill, Oklahoma, under the command of Major General Jack Merritt. Starry brooked no illusions about the role of Field Artillery branch in the second echelon attack problem and asked Merritt to start looking at the mechanics of deep attack. While still a colonel, Merritt had co-authored a paper with Pierre Sprey, a close associate of John R. Boyd, a retired Air Force fighter pilot who had significant influence on Lind's perspective about U.S. military thought.²³ However, as sympathetic as Merritt may have been to Boyd, Sprey, and even Lind, Merritt's direct influence on AirLand Battle appeared mostly via his organization's contribution to a further refinement of the Central Battle.

To this point, any discussion of strategic imperatives was incidental at best. If they appeared, it was because of the work of such individuals as Lind and Steven Canby, who questioned some of where Active Defense fit in terms of a larger strategy and argued for a "maneuver" approach instead of what they perceived as an attritional approach in Active Defense.

Some of the work on echelonment had come down to the Modern Battlefield Techniques Committee, a small group that developed initiatives for Merritt's deputy, Brigadier General

²² Ibid.

²³ GEN Donn A. Starry, Letter to Major General Jack N. Merritt, Commandant, U.S. Army Field Artillery Center, July 19, 1976, Personal Letters Reference Military Concerns, Box 6, Jack N. Merritt Papers, U.S. Army Military History Institute. The paper in question, "Negative Marginal Returns in Weapons Acquisition," was reprinted in *American Defense Policy*, 3rd ed., Richard G. Head and Ervin J. Rokke, eds. (Baltimore, Md.: Johns Hopkins University Press, 1973).

Edward Dinges. One of the members of the committee was Major Richard Hart Sinnreich, whose examination of the mechanics of what was called deep attack resulted in a presentation called the Interdiction Planning Brief.²⁴ That briefing linked deep attack of the Warsaw Pact second echelon to enable forces engaged with the first echelon to counterattack, rather than the withdrawals under direct contact that characterized the Active Defense in practice. Such an assertion hinged on a fundamental difference from the Central Battle, which were focused on destruction of Warsaw Pact forces through attrition of combat systems.²⁵

The most important advocate for the Interdiction Planning Brief was DePuy, who openly endorsed the Interdiction Planning Brief at a conference at Fort Sill in summer 1979. DePuy told Starry to look carefully at the briefing, knowing of Starry's work on the Central Battle.²⁶ As another indicator of DePuy's inclinations, he chaired a three-day conference in May 1980 on tactical warfare. The conference included two unusual guests. General Hermann Balck and General-Major F.W. von Mellenthin had commanded and been chief of staff respectively at the corps, army and army group levels against the Soviets in World War II. Using the 3rd Armored Division in V Corps in simulation, Balck and von Mellenthin proposed an elastic defense and a counterattack similar to the one that Sinnreich had set forth in the Interdiction Planning Brief.²⁷

Sometime in late summer 1979, Starry received the Interdiction Planning Brief. Reading that document led him to start setting the tactical concepts of the Central Battle in a strategic context. Lieutenant General William R. Richardson, commander of the Combined Arms Center,

²⁴ The "deep" in deep attack referred to affecting the enemy beyond the reach of the front-line maneuver brigades' organic weapons.

²⁵ COL(Ret) Richard Hart Sinnreich, interview by author, January 9, 2012, transcript in author's possession. Most of the discussion up to that point was on the Central Battle, but another part of that concept was the "Force Generation Battle," which addressed the resources by which a combatant might introduce follow-on forces into close combat. In the case of the Warsaw Pact, that meant attacking forces behind the first operational echelon.

²⁶ Ibid.

²⁷ BDM Corporation, *Generals Balck and von Mellenthin on Tactics: Implications for NATO Military Doctrine*, BDM/W-81-077-TR (McLean, Va.: BDM Corporation, 1981), 23–30.

was also present and directed that Dinges and Sinnreich present the Interdiction Planning Brief to Richardson's Combined Arms Combat Development Activity (CACDA). The last audience for the Interdiction Planning Brief was General Edward C. "Shy" Meyer, the Chief of Staff of the Army (CSA). Meyer, Starry, and Richardson all directed that the conceptual work in the Interdiction Planning Brief be put into the emerging tactical doctrine, which Dinges and Sinnreich did by fall 1979.²⁸ Dinges and Sinnreich also published a version of the briefing in the January-February 1980 *Field Artillery Journal*, providing the interdiction concept to a much larger audience.²⁹

The syncretism of the Interdiction Planning Brief with the previous work on the Central Battle resulted in a concept called the Extended Battlefield. Rather than a pure focus on attrition of Soviet units and combat systems, the Extended Battlefield established a single context for the coordination of the first and second echelon battles, rather than the discrete treatments of close combat and deep attack in the Central Battle.

Richardson, using his authorities as CAC commander, established the Extended Battlefield Contact Team from personnel at CAC and at the Field Artillery Center to familiarize audiences throughout the Army with the Extended Battlefield.³⁰ The team provided briefings and seminars to units from the division level upwards to assist them in working through how implementation would work for the concept. Those presentations were vital for those receiving the doctrine to turn Starry's and Morelli's conceptual presentations, as well as in the writings seen in *Military Review*, into practice.³¹

²⁸ Sinnreich, interview, January 9, 2012.

²⁹ BG Edward A. Dinges and MAJ Richard H. Sinnreich, "Battlefield Interdiction: Old Term, New Problem," *Field Artillery Journal* 48, no. 1 (February 1980): 14–20.

³⁰ LTG (Ret) Leonard D. Holder, interview by Kevin C. M. Benson, December 5, 2008, transcript in author's possession.

³¹ LTG William R. Richardson, "Winning on the Extended Battlefield," *Army* 31, no. 6 (June 1981): 42.

The second conceptual expression above the tactical level was a concept called the Integrated Battlefield, which saw first light in late 1980.³² The “integrated” part of the concept stemmed from the inclusion of nuclear fires, in comparison to the Central Battle and its predecessors, which envisaged only the employment of conventional munitions.³³ Starry recognized that the lengthy process of gaining nuclear release from the so-called National Command Authorities, combined with the likelihood of fratricide, made the employment of nuclear fires against the Soviet first echelon unlikely, and wanted Merritt to develop a better solution.³⁴ The Integrated Battlefield concept owed much to the Field Artillery Center’s Directorate of Combat Developments, headed by Colonel Anthony G. Pokorny, who had been Starry’s executive officer at TRADOC and thus a trusted agent in the development process. One of Pokorny’s key subordinates was Major John S. Doerfel, whose analyses on echelonment and close combat were critical in identifying the need for battlefield air interdiction (BAI) as an integral part of the concept—one of the true origins of the “AirLand” part of the title.³⁵ Doerfel’s and Sinnreich’s work showed that the Army could not deliver the nuclear fires required for the Integrated Battlefield on its own.

Up to this point, the various tactical concepts, whether the Corps Battle, Central Battle, Extended Battlefield, or Integrated Battlefield, existed only as a set of overhead projector viewgraph slides. Starry and Morelli’s effort to sell the concepts, assisted by the ongoing

³² Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:199–200.

³³ GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 2 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 1148.

³⁴ Starry was bluntly realistic: “We should emphasize the unlikelihood that tacnukes can indeed be used against first-echelon forces once the battle has been joined. This is so because of the present time requirements for securing release, troop warning, and so on. All these realistically will certainly inhibit if not prohibit timely use of tacnukes against first-echelon forces in contact.” *Ibid.*, 2:736. The term “National Command Authorities” refers to either the President or the Secretary of Defense.

³⁵ John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982* (Fort Monroe, Va.: Historical Office, U.S. Army Training and Doctrine Command, 1984), 35–37. Romjue uses the term “hold the enemy at risk,” an unmistakable reference to the BDM study.

discourse in *Military Review* and other journals, were gaining traction. However, Starry did not want to turn those slides into a formal concepts document. One rationale was that the concept and slides were still a work in progress, one that changed based on the questions of the audiences receiving the briefing. The other rationale was bureaucratic. Starry recognized that combat developers would start using a formally published concept to justify acquisitions programs, requiring coordination of the entire Army's staff, in turn ossifying the concept. Lieutenant Colonel Dennis Crumley, Starry's speechwriter, had observed that others were citing the concept briefings in their communications throughout the Army, while the amount of substantive change had reduced to the level at which codifying the concept was possible.³⁶

Starry directed formal publication of the Extended Battlefield in two products. The first was his article "Extending the Battlefield," which appeared in the March 1981 *Military Review*.³⁷ Starry, in his third year of command at TRADOC, recognized his time was drawing short. Getting the concept out in print was important, and the ongoing debate in *Military Review* in the wake of Active Defense made it the natural forum for his pronouncement.

Before officially promulgating the concept to the rest of the Army, some deliberation occurred within TRADOC over the name of the concept itself. The Integrated Battlefield or Extended Battlefield names did not resonate with a larger audience, and Starry was undoubtedly thinking about the difficulties that a name like "Active Defense" had brought.³⁸ Morelli suggested "AirLand Battle," the title of a chapter from the 1976 FM 100-5. The title originated in "Air/Land Operations," a chapter of the original A.P. Hill draft of FM 100-5 that DePuy had rejected in 1974. Although the previous chapter had no conceptual connection to the Extended

³⁶ Starry, *Press On!: Selected Works of General Donn A. Starry*, 2:1274–1275.

³⁷ GEN Donn A. Starry, "Extending the Battlefield," *Military Review* LXI, no. 3 (August 1978): 31–50.

³⁸ Romjue, *From Active Defense to AirLand Battle*, 44. GEN Donn A. Starry, letter to General William R. Richardson, Commander TRADOC, October 15, 1984, Box 12, William R. Richardson Papers, U.S. Army Military History Institute.

Battlefield, Morelli argued that an explicitly joint term like “AirLand Battle” would make the concept easier to sell, not only to its stakeholders in the Army, but also those in the Air Force who also shared responsibility for executing the parts of AirLand Battle that the Army could not.³⁹

General Wilbur L. “Bill” Creech, Starry’s counterpart at the U.S. Air Force’s Tactical Air Command (TAC), considered the Extended Battlefield a positive step for the Air Force, or at least the Tactical Air Forces for which he had oversight. Creech enthusiastically supported the concept-- and not coincidentally, the name “AirLand Battle” itself.⁴⁰ Creech’s support was especially important because the Air Force regarded air interdiction (without mention of “battlefield”) as its own domain, without involvement of the Army, in spite of the inclusion of BAI in the 1979 edition of Air Force Manual (AFM) 1-1, *Functions and Basic Doctrine of the United States Air Force*, the Air Force’s capstone manual.⁴¹ The Extended Battlefield and its integral element of BAI represented an extremely unwelcome intrusion into Air Force equities, since the Army was seeking to set an air commander’s priorities outside a land commander’s area of operations.⁴² Starry himself paid homage to Creech’s powers of persuasion, saying “we would not have an AirLand Battle had it not been for General Bill Creech.”⁴³

While some elements of the concept relating to actual control of air assets on the battlefield remained contentious, the coordination between TRADOC and TAC marked the first substantive work on joint concept development between the two services. The initial

³⁹ Starry, *Press On!: Selected Works of General Donn A. Starry*, 2:1148.

⁴⁰ Starry, letter to Swain, June 7, 1995. The term “tactical air forces” refers to those forces that were not devoted to strategic attack missions or training and education. Such forces would have included the air assets in TAC within the United States, U.S. Air Forces in Europe (USAFE), and Pacific Air Forces (PACAF).

⁴¹ Lt Col R. Kent Laughbaum, *Synchronizing Airpower and Firepower in Deep Battle* (Maxwell Air Force Base, Ala.: Air University Press, 1999), 14.

⁴² Sinnreich, interview, January 9, 2012.

⁴³ James C. Slife, *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984* (Maxwell Air Force Base, Ala.: Air University Press, 2004), 36–39.

coordination on the Extended Battlefield was a necessary step to other TRADOC-TAC functional concepts, the most significant of which were Joint Attack of the Second Echelon (J-SAK) to the Army and Joint Suppression of Enemy Air Defense (J-SEAD) to the Air Force.⁴⁴

The second formal product of the concept was TRADOC Pamphlet 525-5, *AirLand Battle and Corps 86*, which saw publication almost simultaneously with “Extending the Battlefield” in March, 1981. Indeed, the text of “Extending the Battlefield,” with the term “AirLand Battle” substituted for the “Integrated Battlefield” or “Extended Battlefield,” forms the first half of TRADOC Pamphlet 525-5. The second half was the Operational Concept for Corps Operations, which detailed the required capabilities of a corps five years in the future, and the first five appendices covered the organization’s specific responsibilities. The Corps 86 concept marked the first substantive guidance for the corps headquarters since the publication of FM 100-15, *Corps Operations*, in 1968.⁴⁵ TRADOC Pamphlet 525-5 marked the final conceptual refinement of the U.S. Army’s tactical foundations throughout the 1980s.

Revising FM 100-5

Starry’s progressive revisions of the Army’s tactical concept from the Modern Armor Battle to the Extended Battlefield were but one element of the changes in the Army’s doctrinal thought. The vehicle for that doctrinal thought was necessarily FM 100-5, which by 1979 showed the limitations of the approach DePuy had taken to promulgate it. The confusion, if not antipathy, regarding Active Defense was such that it virtually mandated a new manual.

⁴⁴ Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington, D.C.: Office of Air Force History, U.S. Air Force, 1987), 30–32. While J-SAK addressed Army concerns, J-SEAD was important to the Air Force since its tactical air forces could not support the J-SAK without the so-called “rollback” of enemy air defenses inherent to the J-SEAD concept.

⁴⁵ The appendices covered command, control, and communication; intelligence, surveillance, and target acquisition; target servicing; covering force operations; and interdiction, all functions specifically designated for the corps in the Extended Battlefield concept. U.S. Army Training and Doctrine Command, *TRADOC Pamphlet 525-5: Operational Concepts for the AirLand Battle and Corps 86* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1981), 25–53 passim.

The revision of FM 100-5 started with a June 1979 discussion between Meyer, at the time a lieutenant general serving as the Army's Deputy Chief of Staff for Operations, and Richardson, at the time a major general and Meyer's assistant Director for Force Development. Meyer, awaiting appointment as the CSA later that month, was concerned about the sole focus on tactics in the 1976 FM 100-5. He felt that such a focus did not place those tactics within its proper context of strategy, especially after the development of FM 100-1 the year prior. Meyer's concerns included the specificity of tactics to Central Europe to the exclusion of almost any other region, the predominantly defensive tone attributed to the Active Defense doctrine, and the need to address enemy tactics other than the breakthrough. Meyer sent Starry a letter recommending a revision to the manual, touching on its overly tactical focus, its seeming limitation to the Soviet threat in Central Europe, and its treatment of mechanized warfare to the virtual exclusion of any other types of warfare.⁴⁶

Starry's response to Meyer, while communicating some irritation, addressed Meyer's concerns point by point. As to the specificity of the doctrine, Starry emphasized the importance of the coordination with the Germans and their Army Regulation (*Heer Dienstvorschrift*, abbreviated HDv) 100/100 in the Central European defense as the most challenging problem for the Army. While Starry noted that adding provisions for combat in the Middle East and Korea were already underway, he was much less sanguine on other possible contingencies, such as surrogate forces and wars of national liberation.⁴⁷ Starry was critical of dissenters like

Lieutenant General John H. Cushman, who departed CAC to command I Corps Group in Korea.

⁴⁶Richard M. Swain, "Filling the Void: The Operational Art and the U.S. Army," in *The Operational Art: Developments in the Theories of War*, by B. J. C. McKercher and Michael A. Hennessy (Westport, Conn.: Praeger, 1996), 156.

⁴⁷ Surrogate forces refer to forces, often indigenous, operating in support of an external country's forces and objectives. The most common American employment of surrogate forces has been through U.S. Army Special Forces conducting one of their core tasks of unconventional warfare. "Wars of national liberation" was a likely reference to foreign internal defense, the conceptual counterpoint to unconventional warfare and another Special Forces core task.

Cushman, who DePuy had relieved of responsibilities for the 1976 manual, asserted that Active Defense did not apply outside Central Europe.⁴⁸ Others such as Archer Jones, a visiting history professor at the U.S. Army Command and General Staff College (CGSC), also pointed out the manual's absence of any discussion of combat other than in Central Europe.⁴⁹

Starry saw FM 100-15, the intended corps-level tactical manual, as the way to address Meyer's concerns on FM 100-5's focus on the breakthrough, stating that "we treated the threat that way simply because that was in so many ways the most difficult problem to solve." Starry also wanted to use FM 100-15 to address the Warsaw Pact second echelon, which Lind and other critics of the doctrine had also identified. Finally, Starry also saw FM 100-15 as a way to address doctrinal deficiencies in corps and theater level organizations, likely without having to revise the Army's capstone tactical manual, which was only three years old.⁵⁰ The implication of such a significant change within four years, the usual term of a TRADOC commander or CSA, was that the doctrine was defective and required immediate revision.

Richardson, who had departed duty as the Army's Deputy Chief of Staff for Operations (DCSOPS) to become the commanding general of CAC at Fort Leavenworth, began developing the doctrine. The first lead author of the writing team was Lieutenant Colonel Richmond B. Henriques, of the Department of Tactics at CGSC, who was one of the authors of Allied Tactical Publication (ATP) 35, NATO's equivalent manual to FM 100-5.⁵¹ The initial guidance to Henriques for the FM 100-5 rewrite was to produce an Americanized version of HDv 100/100. Although the NATO doctrine that informed HDv 100/100 also informed FM 100-5, the tactical and organizational differences between German and American doctrine proved too impractical to

⁴⁸ Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:295.

⁴⁹ Archer Jones, "The New FM 100-5: A View From the Ivory Tower," *Military Review* LVIII, no. 2 (February 1978): 31–32.

⁵⁰ Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:343–344.

⁵¹ Swain, "AirLand Battle," 382. DCSOPS is pronounced "dess-ops" in Army usage.

make work. In 1980, Lieutenant Colonel Huba Wass de Czege and Major Leonard D. Holder joined Henriques at CGSC to assist in the revision. Wass de Czege, the new lead author, had just departed battalion command, and came to the team at the recommendation of Major General Richard E. Cavazos, commanding general of the 9th Infantry Division. Holder had assisted Colonel Robert E. Wagner, commander of the 2d Armored Cavalry Regiment, who had penned “Active Defense and All That,” describing how a covering force might conduct counterattacks in the context of the Active Defense. All of the authors, while having strong tactical credentials, had not served in positions that gave much experience in strategy.⁵²

The first revision of FM 100-5, released as a coordinating draft on 9 February 1981, drew initially from the Integrated Battlefield and Extended Battlefield concepts, and was fundamentally a manual of tactics, reflecting Wass de Czege’s and Starry’s own predilections.⁵³ Its tone and approach was far more theoretically-grounded than the 1976 manual, but retained the practical focus on the problem of the Soviet second echelon, particularly in the chapters on tactical intelligence and “Air-Land Battle Operations.”⁵⁴ The conceptual basis for the new manual was the Extended Battlefield, but the revision expanded beyond that concept as a more general treatment of tactics. While the coordinating draft addressed the critics of the 1976 manual in returning the Principles of War to FM 100-5, the manual was devoid of any discussion of strategy.⁵⁵

⁵² LTG (Ret) Leonard D. Holder, interview by author, December 23, 2011, transcript in author’s possession. Holder assisted Wagner in writing “Active Defense and All That.” Holder, interview, December 5, 2008.

⁵³ This preference (and expert knowledge) appears in COL(Ret) Richard Hart Sinnreich, interview by Kevin C. M. Benson, January 14, 2009, transcript in author’s possession.

⁵⁴ Department of the Army, *Field Manual 100-5, Operations (Coordinating Draft)* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1981), 4-2 – 4-9, 7-1 – 7-37.

⁵⁵ *Ibid.*, 1-1 – 1-7, C-1 – C-11. One of the arguments for returning the Principles of War appears in MAJ Richard M. Swain, “On Bringing Back the Principles of War,” *Military Review* LX, no. 11 (November 1980): 46.

Starry was a significant influence through the early drafts. Before writing, Starry had looked at the previous editions of FM 100-5 going as far back as 1923, comparing the differences among the different editions, to provide a springboard for what he was seeking to develop. The manual also retained much of the earlier manual's focus on Central Europe, a point on which reviewers oriented on Korea were critical.⁵⁶ The other innovation in the manual consistent with Starry's own desires was the use of military history case studies to illustrate the principles the manual was attempting to communicate.⁵⁷

The coordinating draft manual itself placed substantial emphasis on the offense, centered on precepts like “see deep, move fast, strike quickly, finish rapidly, and use terrain,” all reminiscent of the Central Battle. The focus on the offense, while not explicitly a response to Lind and the other maneuver warfare advocates, addressed the most common complaint of the Active Defense.⁵⁸ Although most reviewers responded favorably, the most important reviewer was Meyer himself, who in a letter to Starry, was ebullient:

Since I was the DA [Department of the Army] weenie who told General Weyand to bless 100-5 (current) without DA staffing, I am culpable with you and Bill DePuy for some of its shortcomings...The new version is what we need today. Don't take a lot of time – get a few good wordsmiths to go thru and tune up. Take any major concerns expressed, before you toss them out as NIH [Not Invented Here], let me know what they are and who expressed them. You and I will decide – thumbs up or thumbs down! I believe we're close to the Capstone manual we need – let's expedite its completion. We can always adjust later if necessary. ...tell your troops they've made a major contribution.⁵⁹

⁵⁶ Major General MG Charles R. Sniffin, Comments on FM 100-5 coordinating draft to LTG William R. Richardson, Commandant, CGSC, March 23, 1981, Folder 6, Box 24, Donn A. Starry Papers, U.S. Army Military History Institute.

⁵⁷ Department of the Army, *FM 100-5 (Coordinating Draft February 9, 1981)*, P-II-2 – P-II-3. Starry had been instrumental in reintroducing military history across all of the TRADOC schools, the broad background on which appears in Roger J. Spiller, *In the School of War* (Lincoln: University of Nebraska Press, 2010), 143–158.

⁵⁸ Morelli, who as Deputy Chief of Staff for Doctrine bore the brunt of the criticisms from Lind and others, was sensitive to perceptions that the manual might be seen as a pure reaction to the maneuver warfare advocates – which the manual was not. MG Donald R. Morelli, letter to General Donn A. Starry, August 20, 1980, Folder 6, Box 59, FM 100-5 File, U.S. Army Military History Institute, Donn A. Starry Papers.

⁵⁹ General Edward C. Meyer, Handwritten comments on FM 100-5 coordinating draft to General Donn A. Starry, March 21, 1981, Folder 6, Box 59, U.S. Army Military History Institute, Donn A. Starry Papers.

Meyer had effectively given approval to complete the manual, but one late-breaking change fundamentally changed the impact of the manual itself.

Bridging the Gap: the introduction of Operational Art

One topic of interest that had come up during the FM 100-5 revision was that of a level of war between the strategic and tactical. Colonel Harry G. Summers Jr.'s *On Strategy* had already illustrated the gap between tactics and strategy, but the translation of strategic aims to tactical practice was at best an arcane art and at worst completely alien to most in the Army. The explorations on attacking the Soviet second echelon accentuated the discontinuities between theory and practice at the tactical and strategic levels.

The first identification of this discontinuity in print came from Major Paul E. Cate, in “Large-Unit Operational Doctrine,” appearing in the December 1978 *Military Review*. Cate commented on the comparative absence of discussion of so-called large units, referring to units above the divisional level, or “echelons above division” (EAD). Cate cited a “twilight zone” for EAD units, whose operations were “neither pure strategy nor pure tactics” and that it had been overlooked in the 1976 edition of FM 100-5. He further identified the hazards of inappropriately tactical approaches to problems that were more appropriately addressed through strategy, or in the case of EAD units, operational art or grand tactics, borrowing from the Soviet and British terms respectively.⁶⁰

Similarly, Colonel Wallace Franz, a faculty member at the U.S. Army War College (USAWC), wrote about the need for a level between tactics and strategy in “Grand Tactics,” appearing in the December 1981 *Military Review*. Franz used the terms “operations” and “grand

⁶⁰ LTC Paul E. Cate, “Large-Unit Operational Doctrine,” *Military Review* LVIII, no. 12 (December 1978): 41–43.

tactics interchangeably,” but also used large units as the centerpiece of his premise.⁶¹ Both Cate and Franz commented on the theoretical elements of such an EAD doctrine, specifically the notions of having to anticipate the movement of units within a theater of operations before joining combat, the need to educate officers for operational planning, and corps commanders “planning the second battle rather than leading by example in the first.”⁶² The article echoed some of the same points that Starry had made in the Central Battle, but placed them in a different context than Starry’s own briefings.

Sinnreich’s work on the Interdiction Planning Brief at Fort Sill highlighted a void in the tactics between prosecution of the first echelon battle and the deep attack necessary to engage the second echelon.⁶³ This tension continued into the Extended Battlefield, which remained fundamentally a statement of tactics.⁶⁴ The gap between strategy and tactics needed a bridge.

The notion of the term “operational art” was already in Western military literature, owing to translations of Soviet military texts such as V. D. Sokolovsky’s *Military Strategy* and Y. Ve Savkin’s *The Basic Principles of Operational Art and Tactics*.⁶⁵ The closest Western equivalent to “operational art” was the term “grand tactics,” often attributed to Henri Antoine de Jomini, but more recently used by B. H. Liddell Hart.

The impetus to introducing the operational level of war, however, started with Edward Luttwak’s article, “The Operational Level of War,” that appeared in the winter 1980-1981 issue of *International Security*. Luttwak, an associate of Canby and Lind, argued similarly against “an attrition style of war” and for a “relational-maneuver” style that sought to defeat an adversary

⁶¹ COL Wallace P. Franz, “Grand Tactics,” *Military Review* LXI, no. 12 (December 1981): 38.

⁶² Cate, “Large-Unit Operational Doctrine,” 46–47. Franz, “Grand Tactics,” passim.

⁶³ Sinnreich, interview, January 9, 2012.

⁶⁴ Starry, “Extending the Battlefield,” 32.

⁶⁵ The term “operational art” appears liberally throughout both of those texts. The original theoretical work of A. A. Svechin, V. K. Triandafilov, and M. N. Tukhachevsky, from which the term originates, did not become readily available to Western readers until the 1980s.

through disruption, rather than destruction, of the enemy force.⁶⁶ Luttwak expanded on the discussions of maneuver warfare by describing tactical battles, not as an end in themselves, but as preparatory events for a strategic aim, using the German *blitzkrieg* and a more contemporary defense of Finnish Lapland. Ironically, Luttwak discussed tactical actions and avoidance of “attrition warfare” themselves more than their relationship to the strategic ends that those actions were supposed to serve. In essence, Luttwak had presented another statement of Lind’s and Canby’s maneuver warfare arguments.⁶⁷

The central influence on Lind, Canby, and Luttwak’s assertions on maneuver warfare was Boyd, who flew combat missions in Korea and as an instructor at the U.S. Air Force Fighter Weapons School after the conflict.⁶⁸ Boyd had observed a relationship between an entity’s continued survival and its ability to shift rapidly to other orientations. That observation led to a more general theory of conflict called the OODA loop, named for its steps of observation, orientation, decision, and action, as described in his presentation, titled *Patterns of Conflict*. Boyd drew significant influence from Sun Tzu’s *The Art of War*. That influence appears in his theory as agility and flexibility for rapid adaptation, to maintain initiative and diminish an adversary’s capacity for independent action.⁶⁹

Boyd’s OODA loop appeared more prominently in the writings of those who had received and internalized the *Patterns of Conflict* briefing. The two most prominent examples

⁶⁶ Edward N. Luttwak, “The Operational Level of War,” *International Security* 5, no. 3 (1980): 63–65.

⁶⁷ Luttwak credited Canby with many of the key ideas in the essay.

⁶⁸ The most definitive biography of Boyd appears in Robert Coram’s *Boyd: The Fighter Pilot who Changed the Art of War*, while the single best overview of Boyd’s theoretical work appears in Frans P. B. Osinga’s 2007 book *Science, Strategy, and War: the Strategic Theory of John Boyd*, a reduced version of his 2005 dissertation of the same name. A bridge between the two, focusing primarily on Boyd’s theoretical work while adding some details of his life, appears in Grant T. Hammond’s *The Mind of War: John Boyd and American Security*.

⁶⁹ John R. Boyd, “Patterns of Conflict,” unpublished presentation, December 1986, 12. The ties from the Energy-Maneuverability theory and the OODA loop appear in John R. Boyd, “Fast Transients,” presentation slides, August 4, 1976, Defense and the National Interest Archive, John R. Boyd Compendium, http://www.dnipogo.org/boyd/pdf/fast_transients.pdf (accessed November 27, 2009).

during the development of AirLand Battle appeared in *Military Review* were Colonel Wayne A. Downing's "U.S. Army Operations Doctrine: A Challenge for the 1980s and Beyond," and Captain Anthony M. Coroalles' "Maneuver to Win: A Realistic Alternative." Downing wrote the article as a student at the Air War College. Coroalles was a graduate of the U.S. Marine Corps Amphibious Warfare School. Both had attended one of Boyd's presentations of *Patterns of Conflict* at their respective schools and drew heavily from it to translate its messages to an Army audience.⁷⁰

Frans Osinga and Shimon Naveh have credited Boyd's ideas as a central influence for AirLand Battle. Naveh cited Boyd's OODA loop as the key to the transition to the operational concept, describing the work of Boyd, Lind, and others "as a crusade to legitimize the application of the Airland battle operational theory."⁷¹ Some indirect commonalities do exist between Boyd's work and AirLand Battle. While the FM 100-5 authors held mutual discussions with Lind, Boyd, and Luttwak on the FM 100-5 drafts, Wass de Czege considered Sun Tzu and Clausewitz far greater influences on the manual than Boyd.⁷² Holder attributed no direct influence to the maneuver warfare advocates beyond figuring in the thinking of the authors.⁷³ The AirLand Battle concept, particularly considering Starry's antipathy towards Lind's rhetoric and the concept's shared relationship to HDv 100/100 and NATO tactical doctrine, evolved along parallel lines with the concepts offered by maneuver warfare advocates. The maneuver

⁷⁰ Wayne A. Downing, "U.S. Army Operations Doctrine: A Challenge for the 1980s and Beyond," *Military Review* LXI, no. 1 (January 1981): 64–73; CPT Anthony M. Coroalles, "Maneuver to Win: A Realistic Alternative," *Military Review* LXI, no. 9 (September 1981): 35–46.

⁷¹ Shimon Naveh, *In Pursuit of Military Excellence: the Evolution of Operational Theory* (London; Portland, Ore.: Frank Cass, 1997), 268, 302.

⁷² Huba Wass de Czege, "Lessons from the Past: Making the Army's Doctrine 'Right Enough' Today" (Arlington, Va.: Institute of Land Warfare, 2006), 9. Huba Wass de Czege, "email to author," email to author, July 25, 2006.

⁷³ Holder, interview, December 23, 2011. Wass de Czege lays out the theoretical roots of the 1982 FM 100-5 in BG Huba Wass de Czege, "Army Doctrinal Reform," in *The Defense Reform Debate: Issues and Analysis*, ed. Asa A. Clark et al. (Baltimore, Md.: Johns Hopkins University Press, 1984), 109–110.

warfare advocates contributed to the debate through spreading some of the same ideas. The commonalities, specifically the emphasis on the moral domain of warfare, the role of leadership and initiative, and the requirements for agility and flexibility, were coincidental.⁷⁴

Nonetheless, the Luttwak article encouraged senior Army leaders, both within TRADOC and within the Army at large, to consider what the operational level of war meant. Luttwak's use of historical case studies, featuring numerically inferior forces defeating larger forces through skillful maneuver, was particularly evocative. More immediately, the article informed the FM 100-5 authors' thoughts on ideas relating to the operational level of war as they continued to revise the manual.

Summers' *On Strategy* was the other document to frame the interaction between strategy and tactics. The book gave the Army the intellectual basis for articulating the costs of a strategy, as well as the risks that came with that strategy.⁷⁵ While the authors of AirLand Battle did not draw directly from *On Strategy*, the context of strategy informed the debate over what was possible in operational art.⁷⁶

While the official TRADOC history of the development of AirLand Battle mentioned the final draft of FM 100-5 being complete by June 1981, the manual saw two additional revisions before final publication. Starry approved the draft in July 1981, just before he departed

⁷⁴ A veiled reference to Boyd's OODA loop appears in a discussion of "a closed loop process (analyze-decide-act-analyze again)" in Richardson, "Winning on the Extended Battlefield," 42. An example of Starry's forbearance of Lind appears in LTG Donn A. Starry, letter to Colonel Addison D. Davis, III, July 19, 1976, Folder 8, Box 5, Donn A. Starry Papers, U.S. Army Military History Institute. The reference to Lind is readily apparent in a reference to "amateur military strategic gadflies" in GEN Donn A. Starry, "To Change An Army," *Military Review* LXIII, no. 3 (March 1983): 27. An excellent overview of the nature of the debate between the maneuver warfare advocates and their detractors appears in John M. Oseth, "An Overview of the Reform Debate," in *The Defense Reform Debate: Issues and Analysis*, ed. Asa A. Clark et al. (Baltimore, Md.: Johns Hopkins University Press, 1984), 44-61.

⁷⁵ Douglas V. Johnson II, e-mail to author, December 3, 2011.

⁷⁶ Holder, interview, December 23, 2011.

TRADOC for U.S. Readiness Command.⁷⁷ However, the new TRADOC commander, General Glenn K. Otis, had just come from being the DCSOPS, where he had overseen the revision of FM 100-1 and its overview of policy and strategy. Most likely at Otis's directive, Morelli directed the inclusion of "operational art" into FM 100-5. However, Morelli did not dictate the specifics on what to include. Wass de Czege and Holder, after initial opposition to the idea, later drafted the material covering the operational level of war.⁷⁸

The introduction of "operational art" in the FM 100-5 revision appeared in the putative "final draft," dated September 4, 1981. It marked the first articulation of campaigning in Army doctrine after Vietnam, tying tactical actions to strategic goals within a theater of war. However, the late insertion of operational art into the final draft produced a description of the operational level of war as "the theory and practice of large unit (army and corps) operations, the use of battles and their results to attain a major military goal."⁷⁹ Such a description was misleading, as it nominally denied the practice of operational art to any other echelon. It also erroneously conflated the activity of "operational art" with the "operational level of war." After some minor changes, and expunging the phrase "operational art" from the text, the authors completed the second final draft in January 1982, the last revision prior to approval and publication.⁸⁰

Reactions to AirLand Battle

The approved revision of FM 100-5 was released on August 20, 1982, to a far warmer reception than its predecessor. That reception owed in no small part to the extensive dissemination of its concepts in print before the manual even released. Some of that coverage

⁷⁷ Romjue, *From Active Defense to AirLand Battle*, 61.

⁷⁸ Holder, interview, December 23, 2011.

⁷⁹ Department of the Army, *Field Manual 100-5, Operations (Final Draft)* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1981), 2-6 – 2-7.

⁸⁰ Department of the Army, *Field Manual 100-5, Operations (Final Draft)* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1982).

came from Starry's and Morelli's briefings. Much of the printed record of that advance press appears in the pages of *Military Review* and other journals. Besides Starry's own articles on the Extended Battlefield, Holder and Wass de Czege contributed their own articles explaining the AirLand Battle concept, as did Richardson in *Army* magazine. Doerfel contributed a key article on operational art.⁸¹ Even Otis introduced AirLand Battle, a few months before the formal release of FM 100-5, with a letter at the front of that month's *Military Review*.⁸² In the meantime, Richardson's Extended Battlefield Contact Team briefed audiences throughout the Army and the Air Force on the concept and how that concept might look in practice. All of these engagements to familiarize audiences with the doctrine paid off in spades. The Army finally had a capstone doctrine that contextualized a level of cognitive activity between the tactics that was DePuy's and Starry's hallmark and the strategy and policy that was the domain of FM 100-1.

Ironically, the biggest complaint against AirLand Battle as expressed in the 1982 FM 100-5 came from the organization for which the doctrine was specifically designed. In the drafts, reviewers commented favorably on the overall change in tone to the offense, compared to its 1976 predecessor.⁸³ However, General Bernard W. Rogers, Supreme Allied Commander, Europe (SACEUR) and Meyer's predecessor as CSA, was highly critical of the 1982 manual.

Rogers' objections to AirLand Battle were primarily strategic in nature. Those objections stemmed from the NATO's overall strategy of Flexible Response, outlined in NATO Military

⁸¹ Starry, "Extending the Battlefield"; COL Clyde J. Tate and LTC Leonard D. Holder, "New Doctrine for the Defense," *Military Review* LXI, no. 3 (March 1981): 2-9; Richardson, "Winning on the Extended Battlefield"; LTC Leonard D. Holder, "Maneuver in the Deep Battle," *Military Review* LXII, no. 5 (May 1982): 54-61; LTC John S. Doerfel, "The Operational Art of the AirLand Battle," *Military Review* LXII, no. 5 (May 1982): 3-10; LTC Huba Wass de Czege and MAJ Leonard D. Holder, "The New FM 100-5," *Military Review* LXII, no. 7 (July 1982): 53-70.

⁸² GEN Glenn K. Otis, "A Message from the Commander of Training and Doctrine Command," *Military Review* LXII, no. 5 (May 1982): 2.

⁸³ BG Crosbie E. Saint, Comments on FM 100-5 coordinating draft to LTC Wass de Czege, March 23, 1981, Folder 6, Box 24, Donn A. Starry Papers, U.S. Army Military History Institute. Sniffin, March 23, 1981. LTG David E. Grange Jr., Comments on FM 100-5 Coordinating Draft to General Donn A. Starry, April 13, 1981, Folder 1, Box 25, FM 100-5 File, U.S. Army Military History Institute, Donn A. Starry Papers.

Committee Report (MC) 14/3, which established the forward defense as its strategic concept.⁸⁴

Rogers, as the senior military leader in NATO, had to balance the interests of the sixteen nations in the Alliance, most significantly the West Germans, whose country stood to lose the most in the event of a war. Rogers, like Starry, was concerned with how to stop the two Soviet operational echelons he expected to fight in the event of a war. While the strategy of Flexible Response remained unchanged from its approval in MC 14/3 in 1967, Rogers and his staff acknowledged that NATO had to be able to defend primarily using conventional means once the Soviets had achieved rough parity of theater and tactical nuclear weapons.⁸⁵

However, the sensitivities of some NATO member countries drove very specific caveats about what NATO could do, even with conventional munitions. In developing a concept called Follow-On Forces Attack (FOFA), Rogers sought to raise the “nuclear threshold,” and to delay the use of nuclear weapons as long as possible in the event of war with the Warsaw Pact.⁸⁶ Thus, FOFA had a number of stipulations attached to it, most specifically that it involved conventional munitions only and expressly ruled out preemptive strikes or attacking outside of NATO political boundaries into Warsaw Pact states. Rogers, making these points in an article originally printed in the December 1984 *NATO Review*, later reprinted in the summer 1985 issue of *Parameters*, the USAWC official journal, was undoubtedly reacting to the Integrated Battlefield and Extended Battlefield elements of AirLand Battle.⁸⁷ Rogers’ reaction may also have been due in part to the mushroom clouds overlaying “enemy” units that adorned the diagrams showing forms

⁸⁴ Military Committee, “Final Decision on MC 14/3: A Report by the Military Committee to the Defence Planning Committee on Overall Strategic Concept for the Defense of the North Atlantic Treaty Organization Area” (North Atlantic Treaty Organization, January 16, 1968), 3.

⁸⁵ GEN Bernard W. Rogers, “The Atlantic Alliance: Prescriptions for a Difficult Decade,” *Foreign Affairs* 60, no. 5 (Summer 1982): 1150.

⁸⁶ *Ibid.*, 1151.

⁸⁷ GEN Bernard W. Rogers, “Follow-On Forces Attack (FOFA): Myths and Realities,” *Parameters* XV, no. 2 (Summer 1985): 78.

of maneuver in the FM 100-5 final drafts.⁸⁸ Less provocative explosions replaced the mushroom clouds in the approved manual.

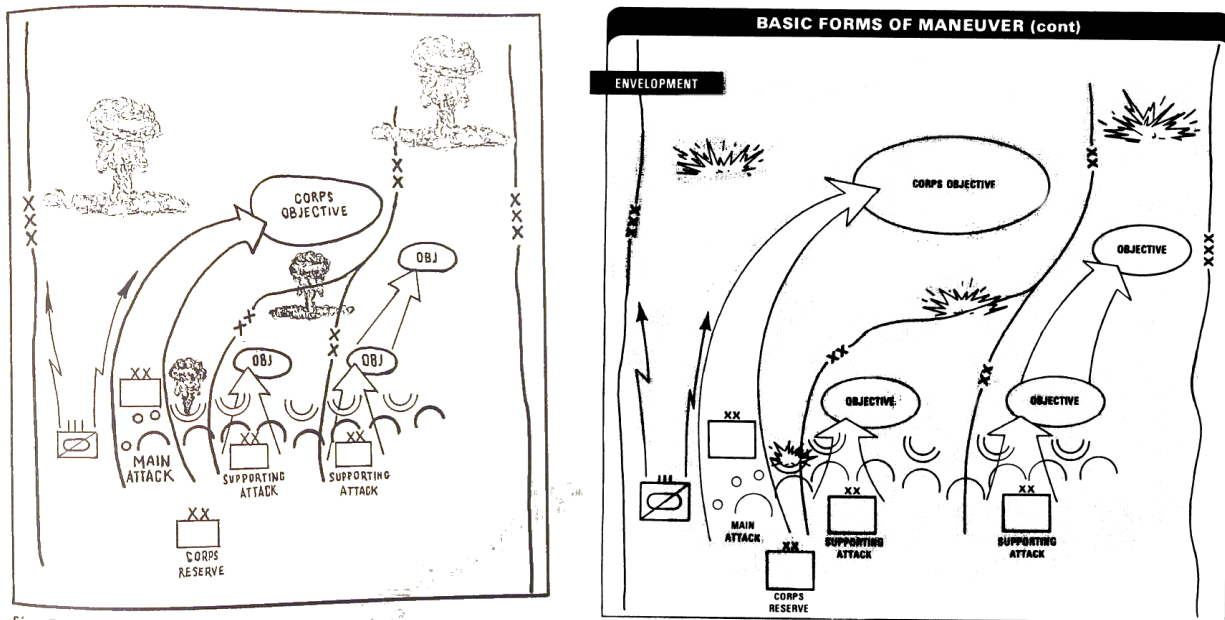


Fig. 7-3 Envelopment

Figure 1: One of the infamous mushroom cloud diagrams from the FM 100-5 draft compared to the final production version of the same diagram in the 1982 manual.⁸⁹

As Manfred Hamm noted in a 1988 article in *Comparative Strategy*, FOFA was a tactical concept based on targeting Warsaw Pact forces that were not yet committed to close combat. Although AirLand Battle and FOFA shared some similarities, Rogers took great pains to distinguish FOFA from AirLand Battle, partly because he considered the Integrated Battlefield at odds with his desire to raise the nuclear threshold, and because he was the focal point for all the criticisms of the European press, who conflated the two concepts.⁹⁰ Rogers, as a U.S. Army officer and the NATO military commander, was the focal point of these criticisms. Finally, the

⁸⁸ Department of the Army, *FM 100-5 (Final Draft September 4, 1981)*, 7-13 – 7-15. Department of the Army, *FM 100-5 (Final Draft January 4, 1982)*, 7-15 – 7-16. Sinnreich, interview, January 9, 2012.

⁸⁹ Department of the Army, *FM 100-5 (Final Draft September 4, 1981)*, 7-14; Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1982), 8–10.

⁹⁰ Sinnreich, interview, January 9, 2012; Manfred R. Hamm, “The AirLand Battle Doctrine: NATO Strategy and Arms Control in Europe,” *Comparative Strategy* 7, no. 3 (1988): 195–196.

West Germans were also highly sensitive to any perceptions, especially in the wake of World War II, that they even remotely harbored an offensive military capability.⁹¹

Part of Rogers' objection to AirLand Battle involved a similarly-named, but separate concept that appeared at almost the same time. That concept, titled *AirLand Battle 2000*, appeared in August 1981 and was intended to guide future organizational alignments, doctrine, training, and materiel requirements. *AirLand Battle 2000* built on its predecessor, TRADOC Pamphlet 525-5, *AirLand Battle and Corps 86*, whose content had been incorporated into the approved FM 100-5. *AirLand Battle 2000* envisaged forces and technology that bordered on science fiction, although it did provide a depiction for how U.S. Army forces might fight in a future setting.⁹² While the concept was never intended as doctrine, its name resulted in American and European audiences conflating the concept with the doctrine in the 1982 FM 100-5, causing additional confusion.⁹³ The concept persisted in various forms, changing its name to *Army 21* in 1984, until General John A. Wickham, Jr., Meyer's successor as CSA, rescinded *AirLand Battle 2000* in its entirety, while Richardson addressed Rogers' concerns by directing that *Army 21* be classified as a SECRET NOFORN concept so that it would remain in American internal use.⁹⁴

⁹¹ Boyd D. Sutton, "Deep Attack Concepts and the Defence of Central Europe," *Survival* 26, no. 2 (April 1984): 56.

⁹² U.S. Army Training and Doctrine Command, *AirLand Battle 2000 (1982 version with functional areas)* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1982), 12–16. Annex D (Air Defense) and Annex H (Combat Service Support) were the worst offenders, while the sections written for actual close combat concepts were less extravagant.

⁹³ Robert Gessert, "The AirLand Battle and NATO's New Doctrinal Debate," *RUSI Journal* 129, no. 2 (June 1984): 55, 57; GEN Bernard W. Rogers, Comments on FM 100-5 and Army 21 drafts to General William R. Richardson, September 26, 1985, Box 28, William R. Richardson Papers, U.S. Army Military History Institute.

⁹⁴ GEN John A. Wickham Jr., letter to General William R. Richardson, Commander TRADOC, March 10, 1986, Box 37, William R. Richardson Papers, U.S. Army Military History Institute; GEN William R. Richardson, letter to General Bernard W. Rogers, Supreme Allied Commander, Europe, November 29, 1985, Box 32, William R. Richardson Papers, U.S. Army Military History Institute. A brief history of *AirLand Battle 2000* and *Army 21* appears in Yoav Ben-Horin and Benjamin Schwarz, *Army 21 as the U.S. Army's Future Warfighting Concept: A Critical Review of Approach and Assumptions* (Santa Monica, Calif.: Rand, 1988), 3–19. In U.S. government

Ironically, the inclusion of the operational level of war received a significant endorsement from none other than the West Germans. Lieutenant General Hans Henning von Sandrart, deputy chief of staff under Rogers at Supreme Headquarters, Allied Powers Europe (SHAPE), addressed the German Army's commanders' conference in 1985 on his experiences in reviewing the 1982 edition of FM 100-5. Sandrart noted that the Germans had removed the operational level of war from the 1973 edition of HDv 100/100, assuming incorrectly that NATO would address the operational level of war. He further noted that "operational and sometimes even tactical intentions were misinterpreted as strategic objectives – and that not only by laymen. I also shudder at the thought that concepts on how to command forces on a large scale could be developed from a purely tactical frame of mind." The failure of visualization above the tactical level that von Sandrart identified was the same problem that Morelli's directive on the operational level of war in AirLand Battle sought to address.⁹⁵

Ultimately, the most significant addition in FM 100-5, even more than Wass de Czege's substantial reframing of the integrated and extended battlefields for tactical use, was the inclusion of the operational level of war. The 1982 edition was the first manual in the history of the U.S. Army to articulate the existence of a specific level of war between the strategic and tactical, which supplemented the manual's substantial examination of tactics inherited from the work on the Extended Battlefield concept.

correspondence, NOFORN is a distribution restriction for classified information meaning "not releasable to foreign nationals."

⁹⁵ Oberst (COL) A. Wittenberg, "Operational Level of War," Disposition Form to GEN William R. Richardson, Commanding General TRADOC, June 21, 1985, Box 25, William R. Richardson Papers, U.S. Army Military History Institute.

AirLand Battle Revisited

The early revision of FM 100-5 started in 1984, much earlier than expected. The authors thought that FM 100-5 might remain current for five years to give the doctrine writers throughout the Army a chance to write the supporting manuals, but the hasty addition of the operational level of war, along with several other correctives from the 1982 edition, led Wass de Czege, and Sinnreich after him, to seek approval to begin revising the manual after only two years.⁹⁶ Their involvement makes clear that in the two years since AirLand Battle became the Army's operational doctrine, the environment at Leavenworth had changed substantially.

At Richardson's behest, Wass de Czege remained at Leavenworth as a USAWC Army Research Associate after finishing work on the 1982 FM 100-5. Richardson, who departed CAC in 1981 to become the DCSOPS, was in a position to influence Wass de Czege's assignment since the USAWC answered to the DCSOPS. Wass de Czege's project during the year was a report called the *Army Staff College Level Training Study*, a study of how the Army educated majors. One of the proposals he laid out in the *Army Staff College Level Training Study* was a second year course at Leavenworth, focused on "operational planning skills and on developing sound military judgment across the entire spectrum of *present* and *future* US Army missions in the preparation for and conduct of war."⁹⁷

The result of that proposal was the School of Advanced Military Studies (SAMS), with Wass de Czege as its first director.⁹⁸ Although the product of SAMS was not specifically a

⁹⁶ Holder, interview, December 23, 2011. BG (Ret) Huba Wass de Czege, interview by Kevin C. M. Benson, January 15, 2009, transcript in author's possession.

⁹⁷ LTC Huba Wass de Czege, *Army Staff College Level Training Study*, Research Study (Carlisle Barracks, Pa.: U.S. Army War College, June 13, 1983), F-4, Defense Technical Information Center, accession number ADA144852.

⁹⁸ While an overview of SAMS is beyond this work, the most comprehensive history of SAMS appears in Kevin C. M. Benson's 2011 dissertation, "Educating the Army's Jedi," under the direction of Theodore Wilson at the University of Kansas.

specialist in operational art, SAMS was the only school whose curriculum provided sufficient fundamentals in the theory and practice of operational art, which Wass de Czege made clear in two articles, “Challenge for the Future” and “How to Change an Army.” The first was an outgrowth of his Army Research Associate Program tour, while the second came from his experiences as SAMS director.⁹⁹

The focus on operational art at SAMS in the early years made it a crucible for the 1982 AirLand Battle doctrine. It also provided a laboratory to find out where further work remained to be done on the manual. By 1984, Richardson had succeeded Otis as TRADOC commanding general. While Richardson is largely invisible in some of the histories of the period, his continuity of involvement through three very different positions was critical in enabling SAMS to survive its first few years, as well as providing the protection of a senior leader in the authorship for the 1982 FM 100-5 and the approval for starting its revision two years later.¹⁰⁰

Holder was the only other primary author remaining from the AirLand Battle effort after Henriques’ retirement in 1982. Holder continued his own research on operational art while commanding the 1st Squadron, 3rd Armored Cavalry Regiment, and returned to Leavenworth as a USAWC Fellow to work on the revised FM 100-5.¹⁰¹ He had written a short essay on the nature of operational art that received the Chairman of the Joint Chiefs of Staff Award for Strategic Writing in 1984; that essay published in abridged form in *Army Magazine* as another deliberate attempt to spread the ideas for an incremental change in the Army’s doctrine.¹⁰²

⁹⁹ COL Huba Wass de Czege, “Challenge for the Future: Educating Field Grade Battle Leaders and Staff Officers,” *Military Review* LXIV, no. 6 (June 1984): 10; COL Huba Wass de Czege, “How to Change an Army,” *Military Review* LXIV, no. 11 (November 1984): 48–49.

¹⁰⁰ Wass de Czege, interview, January 15, 2009.

¹⁰¹ Holder, interview, December 5, 2008.

¹⁰² LTC Leonard D. Holder, “A New Day for Operational Art,” *Army* 35, no. 3 (March 1985): 22–32.

Although the 1986 manual was a progressive refinement of the content from the 1982 manual, the most significant difference between the two was the formalization of operational art. Much of the tactical procedures that had been part of the 1976 and 1982 manuals moved to subordinate manuals, reaping the established hierarchy of “How To Fight” manuals. The revised version expanded on the 1982 manual’s AirLand Battle concept, placing it within strategy, operational art, and tactics. Holder wrote a section on “The Structure of Modern Warfare,” providing within it the first formal definition of operational art in Army doctrine. That definition remains to this day a précis of the essence of operational art in theory and practice:

“Operational art is the employment of military forces to attain strategic goals in a theater or war or theater of operations through the design, organization, and conduct of campaigns and major operations.”¹⁰³

The authors of the 1986 edition considered using the term “grand tactics,” but they rejected it since they wanted to differentiate the activities at the operational level from tactics, a tacit recognition of the Army’s own cultural proclivities. The authors had similar reservations about the term “operational art” since they had also identified a component of science at that level, and thus the activity was not entirely art.¹⁰⁴ The elements of science became readily apparent when considering the mechanics of operational logistics and movement within a theater of operations, all of which depended on synchronizing the transportation and combat assets of large units.

Nonetheless, the formalization of operational art in the 1986 FM 100-5 also offered a vehicle for dispelling some of the criticisms of the 1982 manual. Wass de Czege, upon starting his Army Research Associate Program tour, outlined many of those proposed revisions in a July

¹⁰³ Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1986), 10.

¹⁰⁴ COL Huba Wass de Czege, “FM 100-5 IPR with General Richardson on 24 September 1985,” Memorandum for Record (Fort Leavenworth, Kan., September 30, 1985), Recommendations for Improvement, 8, October 1-10, 1985 Folder, Box 29, William R. Richardson Papers, U.S. Army Military History Institute.

1985 memo to reviewers he sent with the FM 100-5 draft. By presenting AirLand Battle as an operational rather than a strategic concept, he sought to dispel the belief that AirLand Battle was a strategy, and explained that it should not be confused with non-doctrinal concepts such as *AirLand Battle 2000*, which was later renamed *Army 21*.¹⁰⁵ Sinnreich's previous experience as a special assistant to Rogers's predecessor at SHAPE also helped him to sell the revised AirLand Battle to NATO.¹⁰⁶

Framing the doctrine in an operational setting also allowed the authors to address the conflation of AirLand Battle and FOFA. In particular, the new version's balance between offense and defense addressed the previous furor over the Integrated Battlefield and its employment concept for nuclear weapons, as well as the preemptive cross-border operations that critics attributed to the Extended Battlefield.¹⁰⁷ The March 1984 publication of NATO's operational doctrine in ATP-35(A), *Land Force Tactical Doctrine*, provided a basis for the FM 100-5 authors to claim compatibility with NATO doctrine. Within the U.S. Army, the favorable reception of AirLand Battle in the 1982 manual obviated the need to cite either the Integrated Battlefield or Extended Battlefield concepts by name.

Sinnreich's primary contribution to the manual was the section on logistics.¹⁰⁸ For the first time, logistics enjoyed an equal seat at the proverbial table with combat functions. The chapter on logistics went far beyond the 1982 manual's mostly tactical-level discussion of combat service support. The 1986 manual described the theoretical conduct of operational sustainment, oriented specifically to the theater logistics base and the prevention of culmination

¹⁰⁵ COL Huba Wass de Czege, "The Nature and Reasons for Changes in This Edition," Memorandum for Record (Fort Leavenworth, Kan., July 1, 1985), 2, October 1-10, 1985 Folder, Box 29, William R. Richardson Papers, U.S. Army Military History Institute.

¹⁰⁶ Harold R. Winton, interview by author, March 7, 2012, notes and recording in author's possession.

¹⁰⁷ Wass de Czege, "The Nature and Reasons for Changes in This Edition," 2-5.

¹⁰⁸ Sinnreich, interview, January 9, 2012.

for logistical reasons. While the manual did not explicitly say so, the text made plainly apparent that operational commanders who neglected theater logistics faced likely failure, if not destruction of their force.¹⁰⁹ The recognition of logistics as an equal factor at the operational level of war marked a fundamental shift in the tone of the doctrine from previous editions.

The 1986 manual also introduced the center of gravity, culminating points, and lines of operation, three “key concepts of operational design” drawn primarily from classical military theory. Explaining that those were not new concepts, the authors included them specifically to assist in “the design and conduct of campaigns and major operations.”¹¹⁰ All three of those concepts of operational design are part of present-day Army and joint doctrine, a testament to their enduring utility.¹¹¹ All three had direct application to actions above tactical level, although the catalyst to their inclusion stemmed partly from indirect attack against a numerically superior enemy, certainly a situation that applied to American forces facing the Warsaw Pact.

The authors’ greatest concerns with the FM 100-5 revision, however, were not with the Warsaw Pact but with NATO and the U.S. Air Force. One of the biggest challenges with the new doctrine, particularly given the furor over the previous manual, was gaining consensus amongst the Air Force, SHAPE, and other NATO countries that FM 100-5 was “compatible” with their doctrines. Wass de Czege, Sinnreich, and others at DCSOPS had been successful in gaining such a consensus on acceptance of the new doctrine within the U.S. Army.¹¹²

¹⁰⁹ Department of the Army, *FM 100-5 (1986)*, 65–71, 74.

¹¹⁰ *Ibid.*, 179.

¹¹¹ Department of the Army, *Field Manual 3-0, Operations, with Change 1* (Washington, D.C.: G.P.O., 2008), 7–5. Joint Chiefs of Staff, *Joint Publication 3-0, Joint Operations* (Washington, D.C.: G.P.O., 2011), II–5.

¹¹² COL Huba Wass de Czege, letter to General William R. Richardson, Commander TRADOC, June 28, 1985, Box 28, William R. Richardson Papers, U.S. Army Military History Institute.

Richardson was personally instrumental in gaining agreement from NATO and the Air Force, allowing Wass de Czege, Holder, and Sinnreich to write the manual unmolested.¹¹³

For the revision, gaining a NATO statement on compatibility with ATP-35(A) was critical. Rogers had been particularly intransigent in accommodating the 1982 draft of AirLand Battle, given the demands placed upon him as SACEUR to reconcile American doctrine with that of its allies. Much of his reservations stemmed from the depictions of the integrated battlefield and *Army 21*, two concepts that no longer occupied the prominence they had at the time of the 1982 manual.¹¹⁴ Rogers's concurrence with the compatibility of the 1986 AirLand Battle doctrine marked a major victory for the Richardson and the FM 100-5 authors.

Some within the Air Force were still suspicious about the Army's intentions for the operational level of war, a concern that Richardson himself recognized in his guidance to Wass de Czege and Sinnreich. Although BAI had been part of the Air Force's capstone doctrine since 1979, it gained limited traction only in the Tactical Air Forces.¹¹⁵ The 1984 edition of AFM 1-1, *Basic Aerospace Doctrine*, provided a further benchmark for Air Force doctrinal direction, similar to what ATP-35(A) had provided for NATO tactical doctrine. Fortunately for the AirLand Battle staffers, the 1984 AFM 1-1 retained BAI as a subset of the air interdiction mission, and NATO's own doctrine included BAI as one of the two attack operations in the 1980 edition of ATP-27(B), *Offensive Air Support Operations*.¹¹⁶ In staffing, the reaction of the Air

¹¹³ Sinnreich, interview, January 9, 2012. Sinnreich's greatest fear for the 1986 FM 100-5 was that it would be subject to a line-by-line review by NATO for approval, something Richardson was able to prevent, evidenced in Richardson's correspondence to Wickham and Rogers. Two sentences on "compatibility" in the preface of FM 100-5 was the lone explicit concession made to Rogers' concerns in the approved manual. LTG William R. Richardson, letter to General John A. Wickham, Jr., Chief of Staff, July 27, 1983, Box 3, William R. Richardson Papers, U.S. Army Military History Institute.

¹¹⁴ Rogers, letter to Richardson, September 26, 1985.

¹¹⁵ Laughbaum, *Synchronizing Airpower and Firepower in Deep Battle*, 15.

¹¹⁶ Department of the Air Force, *Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force* (Washington, D.C.: G.P.O., 1984), 3-4. David J. Stein, *The Development of NATO Tactical Air Doctrine, 1970-1985* (Santa Monica, Calif.: RAND, 1987), 32.

Staff was anticlimactic, citing it as “on target and even more compatible with Air Force Manual 1-1.”¹¹⁷

Even if the staffing of FM 100-5 had occurred independent of sister service or Alliance sensitivities, the 1986 FM 100-5 authors recognized the importance of the joint nature of warfare at all levels, especially when considering the nature of campaigns and major operations.

Although there were some minor references to “ground campaigns” in the description of the field army, the 1986 manual consistently emphasized the joint and combined (meaning multinational) nature of operational art and campaigning above the tactical level, and delinked it from any one specific echelon.¹¹⁸

Finally, although neither the 1982 nor the 1986 FM 100-5 discussed strategy in detail, the AirLand Battle concept was an unmistakable attempt at a solution to NATO’s defensive strategy. The revision corrected the pendulum shift to tactics that had occurred in the Active Defense, without neglecting the tactical foundations that were at the heart of the Extended Battlefield concept and the 1982 manual. Only the 1986 manual provided both the conceptual and practical treatments that enabled institutionalizing the practice of operational art.

Institutionalizing AirLand Battle

The 1986 FM 100-5 provided a basis for the Army to approach the void in large unit doctrine that Cate had identified in his 1978 article. One of Wass de Czege’s initiatives after working on the FM 100-5 rewrite was the revision of Field Circular 100-15-1, the provisional “how-to-fight” manual on deep attack. The other manual that benefitted from the updated

¹¹⁷ Wass de Czege, “FM 100-5 IPR with General Richardson on 24 September 1985,” *Sampling of Other Services’ Comments*, 3. AFM 1-1 was comparable to FM 100-1. The Air Force’s operational doctrine analog to FM 100-5, AFM 2-1 was published in 1969 and hopelessly out of date, while Tactical Air Command Manual 2-1 was a document that only applied to one of its major commands.

¹¹⁸ Department of the Army, *FM 100-5 (1986)*, 10, 27–32.

AirLand Battle was FM 100-15, *Corps Operations*, which been in revision since the first version of AirLand Battle in 1982. The greatly expanded treatment of operational art and joint operations in the 1986 FM 100-5 was a critical addition in the approved edition of FM 100-15 in late 1989, the Army's first true doctrinal manual above the division level since 1968.¹¹⁹

AirLand Battle was the centerpiece of the tactics curriculum at CGSC from 1983 to 1994.¹²⁰ The AirLand Battle concept also provided the doctrinal foundations for branch doctrine in the way that DePuy had envisioned in the 1970s when he laid out the "How to Fight" manuals. The first professional military education course that examined AirLand Battle in detail was at CGSC, not the branch schools that taught the mechanics of the subordinate tactical doctrine that fell under FM 100-5. Consequently, most of the Army's exposure to AirLand Battle, less the aviation, field artillery units, and military intelligence that received the deep attack systems required by the Extended Battlefield concept, was purely tactical. Restricted to the tactical level, AirLand Battle was merely a progressive refinement of the Active Defense for most of the infantrymen, engineers, and tankers who would engage in close combat. As a result, a gap in the practice of AirLand Battle emerged.

From the 1960s through 1972, the one place in the Army that was teaching anything that resembled campaign planning was the Command and General Staff College Department of Larger Unit Operations, which taught division through army group operations and doctrine. The reorganization of the Army under Operation STEADFAST and the removal of the army group from the Army's force structure in 1972 resulted in the divisional functions moving to the

¹¹⁹ Wass de Czege, letter to Richardson, June 28, 1985. Department of the Army, *Field Manual 100-15, Corps Operations (Final Draft)* (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1988), 1-2 – 1-13. Department of the Army, *Field Manual 100-15, Larger Units: Theater Army-Corps* (Washington, D.C.: G.P.O., 1968).

¹²⁰ The Active Defense FM 100-5 generated a change in the tactics portion of the core curriculum at CGSC starting in the 1977-1978 academic year. The AirLand Battle concept from the 1982 FM 100-5 became the focal point for most of the CGSC core curriculum and several of its electives.

Department of Division Operations, which became the Department of Tactics.¹²¹ The remainder moved to the Department of Joint, Combined, and Special Operations, which by 1982 had become the Department of Joint and Combined Operations.¹²² For most students in CGSC's year-long curriculum, what little discussion of strategy existed was on national-level political-military functions, not the translation of that direction to a theater strategy or campaign plan. In the absence of the old Department of Larger Unit Operations curriculum, most of the core curriculum at CGSC focused on a lowest common denominator of tactics, while the USAWC curriculum addressed political-military considerations similar to a graduate strategic studies program.¹²³ A gap existed between the corps, considered the highest tactical-level headquarters, and the operational forces typically at the army group or combatant command level that translated strategic guidance into tactical direction for their subordinates.

Only SAMS examined the large unit operations in which the translation of strategy to tactical direction usually occurred. The curriculum during the first five years of SAMS's existence devoted the period from November to May of the academic year to studies of operational art, including studies of historical examples as well as contemporary large unit

¹²¹ Operation STEADFAST was the reorganization of the Army that created TRADOC and U.S. Army Forces Command from the previous Continental Army Command. John L. Romjue, Susan Canedy, and Anne W. Chapman, *Prepare the Army for War: A Historical Overview of the Army Training and Doctrine Command, 1973-1993* (Fort Monroe, Va.: Office of the Command Historian, United States Army Training and Doctrine Command, 1993), 6-7.

¹²² MAJ Robert A. Doughty, "The Command and General Staff College in Transition, 1946-1976" (Special Study Project, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1976), 27. Ivan J. Birrer, "Interview with Dr. Ivan J. Birrer: Service at the Command and General Staff College, Fort Leavenworth, Kansas, 20 January 1948 to 30 June 1978," interview by MAJ Robert A. Doughty, April 21, 1978, 109, Defense Technical Information Center, accession number ADB064185. The name changes are from a study of the CGSC course catalogs from 1971 to 1996, held at the Combined Arms Research Library, Fort Leavenworth, Kansas.

¹²³ Holder, interview, December 23, 2011. General Alfred M. Gray, Jr. USMC (Retired), 29th Commandant of the Marine Corps, also alluded to this when he said he learned more about planning at the Marine Command and Staff Course than he did as a student at USAWC. Gen (Ret) Alfred M. Gray Jr., "Remarks at 2011 Boyd and Beyond Conference, Quantico, Virginia," October 14, 2011, recording in author's possession.

operations, which meant practical exercises at the corps, field army, and army group levels.¹²⁴ In the absence of rigorous study of the operational level of war at any other school, it was the only institution that provided the doctrinal and theoretical foundations that enabled its graduates to understand the theory and practice of a seemingly-new discipline that was neither tactics nor strategy.¹²⁵ Consequently, SAMS graduates became synonymous with being operational planners, rather than with Wass de Czege's intent to create agents of change within the Army.¹²⁶ These agents of change were important because most of the Army that actually conducted combat operations did so almost exclusively at the tactical level.

One of the greatest contributors to the Army's overwhelming bias towards tactics was the National Training Center (NTC) at Fort Irwin, California. The NTC provided the Army a venue for simulating armored combat in a desert environment, with an opposing force in the form of the so-called 60th Guards Motorized Rifle Division, organized along Soviet lines and using Soviet tactics.¹²⁷ The data garnered through simulations, bolstered by a brutally honest after-action review system, provided the Army a vehicle for changes in training, doctrine, materiel development, and force structure.¹²⁸

However, limitations on the size and scope of the training area constrained the training at

¹²⁴ U.S. Army Command and General Staff College, "College Catalog, 1984-1985" (Fort Leavenworth, Kan., 1984), 142, 146, College Catalogs, Combined Arms Research Library.

¹²⁵ While the Strategic Studies Institute at Carlisle Barracks generated a monograph on campaign planning, their comparative influence was relatively small compared to what was coming out of Leavenworth. COL William W. Mendel and LTC Floyd T. Banks Jr., *Campaign Planning: Final Report* (Carlisle Barracks, Pa.: U.S. Army War College, Strategic Studies Institute, January 4, 1988). Another well-received paper published outside of Leavenworth that had relatively little effect on the force writ large was COL John I. Alger, "Thoughts Toward a Definition of Joint Operational Art," unpublished paper (National War College, February 5, 1986), History of Operational Art from BG Stofft, Folder 3, Pre-CSA Papers, Doctrine Development Issues, U.S. Army Military History Institute, Gordon R. Sullivan Papers. That Sullivan, a future CSA, retained Alger's paper speaks to its content, but the only other work that references Alger's paper is a "Strategy and the Operational Level of War: Part II," a 1987 article in *Parameters* by COL David Jablonsky, a USAWC instructor.

¹²⁶ Wass de Czege, "Lessons from the Past: Making the Army's Doctrine 'Right Enough' Today," 12.

¹²⁷ The NTC opposing forces prevailed in over 90 percent of the battles they fought. Anne W. Chapman, *The National Training Center Matures: 1985-1993* (Ft. Monroe, Va.: Military History Office, United States Army Training and Doctrine Command, 1997), 170.

¹²⁸ *Ibid.*, 269.

the brigade level and below. The distances and resources available precluded deep attack training. The focus on ground tactical maneuver meant that by design and in practice, the National Training Center did not train the division and corps-level skills necessary for the Extended Battlefield concept at the heart of AirLand Battle.¹²⁹ In reality, the tactics of AirLand battle below the division level were virtually indistinguishable from those of the Active Defense.

The success of the National Training Center and the Joint Readiness Training Center, a similar facility for light infantry forces established at Fort Chaffee, Arkansas, sparked the development of a similar capability for divisions and corps, who had no means of training at one of the so-called “dirt” combat training centers. Lieutenant General Gerald T. Bartlett, CAC commander in 1986, directed Major General Frederick M. Franks, Jr., CGSC deputy commandant, to get an “NTC for division and corps off the ground.”¹³⁰ The solution that emerged was the Battle Command Training Program (BCTP). SAMS, now under Sinnreich, provided the initial concept for BCTP’s original teaching model and its first director, Colonel David S. Blodgett, who had attended SAMS as a USAWC Fellow.¹³¹ BCTP started training Active Army and National Guard divisions in 1988, providing a Soviet-style adversary appropriate to those echelons.¹³²

The potential for BCTP to train operational-level tasks appeared in its first corps-level exercise at Fort Hood, Texas in January 1989 with III Corps, for the corps’ wartime mission of

¹²⁹ The original intent of the NTC was for battalion-level maneuver training, not deep attack. The NTC did not start training brigade commanders and their staffs until 1987. Anne W. Chapman, *The Origins and Development of the National Training Center, 1976-1984* (Fort Monroe, Va.: Office of the Command Historian, United States Army Training and Doctrine Command, 1992), 57.

¹³⁰ Priscilla Offenbauer and David L. Osborne, *History of the U.S. Army Battle Command Training Program, 1986-2003* (Washington, D.C.: Library of Congress, Federal Research Division, 2007), 45.

¹³¹ COL (Ret) Richard H. Sinnreich, “Senior Officer Oral History Program: Colonel (Ret) Richard Sinnreich,” interview by Steven G. Fox, 2001, 25–26, U.S. Army Military History Institute, Senior Officer Oral History Program. The term “Dirt CTC” refers to the tactical combat training centers, versus BCTP, which was renamed the Mission Command Training Program in 2011.

¹³² Offenbauer and Osborne, *History of the U.S. Army Battle Command Training Program, 1986-2003*, 72–73.

reinforcement to NATO. The exercise replicated some of the likely challenges the corps would have faced in its wartime mission, such as the detailed movement planning required to deploy the corps from its ports of debarkation, the movement of follow-on forces into battle positions, and the clearance of deep fires.¹³³ Those challenges were consistent with the operational-level movement and logistics requirements in AirLand Battle, and involved the coordination of tactical actions to achieve operational objectives. However, those actions occurred in the execution of a relatively well-defined operational plan against clear strategic objectives. As a result, the BCTP exercises exercised only the execution of operational art. Units training under BCTP still planned predominantly at the tactical level. A venue for teaching true campaign planning, to include its linkages to strategy, remained elusive.

Although the Army's combat training centers were invaluable at building tradecraft at the tactical levels of war, none of them could fully teach the operational art. The interface with strategy, especially at division level and below, did not exist. Even corps headquarters, with responsibilities to prosecuting the deep battle, were one echelon removed from the strategic ends to which they were expected to contribute. The scenarios that BCTP provided those corps were still primarily tactical; the portion of operational art that involved the actual translation of strategic objectives into tactical direction was technically NATO's equity, not the Army's.

In practice, AirLand Battle translated into a tactical focus that was appropriate only to the division level and below. In addition, the focus on battalions and brigades meant that only units associated with an infantry or armored brigade received the full benefit of the close combat training at the "dirt" combat training centers.¹³⁴ Collective training for divisional and corps

¹³³ LTC (Ret) Thomas D. Morgan, "BCTP: Preparing for War," *Military Review* LXIX, no. 11 (November 1989): 7–10.

¹³⁴ Anne W. Chapman, *The National Training Center Matures: 1985-1993* (Ft. Monroe, Va.: Military History Office, United States Army Training and Doctrine Command, 1997), 35–64 passim.

intelligence, signal, and deep attack assets only happened under BCTP's purview. In a 1990 article, Holder, having succeeded Sinnreich as SAMS director, noted that there were "no training centers or simulations to support campaign planning or execution." Furthermore, the crisis games and joint exercises done at the war colleges did not address theater issues over a long period, and only portrayed concerns of logistics and deployment – all readily apparent in the III Corps BCTP exercise.¹³⁵

The practice of operational art only occurred at echelons above most of the Army's officers. The tactical bias that permeated the Army's culture, in addition to skewing the practice of AirLand Battle to the tactical level, also devalued the education in strategy that was required to properly frame operational art. The absence of significant instruction regarding strategy in the CGSC curriculum was a consequence of the need to provide its graduates a common basis in tactics at the corps level and below.¹³⁶ The political-military curriculum at USAWC eschewed the mechanics of operational art, focusing instead on national-level strategy and policy concerns. SAMS was the lone hedge in the institutional Army, principally due to its foundations in the theory and practice of operational art, as well as Holder's own effort as director in exploring the mechanics of corps-level maneuver.¹³⁷ However, the demands brought by the Goldwater-Nichols act for joint qualification, combined with the existing pressures for repetitive tactical

¹³⁵ COL Leonard D. Holder, "Educating and Training for Theater Warfare," *Military Review* LXX, no. 9 (September 1990): 93–94.

¹³⁶ There has been an elective track at CGSC from 1975 to the present day supporting the Army's 6Z additional skill identifier, titled "Strategist," but it was a strategic studies elective track administered by the Department of Joint and Combined Operations (and its predecessor organizations) that normally required a master's degree in a social science or related field, a research project, and several electives related to strategy. It has had no linkage to campaigning. The identifier became "Strategic Studies Graduate" in 2010 but the curriculum has seen only incremental change from its origins. The military history classes at CGSC did not add an elective on campaigning until academic year 1991. U.S. Army Command and General Staff College, "College Catalog, 1990-1991" (Fort Leavenworth, Kan., 1990), 63, College Catalogs, Combined Arms Research Library.

¹³⁷ Holder attributed this work to a question by Lieutenant General Crosbie Saint, III Corps commander, who asked, "how do you maneuver a corps in the attack?" The true vindication of Holder's work occurred after his directorship at SAMS, when he commanded the 2d Armored Cavalry Regiment, the VII Corps covering force in its deliberate attack during Operation DESERT STORM. Holder, interview, December 23, 2011.

command—often evaluated based on performance at one of the “dirt” combat training centers—and compressed timelines for promotions, could not offset the overwhelming tactical bias in the Army’s culture.¹³⁸

The Legacy of AirLand Battle

Robert Citino, in his history of late 20th century operational warfare, stated that the 1986 FM 100-5 “would represent for the army a kind of intellectual culmination point.”¹³⁹ It was, but not in a traditional sense. The Vietnam War provided the impetus for its veterans to reshape the intellectual basis for how the U.S. Army approached warfare.¹⁴⁰ The result went far beyond the rediscovery of tactics and strategy that occurred in the 1970s. The formalized introduction of operational art in the U.S. Army’s history was a direct result of the conclusion that neither tactics nor strategy alone could address the challenges the Army faced in the NATO Central Region.

What made the treatment of operational art in the 1986 FM 100-5 so notable was its clear description of the responsibilities of an operational-level headquarters. Those responsibilities were very real concerns to the participants of a U.S. Readiness Command joint symposium on the operational level of war, held just four months before the 1986 FM 100-5 saw formal publication. The participants observed the absence of a training gap at the operational level of war, a fixation on a joint operations plan rather than the actual sequencing of operations inherent to execution of the plan, the need for a single campaign rather than separate service campaigns,

¹³⁸ Kevin Benson, a former director of SAMS, also mentioned a growing hostility towards a perceived “SAMS elite” on the part of other officers who were not SAMS graduates – a perception he personally observed. Kevin C. M. Benson, “Educating the Army’s Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994” (PhD dissertation, Lawrence: University of Kansas, 2010), 109.

¹³⁹ Robert M. Citino, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare* (Lawrence: University Press of Kansas, 2004), 265.

¹⁴⁰ Sinnreich, “Senior Officer Oral History Program: Colonel (Ret) Richard Sinnreich,” 14, 2001.

and the relationship between logistics and operations.¹⁴¹ Those concerns were very much on the minds of the authors of AirLand Battle in the 1980s.

The promise of operational art as described in the 1986 FM 100-5 manual had an inherent limitation that the authors of AirLand Battle recognized, and over which the Army had no control.¹⁴² A comprehensive U.S. joint doctrine remained beyond any consensus, even after the passage of the 1986 Goldwater-Nichols Act. The closest such document was the Joint Chiefs of Staff Publication 0-2, *Unified Action Armed Forces (UNAAF)*, written shortly after the passage of Goldwater-Nichols. The *UNAAF* manual described roles and missions for the services, joint command and control relationships, and agreements for support amongst the services. Anything that even remotely sounded like an operational joint concept did not exist in *UNAAF*.¹⁴³ Even in its watered-down state, the Navy bitterly opposed the doctrine, fearing subordination of Navy forces to a joint force commander who might override service interests. No joint doctrinal consensus would appear in the 1980s.¹⁴⁴

The true effectiveness of AirLand Battle as a concept was its use as a focal point for the development of doctrine, force structure, training, materiel, and leader development. It was the aggregated effects of all of those elements of the force that directly contributed to successful execution of NATO's peacetime strategy.

Fortunately, NATO was spared a true test of its wartime strategy. The tensions between NATO Alliance strategy and the tactical demands required to prosecute the interdiction attacks in FOFA and AirLand Battle were never definitively addressed, certainly not in ATP-35(A).

¹⁴¹ GEN Fred K. Mahaffey, letter to General William R. Richardson, Commander TRADOC, March 24, 1986, Box 37, U.S. Army Military History Institute, William R. Richardson Papers.

¹⁴² Holder, interview, December 23, 2011.

¹⁴³ Joint Chiefs of Staff, *Joint Chiefs of Staff Publication 0-2: Unified Action Armed Forces (UNAAF) with Change 1* (Washington, D.C.: G.P.O., 1986). Chapter 4 describes "Joint Activities in the Operations of the Armed Forces," but its description of procedures is largely procedural in nature.

¹⁴⁴ James R. Locher, *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon* (College Station: Texas A & M University Press, 2002), 416, 440.

While Rogers forcefully emphasized his opposition to AirLand Battle and its potential lowering of the nuclear threshold, reconciling the dichotomy between strategy and tactics would have required a NATO operational concept and doctrine far more expansive than what was in FOFA or ATP-35(A). The members of the Alliance likely would not have ratified any such concept or doctrine, given their policy differences.

The irony of the success of AirLand Battle was that it emphasized to the Soviets the need to fight using the operational maneuver groups envisaged by Marshal of the Soviet Union Nikolai V. Ogarkov, the Chief of the Soviet General Staff. The deep attack integral to AirLand Battle resulted in a change in the disposition of Soviet forces into a single operational echelon. A very real vindication for Starry occurred in a discussion with a Soviet general who had commanded the Carpathian *Front*, a fourth-echelon Soviet unit. That Soviet general had reported to his superiors that if NATO could do what Starry proposed in “Extending the Battlefield,” the *front* could not accomplish its mission.¹⁴⁵ Instead of echelonment, the Soviets planned for multiple penetrations off a single echelon using operational maneuver groups to splinter the NATO defense.

What NATO did acquire, based on FOFA and AirLand Battle, were the systems necessary for deep intelligence, surveillance, target acquisition, and reconnaissance, as well as the fire support systems necessary to destroy targets at deep attack distances, a term that is now called a “kill chain.” The U.S. Army fielded systems such as the Copperhead laser-guided artillery shell, artillery-delivered cluster bomblets, the Multiple Launch Rocket System (MLRS), the Army Tactical Missile System (ATACMS), helicopter-and-ground-delivered Family of Scatterable Mine (FASCAM) systems, and the Pershing II medium-range ballistic missile. The U.S. Air Force’s own systems included air-launched and ground-launched cruise missiles

¹⁴⁵ Starry, *Press On!: Selected Works of General Donn A. Starry*, 1:450.

(ALCM/GLCM), air-delivered cluster bombs and FASCAM systems, the LANTIRN navigation and targeting system for strike fighter aircraft, and the Joint STARS ground attack radar system.¹⁴⁶

The Soviets considered the complementary employment of these so-called “reconnaissance-strike complexes” (in Soviet usage) the greatest threat from AirLand Battle and FOFA.¹⁴⁷ The combination of these systems and the theater-level precision strike deterrent from the GLCM and Pershing II theater nuclear weapons posed a risk to the force that the Soviets could not ignore. Unlike the American fielding of these systems, the Soviets could not reliably establish functional kill chains for their own reconnaissance-strike complexes. The result was a death spiral of technology that the Soviets ultimately lost given the decisive Western superiority in solid-state electronics and miniaturization.¹⁴⁸

The advent of deep target acquisition and attack capabilities to NATO required an intellectual refinement to the doctrine of the day. In the absence of a concept for the employment of those systems, the owners of those systems would not likely have employed them in the complementary way needed to avoid defeat in detail and best achieve what the NATO strategy was attempting to attain. The exploration of the Extended Battlefield was the first step in this transition from the tactics expressed in Active Defense, and the strategy to which manuals such as FM 100-1 alluded. However, the discussion of the operational level of war and the operational art in the AirLand Battle editions of FM 100-5 placed all of the likely military activities for U.S. Army forces into a continuum that clearly linked strategy to tactical actions.

¹⁴⁶ U.S. Congress, Office of Technology Assessment, *New Technology for NATO: Implementing Follow-On Force Attack*, Special Report (Washington, D.C.: G.P.O., June 1987), 29–46 passim, http://www.princeton.edu/~ota/disk2/1987/8718_n.html (accessed December 13, 2011).

¹⁴⁷ Glantz, interview, October 27, 2011. Christopher N. Donnelly, “The Soviet Operational Maneuver Group: A New Challenge for NATO,” *Military Review* LXIII, no. 3 (March 1983): 47–52. An overview of Soviet concepts of reconnaissance-strike complexes appears in Milan N. Vego, *Recce-Strike Complexes in Soviet Theory and Practice* (Fort Leavenworth, Kan.: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1990), 1–3.

¹⁴⁸ Jacob W. Kipp, interview by author, October 3, 2011, notes in author’s possession.

In a 2009 critique of AirLand Battle, Justin Kelly and Michael Brennan, two Australian military authors, asserted that the operational level war as introduced in the 1982 FM 100-5 was an attempt to widen the gap between politics and warfare, describing operational art as “the entirety of warfare from campaign design down to battalion level.”¹⁴⁹ While their criticisms have some limited applicability to the 1982 edition, their charge that operational art reduced the political leadership to “strategic sponsors” is incongruous with the subordination of military operations to strategic goals in the 1986 manual. The 1986 manual was emphatic that “strategy derived from policy must be clearly understood to be the sole authoritative basis of all operations,” hardly the military usurpation of strategy that Kelly and Brennan suggested.¹⁵⁰

The revised AirLand Battle doctrine as expressed in the 1986 FM 100-5 was the first true operational level doctrine in the U.S. Army. Wass de Czege, in remarks at the 25th anniversary of SAMS in 2009, noted that “most division-and-above field exercises of the 1970s and early 1980s consisted of a few days of battalion- and brigade-level maneuver ending with “nuclear release.”¹⁵¹ By the late 1980s, the institutionalization of AirLand Battle had fundamentally changed the equation.

The 1986 FM 100-5 remains to this day a model of clearly written doctrine and almost three decades after its development, is the benchmark against which every one of its successors has been compared.¹⁵² It occupies a pedestal that it richly deserves, although not in ways that most of its practitioners understood. The Army’s cultural bias towards tactics, combined with

¹⁴⁹ Justin Kelly and Michael J. Brennan, *Alien: How Operational Art Devoured Strategy* (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2009), 92–95.

¹⁵⁰ Department of the Army, *FM 100-5 (1986)*, 10.

¹⁵¹ Huba Wass de Czege, “The School of Advanced Military Studies: An Accident of History,” *Military Review* LXXIX, no. 4 (August 2009): 104.

¹⁵² In 2010, the Center for Strategic and Budgetary Assessments published an operational concept called *AirSea Battle*, which included an explicit tribute to AirLand Battle and its roots. Jan M. van Tol et al., *AirSea Battle: A Point-of-Departure Operational Concept* (Washington, D.C.: Center for Strategic and Budgetary Assessments, 2010), 5–8.

the mechanisms for training the Army itself, meant that the practice of operational art was often suspect, because it occurred without explicit linkage to the strategic level. Such activity could only occur under the purview of a joint force commander or a land force with direct equities to strategic objectives. The lowest level at which this occurred both in campaign planning and in its execution was at the army group level, an echelon for which the Army had no equities to train.

AirLand Battle did make one enduring contribution to the culture of the Army. Its emphasis on decentralized command and the direction of friendly strengths against enemy weaknesses remains a cornerstone of the Army's organizational culture to this day.¹⁵³ The adoption of those cultural tenets paralleled developments in the U.S. Marine Corps, which had emerged from Vietnam with a sense that it also needed to recast itself in a new image. The method by which the Marine Corps reframed its doctrine and philosophies in the 1970s and 1980s, in spite of some of its apparent similarities to the Army's own journey, took on a far different character.

¹⁵³ U.S. Army Training and Doctrine Command, *The Army Capstone Concept: Operational Adaptability: Operating Under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict: 2016-2028* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 2009), 16–19. The 2009 *Army Capstone Concept* also provides an example of the other enduring trend in the Army's culture, namely the inappropriate application of tactical concepts against strategic problem sets.

Chapter 5

Fighting Outnumbered and Winning: The U.S. Marine Corps and Maneuver Warfare

I was deeply saddened to learn of the passing of Colonel John Boyd, USAF (Ret). How does one begin to pay homage to a warrior like John Boyd? He was a towering intellect who made unsurpassed contributions to the American art of war. Indeed, he was one of the central architects in the reform of military thought which swept the services, and in particular the Marine Corps, in the 1980s. From John Boyd we learned about competitive decision making on the battlefield—compressing time, using time as an ally. Thousands of officers in all our services knew John Boyd by his work on what was to be known as the Boyd Cycle or the OODA Loop. His writings and his lectures had a fundamental impact on the curriculum of virtually every professional military education program in the United States. . .

. . . So, how does one pay homage to a man like John Boyd? Perhaps best by remembering that Colonel Boyd never sought the acclaim won him by his thinking. He only wanted to make a difference in the next war . . . and he did. That ancient book of wisdom-Proverbs-sums up John's contribution to his nation: "A wise man is strong and a man of knowledge adds to his strength; for by wise guidance you will wage your war, and there is victory in a multitude of counselors." I, and his Corps of Marines, will miss our counselor terribly.

C. C. Krulak
General, U.S. Marine Corps
Commandant, U.S. Marine Corps¹

The philosophy of the conduct of warfare by the U.S. Marine Corps owes its intellectual underpinnings to an unlikely source—a retired U.S. Air Force fighter pilot who never served a day in ground combat. The theoretical work of Colonel John R. Boyd (1927-1997) was the lodestar for a community of heretics within and outside the Marine Corps who fundamentally changed the nature of how the Marine Corps trained, educated, and employed its forces – and their efforts had influence outside the Marine Corps itself. The influence of those heretics was

¹ Maj Jeffrey L Cowan, "Warfighting Brought to You by," *U.S. Naval Institute Proceedings* 127, no. 11 (2001): 62.

apparent in the eulogy of Boyd that General Charles C. Krulak, Commandant of the Marine Corps, gave in 1997.

In the Marine Corps the term “maneuver warfare” has a meaning peculiar to that service. Marine Corps Doctrinal Publication 1, *Warfighting*, the current capstone doctrinal manual, defines maneuver warfare succinctly:

...which stems from a desire to circumvent a problem and attack it from a position of advantage rather than meet it straight on. Rather than pursuing the cumulative destruction of every component in the enemy arsenal, the goal is to attack the enemy "system"—to incapacitate the enemy systemically. Enemy components may remain untouched but cannot function as part of a cohesive whole...Instead of attacking enemy strength, the goal is the application of our strength against selected enemy weakness in order to maximize advantage.²

While the definitions of maneuver warfare have evolved over time, all of them reflected a method of combat that focused on the moral domain of warfare—defeating an adversary primarily through psychological collapse. Such an approach contrasted with a mechanistic use of firepower to destroy an enemy, a method consistent with the physical domain of warfare. Much of the practice of maneuver warfare implies a decentralized approach that trades synchronization and certainty for speed and initiative, accepting chaos and uncertainty as a matter of course.³

The intellectual direction of the U.S. Marine Corps in the 1970s and 1980s took a significantly different path than that of the Army in the same period. Of the services, the Marine Corps was the most resistant to the bureaucracy and culture of management that had pervaded the Department of Defense during the period of the Vietnam War. The philosophy that emerged out of a largely informal post-Vietnam reassessment of the Marine Corps was maneuver warfare,

² Headquarters, U. S. Marine Corps, *Marine Corps Doctrinal Publication 1: Warfighting* (Washington, D.C.: G.P.O., 1997), 37–38.

³ The moral domain of warfare addresses the often-intangible factors that lead to motivation of a combatant, rather than the physical aspects of combat, which are more easily quantified.

which evolved parallel to the Army's own development of tactical and operational doctrine. Maneuver warfare, unlike the Army's development of AirLand Battle, was not expressly a school of operational art. Instead, maneuver warfare represented a separate school of thought altogether that was peculiar to the Marine Corps. The circumstances that led to the emergence of a concept such as maneuver warfare, however, started from a periodic dilemma for the Marine Corps, namely its roles and missions coming out of a major conflict.

The Organizational and Cultural Influences on the U.S. Marine Corps in the Post-Vietnam Period

The Marine Corps emerged from Vietnam in a familiar position—facing scrutiny for its continued relevance as an amphibious force. At the heart of the Marine Corps' concerns was its survival as an institution. To survive, it had to differentiate itself from the Army's capabilities. The Marine Corps had looked past Vietnam as early as 1970 in terms of its future requirements and force structure, in the form of the Metered Application of Power in Sea-Land Operations (MAPSLO). Under the 1969 directive of the Commandant, General Leonard F. Chapman, the Marine Corps was to establish a capability to deploy forces from a naval expeditionary force to enable the conduct of contingency and amphibious forcible entry operations. Chapman directed a return to the amphibious mission as the main responsibility of the Marine Corps. The MAPSLO concept made specific comparisons between Marine Amphibious Task Forces and other forces with a contingency response capability, such as Army airborne forces.

That emphasis was also consistent with the findings of National Security Study Memorandum (NSSM) 50, published in April 1969. NSSM-50 directed a study of naval forces as part of a larger study of U.S. military posture and the balance of power with the Soviet Union

directed by NSSM-3, published in January 1969.⁴ Consistent with this guidance, the Marine Corps promulgated guidance for its senior leadership outlining the role for the Marine Corps in sea control operations, one of the U.S. Navy's primary missions for many of its likely wartime scenarios.⁵

The Marine Corps' internal concern about roles and missions was a reaction to external scrutiny of the institution and its continued relevance. Secretary of Defense James Schlesinger expressed concern as to the need for a Marine Corps in 1974, questioning the continuing need for "an amphibious assault force which has not seen anything more demanding than essentially unopposed landings for over 20 years, and which would have grave difficulty in accomplishing its mission of over-the-beach and flanking operations in a high threat environment."⁶ Schlesinger's shot across the bow was only a beginning. That same year, the Senate Armed Services Committee requested that the Commandant review the Marine Corps' force structure, mix of air and ground forces, and manpower authorizations.⁷

The Marine Corps was no stranger to fights for its survival, having spent the first half of the Cold War in battles over budget and force structure.⁸ In response to the Senate's request, the Marine Corps organized a "Mission and Force Structure Study" in 1975, under the oversight of

⁴ U.S. Marine Corps, Doctrine and Education Command, "Concept for Organization and Employment of the Fleet Marine Forces In the Immediate Post-RVN Period," 1970, 12–19, Box 49, Group 857, Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center. Henry A. Kissinger, *National Security Study Memorandum 50*, 1969. Henry A. Kissinger, *National Security Study Memorandum 3*, 1969.

⁵ Headquarters, U. S. Marine Corps, Deputy Chief of Staff for Requirements and Programs, "The Role of Fleet Marine Forces in Sea Control," 1976, 1–2, Box 48, Group 842, Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

⁶ Office of the Secretary of Defense, *Annual Defense Department Report, FY 1976 and FY 1977, Report of Secretary of Defense James R. Schlesinger to the Congress on the FY 1976 and Transition Budgets, FY 1977 Authorization Request and FY 1976-1980 Defense Programs*, February 5, 1975, III–26.

⁷ Martin Binkin and Jeffrey Record, *Where Does the Marine Corps Go From Here?* (Washington: Brookings Institution, 1976), 2.

⁸ Victor H. Krulak, *First to Fight: An Inside View of the U.S. Marine Corps* (Annapolis, Md.: Naval Institute Press, 1984), 32–66. Krulak was one of the key participants in the Marine Corps' efforts to shape the National Security Act of 1947.

Major General Fred Haynes, the Deputy Chief of Staff for Research, Development, and Studies at Headquarters, Marine Corps.⁹ The “Mission and Force Structure Study,” more informally known as the Haynes Report, was a fundamental document in defining the direction of the Marine Corps after the 1970s. The Haynes Report represented a distinct shift away from the Marine Corps’ operations as a second land army during Vietnam, and noted the requirement for “a ready, mobile force with amphibious expertise”:

- (1) A reorientation away from low intensity combat in Asia and other less developed countries...is in the long term interest of the Marine Corps.
- (2) The future of the Marine Corps depends on its capability to conduct amphibious operations and subsequent operations ashore in a mid-to-high intensity conflict.
- (3) Conditions on the modern battlefield re-emphasize the importance of the combined arms team, but simultaneously require a modification of the roles of some of its key components such as infantry and tactical aircraft.¹⁰

The Haynes Report, looking at the institution, focused on the Marine Corps’ structure, roles and missions, which formed part of the strategic basis for the likely employment of Marine forces after Vietnam, an eventual foundation for any examination of Marine forces in operational art. As an institutional study, it did not examine the tactics that Marines would use. Those tactics, and indeed, the underlying philosophy for those tactics, became the focus of effort for a dedicated group of reformers. The impetus for the reformers’ efforts was a general dissatisfaction with the tactics used in that conflict among several influential Vietnam veterans and their associates. The reformers perceived a hopelessly mechanistic approach to tactics within the Marine Corps, and espoused a philosophy eventually called maneuver warfare, which coincided with wider discussions of mechanization in the wake of the findings of the Haynes

⁹ Headquarters, U. S. Marine Corps and Office of the Deputy of Commandant for Manpower and Reserve Affairs, “Official Biography: Major General Fred E. Haynes, Jr.,” 2010, https://slsp.manpower.usmc.mil/GOSA/biographies/rptBiography.asp?PERSON_ID=535&PERSON_TYPE=General (accessed April 2, 2011).

¹⁰ Headquarters, U. S. Marine Corps, Office of the Deputy Commandant for Research, Development and Studies, *Mission and Force Structure Study, Vol. 1*, 1976, i, vi, Box 50, Group 858, Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

Report.¹¹ Ironically, the central figure in the theoretical changes underpinning maneuver warfare was a retired U.S. Air Force colonel with no experience of ground combat.

Theoretical Influences on Maneuver Warfare

Colonel John R. Boyd, the intellectual father of the maneuver warfare advocates, served twenty-four years in the U.S. Air Force as a fighter pilot. He saw some combat in Korea, and became renowned as an instructor pilot at the Fighter Weapons School at Nellis Air Force Base, Nevada. Boyd distilled his observations in combat and at the Fighter Weapons School into a manual called *Aerial Attack Study*, the Air Force's first comprehensive manual on air combat maneuvering. *Aerial Attack Study* became the basis for the air combat maneuvering training for the Air Force, Navy, and Marine Corps. It also provided a springboard for Boyd, who then attended the Georgia Institute of Technology for a bachelor's degree in industrial engineering, to develop a model for describing the performance characteristics of any aircraft in air-to-air combat. The resultant Energy-Maneuverability Theory was the basis for a revolutionary change in how the U.S. Air Force developed fighter aircraft. The F-15 Eagle and F-16 Fighting Falcon, the first fighters designed with the Energy-Maneuverability Theory in mind, embodied a quantum improvement in maneuverability and lethality over their predecessors.¹²

However, Boyd's most lasting intellectual contribution to military doctrine began near the end of his Air Force career. Boyd's work on air combat maneuvering and the Energy-

¹¹ LtGen (Ret) Paul K. Van Riper, interview by author, March 28, 2011, notes in author's possession. Col (Ret) Michael D. Wyly, interview by author, March 20, 2011, notes in author's possession.

¹² Grant Tedrick Hammond, *The Mind of War: John Boyd and American Security* (Washington: Smithsonian Institution Press, 2001), 1–9. Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (Boston: Little, Brown, 2002), 126–134. An evocative description of the qualitative difference between the “fourth generation” fighters and the aircraft they replaced appears in chapters 15 and 17 of C. R. Anderegg, *Sierra Hotel: Flying Air Force Fighters in the Decade After Vietnam* (Washington, D.C.: Air Force History and Museums Program, 2001). The pilots who flew the F-16, a direct result of Boyd and his associates, referred to the aircraft not as the “Fighting Falcon,” its official name, but the “Viper,” in homage to the fighter craft from the 1970s television show *Battlestar Galactica*.

Maneuverability Theory were steps towards this contribution, which unlike his previous work had little to do directly with air power. The genesis of this contribution began during a 1972 combat tour at Nakon Phanom Air Base, Thailand but saw full fruition after his retirement from the Air Force in 1975. The first part was *Destruction and Creation*, which offered an epistemological concept grounded in the destruction of existing mental models to create a new synthesis.¹³ Boyd derived his synthesis from three insights, specifically the postulates of mathematician Kurt Gödel on the incompleteness of a system, the uncertainty principle of physicist Werner Heisenberg, and the observations on confusion and disorder in the Second Law of Thermodynamics. Boyd posited a possible “Dialectic Engine that permits the construction of decision models needed by individuals and societies for determining and monitoring actions in an effort to improve their capacity for independent action.”¹⁴ Frans Osinga, whose dissertation represents the most comprehensive analysis of Boyd’s work, describes this dialectic as “as keys to how to think, how to compete successfully, and how to adapt and survive.”¹⁵ *Destruction and Creation* led Boyd to a much more comprehensive view of human conflict.

Boyd’s most influential work and the basis for the advocacy by maneuver warfare proponents appeared over the next few years in the form of a presentation called *A Discourse on Winning and Losing*, or more informally, “The Green Book,” for the green covers on the copies that Boyd distributed.¹⁶ Several themes emerged from the *Discourse*: a philosophy of organizational command and control, the ability to adapt to changing elements in the environment, and most significantly, the mechanics for achieving disruption, dislocation, and

¹³ Coram, *Boyd*, 318–326.

¹⁴ John R. Boyd, “Destruction and Creation,” unpublished paper, 1976.

¹⁵ Frans P. B. Osinga, “Science, Strategy and War: The Strategic Theory of John Boyd” (PhD dissertation, Leiden, Netherlands: Leiden University, 2005), 79.

¹⁶ *Ibid.*, 2.

defeat of an adversary, expressed through the Observe-Orient-Decide-Act (OODA) Loop, which was the distillation of much of Boyd's theoretical work.¹⁷

The first portion of the *Discourse* was a thinkpiece called *Patterns of Conflict*, in which Boyd took his air combat maneuvering experience and sought to apply those observations beyond air-to-air combat. His observations in *Aerial Attack Study* and the Energy-Maneuverability Theory highlighted the notion of fast transients, or changes in state more rapid than that of an adversary:

- Idea of fast transients suggests that, in order to win, we should operate at a faster tempo or rhythm than our adversaries—or, better yet, get inside adversary's observation-orientation-decision-action time cycle or loop.
- Why? Such activity will make us appear ambiguous (unpredictable) thereby generate confusion and disorder among our adversaries—since our adversaries will be unable to generate mental images or pictures that agree with the menacing as well as faster transient rhythm or patterns they are competing against.¹⁸

The next conceptual foundation of Boyd's theoretical work appeared in *Organic Design for Command and Control*, which held as its central assumption that all war entailed some unavoidable degree of friction (a term originating in Carl von Clausewitz's *On War*) but that reality could be minimized “by implicit understanding, trust, cooperation, simplicity, focus, etc.” Boyd drew heavily from several case studies of successful military leaders, among them the Prussian general staff system, and studies of Erwin Rommel and Heinz Guderian.¹⁹ Boyd outlined a philosophy of command and control based primarily on implicit control rather than explicit direction from above, informed by his prior thoughts on the OODA loop:

- Need insight and vision, to unveil adversary plans and actions as well as “foresee” own goals and appropriate plans and actions.

¹⁷ Hammond, *The Mind of War: John Boyd and American Security*, 13.

¹⁸ John R. Boyd, “Patterns of Conflict,” unpublished presentation, December 1986, 5. Capt John R. Boyd, *Aerial Attack Study* (Nellis AFB, Nev.: U.S. Air Force Tactical Air Command Fighter Weapons School, August 11, 1966), 146.

¹⁹ John R. Boyd, “Organic Design for Command and Control,” unpublished presentation, May 1987, 6–8. See also Osinga, “Science, Strategy and War: The Strategic Theory of John Boyd,” 233.

- Need focus and direction, to achieve some goal or aim.
- Need adaptability, to cope with uncertain and ever-changing circumstances.
- Need security, to remain unpredictable.²⁰

Boyd's philosophy of command and control explicitly cited Darwinian adaptation as an essential function for faster transients, and a subsequent rapid adaptation as the key to faster transients. He also added the foundations of *Destruction and Creation* to illustrate that any command and control system could never operate in an environment of total certainty, and that attempts to achieve perfect certainty of the environment would actually lead to confusion and disorder. Consequently, a system of implicit command and control that could cope with uncertainty would enable actors to better adapt to the environment, while reacting more quickly than an adversary.²¹ By extension, orientation became the most critical element of command and control.

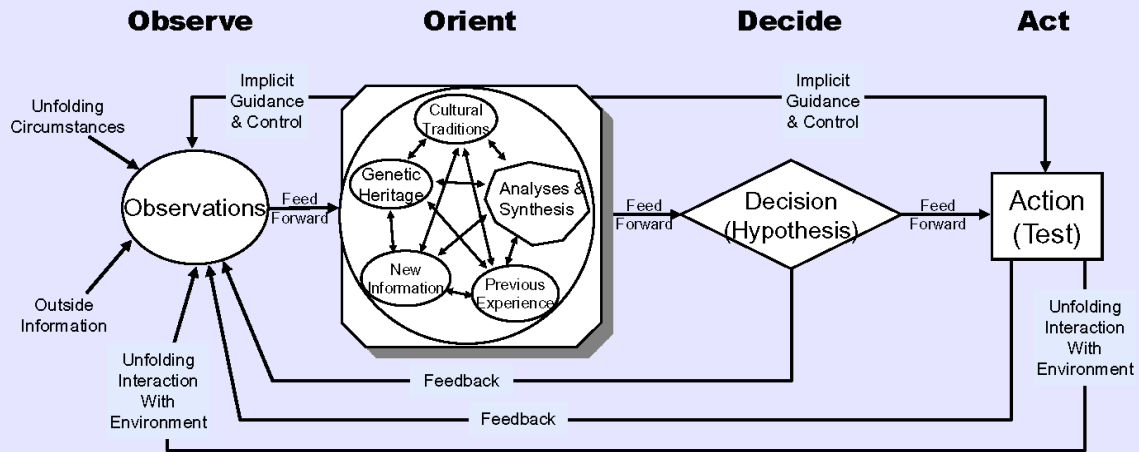
Boyd never created a full explanation of the OODA Loop until a year prior to his death. A decade after completing *Patterns of Conflict*, he articulated the full OODA loop in a 1996 presentation called *The Essence of Winning and Losing*, which only appeared on *Defense and the National Interest*, a now-defunct website hosted by Chet Richards, one of Boyd's closest friends, and one of the few individuals who can still deliver the entire *Patterns of Conflict* briefing.²² By then, the OODA loop itself had become well-known.

²⁰ Boyd, "Organic Design for Command and Control," 3.

²¹ *Ibid.*, 20–23, 25.

²² Coram, *Boyd*, 442–446. The other two are Chuck Spinney and Pierre Sprey.

The OODA “Loop” Sketch



Insights:

Note how orientation shapes observation, shapes decision, shapes action, and in turn is shaped by the feedback and other phenomena coming into our sensing or observing window.

Also note how the entire “loop” (not just orientation) is an ongoing many-sided implicit cross-referencing process of projection, empathy, correlation, and rejection.

3

Figure 2: Boyd’s full OODA Loop diagram from *The Essence on Winning and Losing* as reconstructed by Chet Richards. This diagram is the only version that Boyd published.²³

Boyd’s theories and briefings became the intellectual basis for the Military Reform Movement, the members of which spanned the military, politics, academia, and private citizens. The most influential members of this movement, aside from Boyd, included *The Atlantic Monthly*’s James Fallows, whose 1981 book *National Defense* offered a scorching critique of defense spending. Another was Tom Christie, a senior Defense civilian in the Office of the Secretary of Defense’s Program Assessment and Evaluation division. Christie knew Boyd from their days at Eglin Air Force Base, where he aided Boyd in gaining the computer access required to vet the Energy-Maneuverability Theory. Two other advocates included Pierre Sprey, one of

²³ John R. Boyd, “The Essence of Winning and Losing,” Presentation slides, 1996, 3, http://pogoarchives.org/m/dni/john_boyd_compendium/essence_of_winning_losing.pdf (accessed June 11, 2012).

the designers of the A-10 Thunderbolt II ground attack aircraft, and Chuck Spinney, an Air Force officer initially assigned to Boyd's section who also worked in Program Assessment and Evaluation Division after leaving the Air Force. Most of these individuals had no combat experience but used Boyd's ideas as a catalyst to champion changes in defense spending.²⁴ Perhaps their most visible member was Senator Gary Hart, best remembered for his unsuccessful run at the Democratic presidential nomination in 1984.²⁵

Of the Military Reformers, the most prolific in print was William Lind, one of Hart's legislative civilian aides. Lind was a frequent contributor to military journals, but the one in which he published the most was the *Marine Corps Gazette*. Lind's early contributions centered on a debate over the need for mechanization in a post-Vietnam Marine Corps seeking to reorient itself away from Vietnam.²⁶ However, Lind's writings shifted from mechanization towards maneuver warfare in 1979 and 1980. The catalyst for this shift appeared in two articles by Captain Stephen W. Miller in the *Marine Corps Gazette*, collectively titled "Winning through Maneuver."²⁷ Miller's articles marked the first public acknowledgement of Boyd in the *Marine Corps Gazette*. Lind refocused his writings around Boyd's theories throughout the 1980s and stimulated a heated discourse within the Marine Corps over maneuver warfare that lasted over a decade.

²⁴ Lt Col Walter Kross, "Military Reform: Past and Present," *Air University Review* 32, no. 5 (1981): 101. Kross's article was a response to Boyd's and his associates' positions. Kross worked in the Tactical Air Forces division of the Air Staff Directorate of Plans at the time that Boyd was at the OSD PA&E Tactical Air Program, so Kross's observations on the group likely stem from personal interactions.

²⁵ Coram, *Boyd*, 362.

²⁶ Terry Terriff, "'Innovate or Die': Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps," *Journal of Strategic Studies* 29, no. 3 (2006): 485–491.

²⁷ Capt Stephen W. Miller, "Winning Through Maneuver: Part I - Countering the Offense," *Marine Corps Gazette* 63, no. 10 (1979): 28–36. Capt Stephen W. Miller, "Winning Through Maneuver: Conclusion - Countering the Defense," *Marine Corps Gazette* 63, no. 12 (December 1979): 57–63.

The Debate over Maneuver Warfare

The debate over maneuver warfare in the Marine Corps was a polarized affair between two camps. These groups, occasionally called “maneuverists” and “attritionists,” espoused two competing schools of warfare in a debate that raged through the Marine Corps in practice, as well as in the pages of the *Marine Corps Gazette*. The notion of maneuver warfare on a larger scale could not occur without its wide acceptance by senior leadership, whose approval was far from certain, especially before 1989, when General Alfred M. Gray, Jr., Commandant of the Marine Corps, decreed that maneuver warfare was to be the underlying philosophy of the Marine Corps.

The primary venue for this debate was the *Marine Corps Gazette*, the professional journal of the Marine Corps Association. The Association was formed in 1913 by Marines of the 2d Provisional Brigade of Marines, under the direction of then-Lieutenant Colonel John A. Lejeune, a future Commandant of the Marine Corps. As a professional organization, the Marine Corps Association provided a forum for professional development as well as the spirit and traditions of the Marine Corps.²⁸ Because the Association was a private organization run by serving and retired Marines but not the Marine Corps itself, it provided a venue free of the direct command influence that would have been the case with an official publication. The *Marine Corps Gazette*, in the absence of any other journal, has been the single professional forum dedicated to the Marine Corps. Under the editorial direction of John E. Greenwood, a retired colonel and former Marine regimental commander, the advocates of maneuver warfare had a place where their

²⁸ Marine Corps Association, “About the Marine Corps Association,” 2010, <http://www.mca-marines.org/about> (accessed April 16, 2011).

often-controversial ideas could see print. Without Greenwood's editorial protection, maneuver warfare probably would have died before it had a chance to be taken seriously.²⁹

Before Boyd's *Discourse on Winning and Losing*, the Marine Corps was in the throes of a debate over mechanization. The U.S. Army was already in the process of an internal reexamination of its own capabilities and missions after observing the Yom Kippur War, which was dominated by armored forces and marked a tremendous increase in battlefield lethality over previous conflicts. The Yom Kippur War took on even more importance in the retrenchment after Vietnam, as it was the first armored conflict involving contemporary mechanized and armored systems. The 1973 conflict was also the first one that involved heavy use of antitank guided missiles on the battlefield.³⁰

The Marine Corps' reexamination of mechanization owed partly to studies of armored conflict in Israel, but also was a result of post-Vietnam explorations of amphibious operations. Lieutenant Colonel Gerald H. Turley, whose own experiences as Senior Military Advisor to the South Vietnamese Marines informed his book *The Easter Offensive: The Last American Advisors*, sounded the first significant clarion call to the Marine Corps in a December 1974 *Marine Corps Gazette* article called "Time of Change in Modern Warfare." Turley cited not only the last three years of conflict in Vietnam, but also the 1967 Six Day and 1973 Yom Kippur Wars in illustrating the need for the Marine Corps to embrace combined arms, as well as "major

²⁹ Coram, *Boyd*, 388. The Marine Corps did not publish its own scholarly journal until 2010, but the *Marine Corps University Journal* publishes only biannually on issues of national security and international relations. A discussion of military tactics and operations (as was the case for maneuver warfare) would be out of place in such a publication. Issues of more general interest to the sea services normally appeared in the *Proceedings of the U.S. Naval Institute*, an independent organization serving the Navy, Marine Corps, and Coast Guard.

³⁰ General Creighton W. Abrams, Army chief of staff after Vietnam and a legendary armor commander from World War II, commissioned a study of Israeli combat practices immediately after the conclusion of the Yom Kippur War. Abrams sent Major General Donn A. Starry, commander of the Armor Center and eventual chief architect of the tactical elements of AirLand Battle. The result was a still-classified study in several volumes published by the U.S. Army Combined Arms Training Development Activity in 1974. GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry*, ed. Lewis Sorley, vol. 2 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 1016.

revisions in thought, tactical doctrine, and tactics of employment.”³¹ Lind wrote his first article to the *Marine Corps Gazette* just after the Haynes Study Group had convened. He argued that the Marine Corps need to be capable of forcible entry, meaning the ability to seize and hold a foothold in the face of armed opposition, as part of its contingency response mission - with the additional capability, unlike airborne forces, that it had to be able to “defeat mechanized opponents in mobile warfare.”³² By 1976, Lind had embraced the utility of the “*blitzkrieg* concept...(for) rapid and unexpected maneuver to paralyze the mind and will of the opposing command, not to kill large numbers of enemy troops.”³³ Lind’s arguments also drew from “FM 100-5: Some Doctrinal Questions for the United States Army,” his criticism of the 1976 edition of FM 100-5 published in *Military Review*, the official journal of the Command and General Staff College. The notion of battlefield victory through dislocation rather than through physical destruction of enemy forces was a harbinger of Lind’s future collaboration with Boyd.³⁴

Captain Stephen W. Miller was another outspoken voice in the debate over mechanization. His first contribution was an article in the July 1978 *Marine Corps Gazette* titled “It’s Time to Mechanize Amphibious Forces,” in which he advocated a fully mechanized and armored Marine Corps, enabling “flexibility, speed and surprise to maximum effect.”³⁵ However, Miller’s “Winning through Maneuver” articles presented by far the most provocative arguments in terms of future content. They represented both an explicit articulation of Soviet

³¹ LtCol Gerald H. Turley, “Time of Change in Modern Warfare,” *Marine Corps Gazette* 58, no. 12 (December 1974): 17–20. Turley is better known for his 1984 book *The Easter Offensive: The Last American Advisors, Vietnam, 1972*, a history and memoir of his experiences as an advisor with the Republic of Vietnam Marine Corps in that offensive.

³² William S. Lind, “A Proposal for the Corps: Mission and Force Structure,” *Marine Corps Gazette* 59, no. 12 (December 1975): 16.

³³ William S. Lind, “Mechanization Is Needed,” *Marine Corps Gazette* 60, no. 8 (August 1976): 13.

³⁴ Coram, *Boyd*, 330–331. William S. Lind, “Some Doctrinal Questions for the United States Army,” *Military Review* LVII, no. 3 (March 1977): 54–65.

³⁵ Capt Stephen W. Miller, “It’s Time to Mechanize Amphibious Forces,” *Marine Corps Gazette* 62, no. 6 (June 1978): 39.

tactics and a Marine response to those tactics in the offense and in the defense. Miller's articles were a virtual distillation of *Patterns of Conflict*, as expressed for Marines fighting against a Warsaw Pact adversary:

Through the high tempo of operations, constant shifting of forces and fluid, flexible action by ground and air elements working in close harmony, the Soviet-styled enemy will rapidly lose control, cohesion and momentum. With a loss of higher direction and a seemingly unpredictable foe able to undermine any action, disorder and paralysis occurs leading to panic and a collapse of the Soviet opponent's capacity and will to resist. The friendly force must emphasize superior speed, mobility, and tactical unity.³⁶

After this virtual shot across the bow, Miller disappeared from the debate, presumably having left active duty.³⁷

While the debate over maneuver warfare raged through the pages of the *Marine Corps Gazette*, its adherents fought to implement the concept within the Marine Corps' training and education establishment. Rather than looking forward to the Soviet threat, the impetus for maneuver warfare advocates was their professional disillusionment after Vietnam. In 1979, Michael D. Wyly, a newly promoted lieutenant colonel coming off duty with the Fleet Marine Forces, reported to the Amphibious Warfare School (AWS) at Quantico as an instructor of tactics.³⁸ Wyly played a pivotal role in the advocacy of maneuver warfare, largely through his influence over captains attending AWS. Those captains often returned to the Fleet Marine Force after AWS and commanded companies and detachments of their own.

Wyly had commanded Company D, 1st Battalion, 5th Marine Regiment in Vietnam, and had turned around a casualty-ravaged unit that had called itself the "Dying Delta" into a lethal, cohesive unit that regained its effectiveness and morale. Wyly returned to the United States "still

³⁶ Miller, "Winning Through Maneuver: Part I - Countering the Offense," 36.

³⁷ Fideleon Damian, "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989" (Master's thesis, Manhattan: Kansas State University, 2008), 31. Damian's thesis is the definitive history of the intellectual discourse in the Marine Corps over maneuver warfare, and provides a detailed roadmap of the articles that ran in the *Marine Corps Gazette* and the *Proceedings* of the U.S. Naval Institute during that decade-long period.

³⁸ *Ibid.*, 84.

mad about Vietnam” and deeply dissatisfied with the way the institution prepared Marines for combat.³⁹ Wyly’s ire paralleled the frustrations of Army officers like Huba Wass de Czege and Richard Hart Sinnreich, who also wanted to rescue their service from its Vietnam nadir.

Wyly was at Quantico largely through the effort of Major General Bernard Trainor, who was the director of the Marine Corps Development and Education Command at Quantico, and was one of Wyly’s mentors. Trainor encouraged Lind to visit AWS, since it was a formative school for young officers coming off their first years after commissioning. The Marine captains who attended AWS typically went on to command companies after graduation, giving Wyly and Lind direct influence over the first-line combat leadership of the Marine Corps.

Wyly’s objections to the AWS curriculum centered on the course’s methodical, heavily scripted school of ground combat tactics. Wyly did not have a better alternative at first, but Lind provided one, borrowing heavily from Boyd and the writings of B.H. Liddell Hart. By the end of the year, Lind had a small group who periodically met to discuss tactics, and in particular, a school of maneuver that reflected not only Boyd’s thought, but also Liddell Hart’s writings and German experiences in the 20th century. There were few illusions about these meetings being career enhancing; the institutional culture of the Marine Corps was not receptive to the notion of a small group of iconoclasts at Quantico. It was no accident that the group’s internal moniker was “the Dirty Dozen.”⁴⁰ However, Trainor’s influence protected them from immediate reprisal.

Of the so-called Dirty Dozen, two names stand out. One was James N. Mattis, who later distinguished himself in combat commands in Operations DESERT STORM, ENDURING FREEDOM, and IRAQI FREEDOM. Mattis’s practice during his combat commands, especially during DESERT STORM, bears the imprint of his experience at Quantico; he went on to four-

³⁹ Wyly, interview, March 20, 2011. Coram, *Boyd*, 375.

⁴⁰ Wyly, interview, March 20, 2011. Damian, “The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989,” 35–36.

star rank and command of two unified combatant commands. The other figure is William Woods, who was one of Wyly's students at AWS. Woods went on to the 2d Marine Division (MARDIV) at Camp Lejeune, North Carolina. Woods, like many of Wyly's students, had received Boyd's *Patterns of Conflict* briefing and took its lessons with him to Camp Lejeune, where Gray was commanding the 2d MARDIV. Woods was one of the group of AWS graduates who, in Wyly's description, "ambushed" Gray with elements of the *Patterns of Conflict* briefing. Fortunately for Woods and his confederates, Gray had already seen *Patterns of Conflict* and was receptive to Woods' propositions.⁴¹ The result was the creation of the "Second Marine Division Maneuver Warfare Board" in 1981, under the direction of Woods and another captain, G. I. Wilson, both of whom were future contributors in the Marine Corps' institutional debate over maneuver warfare. Wyly's former students who went to the 1st MARDIV at Camp Pendleton, California followed suit with the "Junior Officers Tactical Symposium." By covering both the 1st and 2d MARDIVs, Wyly's graduates established a presence with most of the active Marine Corps force structure stationed in the continental United States.⁴²

The first significant overview of "maneuver warfare" as a concept appeared in Lind's "Defining Maneuver Warfare" in the March 1980 *Marine Corps Gazette*. Lind described maneuver warfare as a "style" of warfare, but posited it as an opposite to what he called a "firepower-attrition style." Lind went so far as to claim that "the Boyd Theory is the theory of maneuver warfare."⁴³ Wilson, Wyly, Lind, and Trainor followed with a collection of articles published collectively as "The Maneuver Warfare Concept" in April 1981, with Lind adding a

⁴¹ Wyly, interview, March 20, 2011.

⁴² Damian, "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989," 37. The majority of the active Marine Corps force structure resides either at Camp Lejeune or at Camp Pendleton, California, which has led to the expressions "East Coast Marine" and "West Coast Marine" respectively. The 3rd MARDIV is at Okinawa, but is manned at substantially reduced strength relative to its domestically-based counterparts.

⁴³ William S. Lind, "Defining Maneuver Warfare for the Marine Corps," *Marine Corps Gazette* 64, no. 3 (March 1980): 55-57.

discussion of tactics in a later article. Boyd's influence was pervasive throughout in Lind's usage of "surfaces and gaps," a phrase taken from *Patterns of Conflict*.⁴⁴ One aspect largely missing from the advocacy of maneuver warfare was its actual implementation, which Wilson addressed in his January 1982 article "Maneuver/Fluid Warfare: A Review of the Concept." Wilson gave practical advice to commanders on the combined arms application of maneuver warfare theory, further informed by his own experiences as a member of the Second Marine Division Maneuver Warfare Board.⁴⁵

Not all of the audience of the *Marine Corps Gazette* was receptive to the notion of maneuver warfare. For example, one of the criticisms leveled against the maneuver warfare advocates related to Lind's lack of military experience, as Major Christopher J. Gregor expressed in a January 1982 letter to the editor. Gregor's call for "fighting military leaders" overlooked serving Marines such as Wilson and Woods, let alone a Vietnam veteran with valor awards such as Wyly.⁴⁶ Lieutenant Colonel R. H. Voigt also advised caution in adopting maneuver warfare concepts, but did not offer much more beyond that.⁴⁷ Lieutenant Colonel J. P. Glasgow, another dissenter, posed some pointed questions about the mechanics of implementation, rather than the method of thought that the maneuver warfare advocates promoted.⁴⁸

The basis of the dissenters to the maneuver warfare advocates was a weak grounding in practice. However, such an objection was virtually inevitable when the maneuver warfare advocates sought to create a sea change in how the Marine Corps approached not only combat

⁴⁴ Capt Gary I. Wilson et al., "Maneuver Warfare Concept," *Marine Corps Gazette* 65, no. 4 (April 1981): 49–54. William S. Lind, "Tactics in Maneuver Warfare," *Marine Corps Gazette* 65, no. 9 (September 1981): 36–39. Boyd, "Patterns of Conflict," 86–87.

⁴⁵ Capt Gary I. Wilson, "Maneuver/Fluid Warfare: A review of the Concepts," *Marine Corps Gazette* 66, no. 1 (January 1982): 54–61.

⁴⁶ Maj C.J. Gregor, "Maneuver Warfare" letter to the editor, *Marine Corps Gazette* 66, no. 1 (1982): 16. Wyly's combat awards included the Purple Heart and the Navy Commendation Medal with Combat "V."

⁴⁷ LtCol R. H. Voigt, "Comments on Maneuver Warfare," *Marine Corps Gazette* 66, no. 3 (March 1982): 20.

⁴⁸ LtCol J. P. Glasgow, Jr., letter to the editor, *Marine Corps Gazette* 66, no. 4 (1982): 17.

operations, but also the culture and underlying philosophy for those combat operations. Such an approach, which explicitly eschewed specific procedures for “what to do” and focused on “how to think,” only fed the concerns of the dissenters. Such a dispute was almost inevitable given the basic differences between the maneuver warfare advocates and their detractors sought to achieve.

The maneuver warfare advocates addressed this lack of practical advice after a lag of several years. The advocates changed their areas of emphasis, from the theoretical to concrete recommendations about how to organize and employ the forces in accordance with maneuver warfare concepts. Colonel (Retired) Bruce G. Brown’s two-part article titled “Maneuver Warfare Roadmap,” published in April and May 1982, was a call to changes in the force structure. Lind’s subsequent contribution to the debate was “Preparing for Maneuver Warfare,” in the June 1984 *Marine Corps Gazette*. Lind suggested major changes in how the Marine Corps should educate its personnel, as well as how to better select officer and enlisted Marines for promotion and command positions. Most of these explorations of maneuver warfare were tactical in scope.⁴⁹ Although Lind briefly mentioned operational art in “Preparing for Maneuver Warfare,” operational art was an afterthought until the tactics that surrounded any debate on maneuver warfare resolved.

The absence of any substantive reaction to the mention of operational art was not surprising; any discussion of tactics was necessarily closer to the personal experiences and immediate interests of the Marines engaging in the discourse. However, the reaction to “Preparing for Maneuver Warfare” was surprisingly muted compared to Gregor and Glasgow’s

⁴⁹ Col Bruce G. Brown, “Maneuver Warfare Roadmap: Part I, Trends and Implications,” *Marine Corps Gazette* 66, no. 4 (April 1982): 42–47. Col Bruce G. Brown, “Maneuver Warfare Roadmap: Part II, Concepts of Employment & Tactical Applications,” *Marine Corps Gazette* 66, no. 5 (May 1982): 80–85. William S. Lind, “Preparing for Maneuver Warfare,” *Marine Corps Gazette* 68, no. 6 (June 1984): 47–55. C.J. Gregor, letter to the editor, *Marine Corps Gazette* 68, no. 9 (1984): 18. S.G. Duke, letter to the editor, *Marine Corps Gazette* 68, no. 9 (1984): 18.

criticisms to previous articles. The reaction was to some extent a tacit acknowledgment of maneuver warfare as an accepted element of the Marine Corps' professional discourse, if not its underlying philosophy, by the mid-1980s. It also could have been the critics' unwillingness to compete with Lind's prolific output.

Lind's most lasting contribution to the literature on maneuver appeared in 1985 as a small book appropriately titled *Maneuver Warfare Handbook*. Published through the assistance of the Marine Corps Association, Lind's text was too short to warrant publication on its own. To enable its publication, Lind turned to Wyly, then the commander of the Navy Reserve Officer Training Corps detachment at the University of Kansas, who included his lectures from a course he taught at AWS called "Fundamentals of Tactics."⁵⁰ The lectures themselves were a precursor to the *Marine Corps Gazette's* inclusion of tactical decision games, which appeared in much the same format some five years later. Ironically, for a book that espoused a philosophy without set principles, *Maneuver Warfare Handbook* was an attempt to codify some of the observations Lind had gained from studying some of the Germans' experiences in World Wars I and II, colored by the influence of Liddell Hart and J.F.C. Fuller. The book had, ironically, a distinctly prescriptive tone in places. Bruce Gudmundsson, an eyewitness and a participant in some of the debate over maneuver warfare, described *Maneuver Warfare Handbook* as an extreme example of the advocacy of suppression and dislocation at the expense of destruction.⁵¹

While the advocates of maneuver warfare were certainly prolific during the 1980s, they did not represent a monolithic intellectual body. Lind represented the far extreme of the

⁵⁰ William S. Lind and Michael D. Wyly, *Maneuver Warfare Handbook* (Boulder, Colo.: Westview Press, 1985), 71. Wyly, interview, March 20, 2011. John F. Schmitt, interview by author, April 26, 2011, notes in author's possession.

⁵¹ Lind and Wyly, *Maneuver Warfare Handbook*, 9–34. Bruce I. Gudmundsson, interview by author, March 15, 2011, notes in author's possession. Gudmundsson, chair of military case studies at the Marine Corps University, describes *Maneuver Warfare Handbook* as an example of "Percinisme," for Alexandre Percin, who believed that the French 75mm pack howitzer was the only artillery piece required during World War I because of its portability, and that its agility could substitute completely for the reduced lethality of a smaller artillery round.

maneuver warfare advocates. His emphasis on lightness and mobility went far beyond that of the other maneuver warfare advocates, arguing by 1988 that the Marine Corps divest armored personnel carriers and tanks in favor of a light infantry force of trucks, light motorized armored vehicles, and motorcycles.⁵² Lind's naturally polemic tone made him the most obvious target for maneuver warfare's detractors, but he was not the only voice. Wyly had argued early for a complementary relationship between maneuver and firepower.⁵³ Even Gary W. Anderson's dissenting argument against maneuver warfare posited that maneuver and firepower could not be mutually exclusive.⁵⁴

By the mid-to-late 1980s, most of the debate over maneuver warfare had died down. One reason was that Lind and others had been so strident in their advocacy that audiences were desensitized to what in 1979 would have been more provocative assertions. The other reason, as Robert Coram asserts in a biography of Boyd, was that General Paul X. Kelley, Commandant from 1983-1987, was derisive if not actively hostile to the notion of maneuver warfare. By this time, Trainor had retired, having culminated his career as the Deputy Chief of Staff, Plans, Policies, and Operations at Headquarters, Marine Corps, leaving Wyly without a senior protector.⁵⁵

Kevin R. Clover analyzed the results in a February 1988 *Marine Corps Gazette* article. Surveying the debate, Clover observed that a maneuver warfare culture had emerged in the 2d MARDIV, certainly a direct result of Gray's advocacy of maneuver warfare in 1980 as a division

⁵² William S. Lind, "Misconceptions of Maneuver Warfare," *Marine Corps Gazette* 72, no. 1 (1988): 16; William S. Lind, "The Next Agenda: Military Reform, Part I," *Marine Corps Gazette* 72, no. 6 (June 1988): 49-50.

⁵³ LtCol Michael D. Wyly, "War Without Firepower?," *Marine Corps Gazette* 67, no. 3 (March 1983): 17-18.

⁵⁴ Maj Gary W. Anderson, "Maneuver, Attrition, or the Tactics of Mistake?," *Marine Corps Gazette* 69, no. 9 (September 1985): 73-77.

⁵⁵ Headquarters, U. S. Marine Corps, "Who's Who in Marine Corps History: Lieutenant General Bernard E. Trainor, USMC (Retired)," 2010, http://www.tecom.usmc.mil/HD/Whos_Who/Trainor_BE.htm (accessed April 16, 2011). Wyly, interview, March 20, 2011.

commander. Clover noted several institutional trends, the most significant of which was that many Marines did not have a consistent understanding of maneuver warfare. At the time, while some concept documents and working papers incorporated maneuver warfare thought, no corporate Marine Corps position existed on maneuver warfare and its philosophies.⁵⁶ Gray, however, was no longer just the commanding general of a Marine division; by the time Clover's article published, Gray was Commandant of the Marine Corps and thus the senior Marine officer on active duty. Gray quickly dispelled any ambiguity about the legitimacy of maneuver warfare as official writ within the Marine Corps.

Maneuver Warfare as Official Writ

Gray's path to the Commandant's office was by no means preordained. Kelley, his predecessor, saw considerable controversy, starting with the official inquiries after the destruction of the U.S. Embassy in Beirut, Lebanon in 1983, which marked the single greatest loss of life for the Marine Corps outside a war. Kelley also dealt with the fallout from Clayton Lonetree, a Marine Security Guard at the U.S. Embassy in Moscow who was convicted on 12 counts of espionage after providing classified information to the KGB. Kelley's bitter opposition to the Goldwater-Nichols Act resulted in additional friction for the Marine Corps with consequent effects for its budgetary programs.⁵⁷ Kelley concluded his term as Commandant a month after John Lehman, Secretary of the Navy, concluded his own term. Thus, James H. Webb, the incoming Secretary, appointed Kelley's replacement. Of the officers under consideration, Gray was a dark horse candidate. Gray had submitted his retirement paperwork

⁵⁶ Capt Kevin R. Clover, "Maneuver Warfare: Where Are We Now?," *Marine Corps Gazette* 72, no. 2 (February 1988): 54, 58.

⁵⁷ James R. Locher, *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon* (College Station: Texas A & M University Press, 2002), 383–385.

but found out, somewhat unexpectedly and only two weeks prior to assuming the office, that he was to become the Commandant on July 1, 1987.⁵⁸

After completing his tour at the University of Kansas, Wyly went to Okinawa for a year, and then received orders back to Quantico to serve at the Marine Corps Combat Developments Center (MCCDC). The senior leadership at MCCDC was not receptive to Wyly's advocacy of maneuver warfare and sought to marginalize him. Gray had personally phoned Wyly at MCCDC, offering an open door, but Wyly had few opportunities to employ that option. In Wyly's recollections, maneuver warfare's unpopularity with senior leaders (Gray being a notable exception) was partly due to their having grown up in a much more methodical, deliberate operational tradition.⁵⁹ In the meantime, Lind had made himself *persona non grata* at Quantico by openly assessing which generals he considered trustworthy for determining the future direction of the Marine Corps. Lind's association with Wyly made the latter far too controversial as a command exponent of maneuver warfare.⁶⁰ One of Wyly's assistants at MCCDC assumed that mantle instead.

John F. Schmitt was a relatively junior Marine captain assigned to MCCDC as a doctrine writer when Gray, having read the Army's Field Manual (FM) 100-5, *Operations*, and its central concept of AirLand Battle, sought to create a similarly transformational document for the Marine Corps. Gray liked FM 100-5, but wanted something more philosophical than the prescriptive tone of FM 100-5. Gray directed Schmitt, who served in the 2d MARDIV as a lieutenant under Gray, to write a completely new manual.⁶¹ Schmitt had authored Operational Handbook (OH) 6-

⁵⁸ Edgar F. Puryear, *Marine Corps Generalship* (Washington, D.C.: National Defense University Press, 2009), 44–47. Wyly, Webb's former company commander from the 5th Marines, had mentioned Gray's name to Webb during the latter's term as Assistant Secretary of Defense for Reserve Affairs; Gray posits Secretary of Defense Caspar Weinberger as the key figure in his nomination.

⁵⁹ Wyly, interview, March 20, 2011.

⁶⁰ Puryear, *Marine Corps Generalship*, 53.

⁶¹ Van Riper, interview, March 28, 2011.

1, *Ground Operations*, an interim update to the basic tactical ground combat doctrine to the Marine Corps until the release of a Fleet Marine Force Manual (FMFM) to cover the topic. His inclusion of some elements of maneuver warfare precepts marked the first time that maneuver warfare had appeared in an officially-sanctioned Marine Corps doctrinal publication.⁶²

In spite of the lively debate in the *Marine Corps Gazette*, the Marine Corps did not have a corporate definition of maneuver warfare until Schmitt put it into writing. As defined in the new manual, maneuver warfare was “a warfighting philosophy that seeks to shatter the enemy’s cohesion through a series of rapid, violent, and unexpected actions which create a turbulent and rapidly deteriorating situation with which he cannot cope.”⁶³ Such a definition owed its origins unmistakably to Boyd.

Unlike other doctrinal manuals, Schmitt was the sole author of the document and wrote the document with no subsequent guidance from Gray.⁶⁴ Colonel Paul K. Van Riper, then serving as the director of the Marine Corps Command and Staff College, was irate that Gray had bypassed him, but noted in retrospect that “the most successful manuals in the service were written by one or two authors under a senior leader.” Gray would never have been able to get the new manual published had it gone through MCCDC’s formal processes. Maneuver warfare,

⁶² Schmitt had attempted to include them from the outset, but his senior officers at MCCDC blocked its inclusion until Gray’s selection as Commandant was made. Presumably, Schmitt’s supervisors recognized that publishing a manual completely devoid of any maneuver warfare content might be hazardous to their careers. The result was a manual that included some parts of maneuver warfare, but in a very disjoint fashion. OH 6-1 demonstrates what happens when a significant philosophical change occurs just short of final publication, which Wyly identified in his review of OH 6-1. Col Michael D. Wyly, “Operational Handbook 6-1, Ground Combat Operations,” *Marine Corps Gazette* 72, no. 7 (1988): 30–31. Damian, “The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989,” 103–104.

⁶³ Headquarters, U. S. Marine Corps, *Fleet Marine Force Manual 1, Warfighting* (Washington, D.C.: G.P.O., 1989), 59.

⁶⁴ Van Riper, interview, March 28, 2011. Gudmundsson, interview, March 15, 2011. Damian, “The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989,” 102–104.

while at least a household word in the Marine Corps, was not yet respectable enough to be the intellectual foundation that Gray envisaged.⁶⁵

Gray's own embrace of maneuver warfare as a philosophy showed in his loose practice of direct supervision as Schmitt wrote the manual, which appropriately was called *Warfighting*, consistent with Gray's belief that it was to be the basis of how the Marine Corps should approach warfare. Gray's first meeting with Schmitt, who had served under Gray at 2d MARDIV, was unorthodox. Schmitt's original outline started with the Principles of War developed by J.F.C. Fuller in 1916. Gray, after receiving the outline, asked rhetorically what principles of war were involved. Schmitt's attempts to explain that the principles of war were the ones that had appeared in most U.S. military doctrine manuals for decades led to Gray's asking what was so sacred about those principles. At that point, Schmitt understood unequivocally that he had a blank slate for development.⁶⁶

Gray conducted only one in-progress review of *Warfighting* during its development, and gave no specific instructions regarding how to write the manual, or even its phrasing or terminology. That represented a considerable act of trust, especially in a junior captain whose manual was intended to shape the future of the entire Marine Corps. At that meeting, midway through the writing of *Warfighting*, Gray told more "sea story" parables as illustrative examples of essential truths that were worthy of inclusion in the manual, but communicated no direct guidance in writing the manual itself. The next meeting between Schmitt and Gray occurred when Schmitt delivered the draft to Gray in person at the Marine Barracks in Washington, D.C.

⁶⁵ Van Riper, interview, March 28, 2011.

⁶⁶ Schmitt, interview, April 26, 2011.

Gray read the proofs and approved the document without change for promulgation as the Marine Corps' top-level doctrine manual.⁶⁷

Schmitt had produced a syncretism of many different sources. He drew from traditional military theorists such as Vegetius, Sun Tzu, Antoine-Henry Jomini, and Carl von Clausewitz. However, he also drew heavily from Boyd's *Discourse on Winning and Losing*, having sat through one of Boyd's marathon briefings of *Patterns of Conflict* and *Organic Design for Command and Control*. While Van Riper, Wyly, and Lind all reviewed Schmitt's manuscript, Gray's oversight ensured that Schmitt retained editorial control over the document. In effect, Schmitt had no intermediate supervisors between him and the Commandant. Colonel Robert Mastrion, Schmitt's nominal immediate supervisor, protected Schmitt from other taskings at MCCDC to enable Schmitt to write *Warfighting* unmolested. While *Warfighting* was originally a lineal replacement of FMFM 2, a manual specifically covering the Marine Air Ground Task Force (MAGTF), Gray's belief in its importance as philosophy beyond the purview of the MAGTF resulted in the manual being designated FMFM 1 upon its release in March 1989.⁶⁸

Maneuver Warfare and Operational Art

The discussions of maneuver warfare in the pages of the *Marine Corps Gazette* had comparatively little discussion of campaigns, let alone strategy. The nature of the articles about maneuver warfare, as well as the company grade officers who were the first apostles of the discipline, gave the literature an overwhelmingly tactical character, since the literature and its practice focused on how better to fight at the small unit level. Such a focus was perfectly

⁶⁷ Ibid. Damian, "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989," 104.

⁶⁸ Schmitt, interview, April 26, 2011. Damian, "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989," 104. The MAGTF, a combined arms formation that always includes air, ground, and logistics elements, has been Marine Corps' standard task organization for combat since 1954.

understandable given that the most strident advocates of maneuver warfare started at AWS, not at the Command and Staff College. The advocates of maneuver warfare were also the ones that advocated beyond tactics for operational art.

Early explorations of operational art discussed it in the context of maneuver warfare. The first few incidences of “operational art” in the *Marine Corps Gazette* were references to Y. Ve. Savkin’s *The Basic Principles of Operational Art and Tactics*, but discussed only tactics.⁶⁹ The first mention of the “operational art of war” appeared in Edward Luttwak’s “Refocusing the Military Profession,” a June 1981 article that made references to strategists who could visualize war beyond tactical engagements.⁷⁰ The first true mention of operational art appeared in Lind’s December 1981 article “A Critique of ECP 9-5, 1981 Edition,” which described it as “the use of tactical engagements to strike directly at the enemy’s strategic center of gravity” with operations that “focus beyond the battle.”⁷¹

In the meantime, the success of the 1982 edition of FM 100-5 in introducing the operational level of war to the U.S. Army resulted in a formal recognition of operational art as a discipline in the 1986 edition. The discourse on maneuver warfare started to encompass operational art by the late 1980s, concurrent to the reputation bestowed upon graduates of the U.S. Army’s School of Advanced Military Studies (SAMS) and their education in operational art.⁷²

⁶⁹ William S. Lind, “Marines Don’t Write About Warfare,” *Marine Corps Gazette* 62, no. 2 (February 1978): 14; Francis M. Casey, “Suggestions For A Reading List,” *Marine Corps Gazette* 62, no. 6 (June 1978): 20–23; Capt Thomas A. Reavis, “Improving Our Air Defenses: The Mi-14 Hind Threat,” *Marine Corps Gazette* 65, no. 5 (May 1981): 64–65.

⁷⁰ Edward N. Luttwak, “Refocusing the Military Profession,” *Marine Corps Gazette* 65, no. 6 (June 1981): 64.

⁷¹ William S. Lind, “A Critique of ECP 9-5, 1981 Edition,” *Marine Corps Gazette* 65, no. 12 (December 1981): 46.

⁷² Kevin C. M. Benson, “Educating the Army’s Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994” (PhD dissertation, Lawrence: University of Kansas, 2010), 286.

Colonel Roger M. Jaroch, in a July 1989 *Marine Corps Gazette* article titled “MAGTFs and the Operational Level of War,” posited that the Marines had largely ignored the operational level of war because the institution had focused on contingency and limited duration missions.⁷³ Such a focus was entirely consistent with the Haynes Report and its associated literature, as well as previous institutional trends to differentiate the Marine Corps from the Army. Lind and Wyly’s written discourse in the *Marine Corps Gazette* shifted to operational art with Lind’s April 1988 article “The Operational Art,” followed by some of Wyly’s articles on strategy and military history that reflected a shift away from Wyly’s earlier writings on tactics.⁷⁴

The guidance in FMFM 1 on maneuver warfare did not include much guidance, whether prescriptive or not, on the conduct of Marine operations beyond the tactical level. In all fairness, *Warfighting*, as a philosophical document about armed conflict, was never intended to do so. A gap existed between the tactical level that was familiar to Marines and the context in which those MAGTFs might be employed. In January 1990, a new manual numbered FMFM 1-1 and titled *Campaigning*, specifically addressed that gap. Schmitt authored that manual as well.

Campaigning was Gray’s attempt to capture some of the Army’s developments in operational art for the Marine Corps. It was an outgrowth of the discussions Schmitt and others had with Colonel Leonard D. Holder and others at SAMS. It also reflected the extensive discourse that had appeared after the mid-1980s on operational art in *Military Review* and in *Parameters*, journal of the U.S. Army War College, which predated similar articles in the *Marine Corps Gazette* by several years. In Schmitt’s assessment, the Marine Corps tended to follow the

⁷³ Col Roger M. Jaroch, “MAGTFs and the Operational Level of War,” *Marine Corps Gazette* 73, no. 7 (July 1989): 61.

⁷⁴ Lind, “The Next Agenda: Military Reform, Part I”; William S. Lind, “The Next Agenda: Military Reform, Part II,” *Marine Corps Gazette* 72, no. 7 (1988): 50–54; Col Michael D. Wyly, “Educating for War,” *Marine Corps Gazette* 72, no. 4 (April 1988): 28–31; Col Michael D. Wyly, “Ideas for Changing Doctrine,” *Marine Corps Gazette* 72, no. 8 (1988): 41–43; Col Michael D. Wyly, “Why All Americans Need To Think More About War,” *Marine Corps Gazette* 72, no. 9 (1988): 26–27.

Army's lead on operational art. Operational art was traditionally an Army activity since the Army's primary role was to conduct decisive land campaigning, rather than the Marine Corps' traditional role of contingency response.⁷⁵

The intended audience for *Campaigning* included planners within MAGTFs as well as those Marines serving at a unified combatant command. However, one of the criticisms of the manual hinged on a discussion of roles and missions, namely that campaigning was not necessarily appropriate to the Marine Corps' traditional roles. Most of the examples in FMFM 1-1 represented large unit land campaigning, a mission the Marine Corps explicitly attempted to avoid, as evidenced by the MAPSLO and Haynes studies.⁷⁶ Similarly, the 1987 *Amphibious Warfare Strategy*, a subset of the Navy's *Maritime Strategy* intended for use against the Soviet Union, envisaged a possible role for Marine amphibious forces either in regaining lost territory or even threatening Soviet territory "in a series of war termination actions." However, those Marine amphibious forces were not intended to be large units campaigning against the Soviet Army.⁷⁷

Nonetheless, FMFM 1-1 provided a succinct statement of the relationship that a campaign had with a military commander's strategic aims. Holder, after writing portions on operational art for the 1982 FM 100-5, had been dissatisfied with the association of the operational level of war with field armies and army groups, explicitly removing those

⁷⁵Schmitt, interview, April 26, 2011.

⁷⁶ Ibid. Headquarters, U. S. Marine Corps, *Fleet Marine Force Manual 1-1, Campaigning* (Washington: G.P.O., 1990), 28–30. The case studies listed in chapters 2 and 3 of *Campaigning* included Sherman's March to the Sea, the Wehrmacht's attack into Poland in 1939, and Allenby's maneuver in Syria against the Ottoman Empire. Maj Patrick E. Donahue, "Does FMFM 1-1 Provide Adequate Guidance to Understand Campaign Planning?" (Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1992), 14.

⁷⁷ Headquarters, U. S. Marine Corps, "Amphibious Warfare Strategy," presentation slides (Washington, D.C., 1987), 28, 30, 46–47, Box 54, Group 899, Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center. The *Amphibious Warfare Strategy* and FMFM 1-1 were written in isolation from each other. John F. Schmitt, e-mail to author, January 31, 2012.

associations in the 1986 revision. Schmitt's discussions with Holder were apparent in the part of FMFM 1-1 that stated "it is erroneous to define the operational level according to echelon of command."⁷⁸

For the Marine Corps and the MAGTF structure upon which its entire force structure was predicated, that distinction was of paramount importance. The size of a MAGTF could range from a Marine Expeditionary Unit (MEU) commanded by a colonel, or as large as a Marine Expeditionary Force, commanded by a lieutenant general. The nature of the employment of that MAGTF was more important than its size. That distinction was particularly true for a MEU, which could be the only force available with a ground combat capability at the outset of a conflict, as was the case in Lebanon in 1983.⁷⁹ Therefore, even a MEU could face potential responsibilities for attainment of the strategic objectives that represented termination criteria for a conflict. However, the mechanisms to train the members of a MAGTF in the practice of operational art simply did not exist. Unlike the Army's Battle Command Training Program, the Marine Corps had no MAGTF Staff Training Program and none would exist until 1993.⁸⁰ Maneuver warfare remained the sole philosophical basis for Marine Corps doctrine at the end of the 1980s.

Institutionalizing Maneuver Warfare in the Marine Corps

The adoption of maneuver warfare as the basic philosophy of the United States Marine Corps started as an insurgency of sorts by its advocates. It ended as a *fait accompli* when Gray

⁷⁸ Headquarters, U. S. Marine Corps, *Fleet Marine Force Manual 1-1, Campaigning*, 12.

⁷⁹ Between 1965-1988, the Marine Corps called its MAGTFs "Amphibious" rather than "Expeditionary," originally a nod to South Vietnamese sensitivities. Thus, the MAGTF deployed for the peace enforcement operation in Lebanon in 1983 was the 24th Marine *Amphibious* Unit. ALMAR (All Marine Activities) Message 023/88 directed the change in title back to "Expeditionary." BGen Edwin H. Simmons, USMC(Ret), "Memorandum from the Director: 'Amphibious' Becomes 'Expeditionary,'" *Fortitudine* XVIII, no. 1 (Spring-Summer 1988): 3.

⁸⁰ U.S. Marine Corps, Marine Air-Ground Task Force Staff Training Program, "MSTP Command Brief v.48," presentation slides, January 1, 2011, 2.

approved FMFM 1. However, Gray's imposition of maneuver warfare did not mean universal acceptance within the force.

The influence of the maneuver warfare advocates was a confluence of otherwise disparate factors. Wyly's tour at AWS and his interactions with Boyd proved to be a critical mass in spreading maneuver warfare as a philosophy. By providing a seed to new AWS graduates, Wyly, Woods, Wilson, and their associates mounted an insurgency of sorts within the Marine Corps. Lind, while not a Marine, served to connect otherwise disparate individuals and groups.⁸¹ This distributed advocacy was vital to the eventual success of that insurgency, as the early apostles of maneuver warfare moved on as their assignments and careers took them elsewhere. Gray's embracing maneuver warfare was a tremendous benefit to the maneuver warfare advocates, although he was a dark horse candidate to replace Kelley as Commandant. Gray's accession to the Commandant's office gave the maneuver warfare advocates the most powerful sponsor they would ever have.⁸²

In spite of their institutional successes, Gudmundsson's assessment that "most of the maneuverists were self-conscious kamikazes" is borne out when examining the career paths of the officers who espoused that philosophy. Boyd, while successful enough to gain promotion to colonel, was so controversial that he retired at that rank. Schmitt left active Marine service as a captain, after writing FMFM 1 and FMFM 1-1. While in the Marine Corps Reserve, Schmitt wrote Marine Corps Doctrine Publication (MCDP) 1 (the successor to FMFM 1), MCDP 3 *Expeditionary Operations*, MCDP 5 *Planning*, and MCDP 6 *Command and Control*.⁸³ Wilson

⁸¹ Gudmundsson, interview, March 15, 2011.

⁸² Puryear, *Marine Corps Generalship*, 2-7. Puryear's first chapter is a retrospective by six separate Commandants on their role and the tremendous influence he holds over the Marine Corps relative to his counterparts in the other services. To quote Krulak, "if the Commandant decides to do something, it gets done."

⁸³ John F. Schmitt, *Defense Adaptive Red Team Working Paper #02-4: A Practical Guide for Developing and Writing Military Concepts* (McLean, Va.: Hicks and Associates, 2002), ii; Gudmundsson, interview, March 15, 2011.

retired as a colonel. Trainor, a lieutenant general, and Wyly, who reached the rank of colonel, both retired earlier than they had expected.⁸⁴ Gray and Van Riper represent the success stories, Van Riper most so in retirement in the U.S. Joint Forces Command MILLENNIUM CHALLENGE 2002 exercise as the opposing force commander. Van Riper's forces eluded detection by electronic surveillance and destroyed most of the naval surface combatant force in the first day of the exercise. Van Riper resigned from the exercise in protest when the exercise directors reset the scenario to validate military concept papers.⁸⁵

The *Marine Corps Gazette* also illustrates the importance of an independent forum. Without Greenwood's editorial control in allowing Wyly, Lind, Wilson and others to print their proposals for maneuver warfare (in addition to the responses of their detractors), the notion of maneuver warfare would not have gained sufficient traction to reach across the entire Marine Corps. While Gray's own advocacy was certainly influential for his own Marines in the 2d MARDIV, without the wider discourse in the *Marine Corps Gazette*, FMFM 1 would not have seen the light of day. Even Gray demurred from directing the initiation of work on FMFM 1 until two years after he had assumed the office of the Commandant.

At the same time, there was some cross-pollination between maneuver warfare and the Army's doctrine on operational art, as evidenced in the 1982 and 1986 editions of *AirLand Battle* as published in FM 100-5. *AirLand Battle*'s fundamentals of combat power entailed the coordinated employment of maneuver, firepower, protection, and leadership. It also emphasized initiative, agility, speed, and shock action (and in one significant break from maneuver warfare theory, synchronization). Much like maneuver warfare, *AirLand Battle* and operational art

⁸⁴ Wyly, interview, March 20, 2011; Van Riper, interview, March 28, 2011.

⁸⁵ Kernan Chaisson, "Rumsfeld rejects alleged exercise rigging," *Journal of Electronic Defense* 25, no. 10 (2002): 19–20. The author was an assistant operations officer in for the Army aviation brigade that contributed forces to the exercise. Van Riper's success and later resignation was the focal point of much discussion immediately afterwards.

doctrine acted within the moral domain of warfare, necessarily more so than the physical domain.⁸⁶ Wyly, while commanding the Naval ROTC detachment at the University of Kansas, was a periodic guest lecturer on amphibious operations and maneuver warfare at SAMS, primarily at the behest of Wass de Czege, SAMS' founder.⁸⁷ While the Army and Marine Corps did not directly coordinate on each other's capstone doctrine, it was no accident that Gray sought to capture what he saw as valuable concepts in the 1986 FM 100-5 for the Marine Corps when he directed Schmitt to write *Warfighting*. Schmitt himself saw maneuver warfare and AirLand Battle as first or second cousins; he felt that the Marine Corps was getting more from AirLand Battle than the converse.⁸⁸

Unlike operational art, maneuver warfare was a school of thought, rather than a discipline between strategy and tactics. The *Campaigning* manual had its name for very specific reason. However, as a unilateral Marine Corps publication, *Campaigning* could never be joint doctrine, a victim of the same problem that Sinnreich and the authors of the 1986 FM 100-5 had faced. What joint doctrine existed in the 1986 Joint Chiefs of Staff Publication 0-2, *Unified Action Armed Forces*, was so watered down as to be worthless for campaign planning.⁸⁹

At the same time, there was no introduction to strategy other than through the theory readings that underpinned the American military's practice of strategy, and that what little existed for most Marine officers was but a small portion of the Marine Corps Command and Staff College curriculum.⁹⁰ The only addition occurred on August 1, 1990, when Gray directed the establishment of an Art of War Studies program, which became the Marine Corps War

⁸⁶ Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1986), 11–26.

⁸⁷ Damian, "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989," 81–82.

⁸⁸ Schmitt, interview, April 26, 2011; Terriff, "'Innovate or Die': Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps," 500.

⁸⁹ Chapter 4 describes the shortcomings of the 1986 edition of JCS Pub 0-2.

⁹⁰ Donald F. Bittner, *Curriculum Evolution: Marine Corps Command and Staff College, 1920-1988* (Washington, D.C.: Headquarters, U.S. Marine Corps, History and Museums Division, 1988), 65–66.

College in 1991.⁹¹ The size of the Marine Corps, as well as the contingency response and amphibious warfare missions, steered the practice of campaigning itself away from the types of operations that entailed conflict termination. While the first Marines entered the Army's SAMS in 1988, the foundations for the practice of operational art in the Marine Corps were unrealized visions at the end of the Cold War.⁹²

Maneuver warfare could inform operational art as a way to think but was not itself a school of operational warfare. It had application far beyond purely the operational level of war; a skilled practitioner of maneuver warfare principles could possibly apply its intellectual tenets at the tactical or strategic level, although Jeffrey Record, one of the early reformers, has remarked that that was not the case.⁹³ However, the Marine Corps' practice of maneuver warfare was fundamentally a way of thinking about tactics. It was as much a product of the echelons at which the Marine Corps fought as well as its heavy cultural bias towards the tactical level. Those biases mirrored the Army's own cultural and institutional biases toward the tactical level, but were magnified by the character of the roles and missions the Marine Corps usually conducted.

In an article in the January 2012 *Marine Corps Gazette*, Francis G. Hoffman, a longtime contributor to the journal, noted that "of all the Services, the Marines emphasize the human dimension and art of war over science...their understanding of war stresses the fog, friction, and uncertainty inherent in human conflict." Such an assessment was certainly in line with the

⁹¹ U.S. Marine Corps, Marine Corps University, "History of the Marine Corps War College," *Marine Corps War College*, n.d., <http://www.mcu.usmc.mil/War%20College%20Documents/History.ppt> (accessed February 4, 2012).

⁹² Richard J. Macak, Jr. and Joseph E. Noble, "The U.S. Army's School of Advanced Military Studies: A Marine Overview and Perspective," *Marine Corps Gazette* 73, no. 7 (1989): 66-70.

⁹³ Jeffrey Record, *Beyond Military Reform: American Defense Dilemmas* (Washington, D.C.: Pergamon-Brassey's, 1988), 7-9.

underlying philosophy of maneuver warfare and its interactions in the moral domain of war.⁹⁴ Boyd had often preached “people, ideas, hardware - in that order.”⁹⁵

Such an approach stands out in stark contrast to that of Boyd’s service, the U.S. Air Force. While the Marine Corps had seen repeated fights for its survival, the Air Force had staked its existence on the employment of air power as a decisive and independent instrument of warfare.⁹⁶ That ethos bred a culture of centralized planning and decentralized execution, with strategic attack as the decisive arm of air power, rather than the use of tactical aviation to support ground maneuver forces that the Marine Corps and the Army desired. The U.S. Air Force’s perspective, centered on the capabilities of the air arm, led to a completely different view of translating strategy into operational direction for execution by tactical forces.

⁹⁴ F. G. Hoffman, “The Marine ‘Mask of War’,” *Marine Corps Gazette* 96, no. 1 (January 2012): 65–66.

⁹⁵ Coram, *Boyd*, 354.

⁹⁶ Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore: Johns Hopkins University Press, 1989), 28–29.

Chapter 6

Operational Art and the United States Air Force after Vietnam

There appears to be some truth, though, in the comment that everything written about operational warfare seems to be directed at the ground-force commander... The point is not that the ground forces seem to have a lock on the subject but that the Air Force has an equally vital interest in the subject and should be getting its own intellectual act together. Why we seem reluctant to do so is unclear. It's not for lack of opportunity or example. Several of the authors mentioned above wrote almost entirely on the subject of air power. And the Airpower Journal, for example, "focus[es] on the operational level of war." So how do we go about training ourselves to think at this war-winning, operational level? And what, or where, is the operational level? Who conducts it? Why? When? How? And what the hell is this other thing we hear about--OpArt?

Colonel Wayne A. Possehl, U.S. Air Force
Department of Professional Development, Armed Forces Staff College¹

The path by which the U.S. Air Force approached operational art after Vietnam was very different from those of the Soviet Army, the U.S. Army, and the U.S. Marine Corps. Certainly, some differences were inherent to the differences between the air and land domains. The body of air power theory was another factor, particularly given its short developmental period relative to more general theories of warfare. In the absence of a unified theory of air power, significant divides within the Air Force became apparent even in its infancy. As a result, the Air Force paid comparatively little attention to the operational employment of air power, let alone operational art. While the Air Force's Cold War role in nuclear deterrence had focused some attention to strategy, the overwhelming focus of the Air Force was on tactics, techniques, and procedures, leaving a yawning theoretical void. The one work that actually addressed both the theory and practice of the operational employment of air power did not appear until almost the end of the Cold War. That work coincided with a general introduction of operational art as a term within

¹ Col Wayne A. Possehl, "To Fly and Fight at the Operational Level," *Airpower Journal* 2, no. 4 (Winter 1988): 22.

the Air Force, as well as some explorations of what that term meant in the context of air power theory.

The State of Air Power Theory after Vietnam

The “proper” employment of air power has often been a point of contention, not only among land power and air power advocates, but also within air power circles itself. To a degree, that controversy owes to the absence of a unified theory of air power. The most authoritative statement on that absence appeared in Harold R. Winton’s “A Black Hole in the Wild Blue Yonder,” published in the winter 1992 issue of *Air Power History*. Winton noted several factors militating against such a unified theory, specifically the diverse character of air power, a comparative lack of historical experience, the difficulties in reconciling air power theory and practice, and the differences in service perspectives between airmen and their counterparts in other domains.²

Phillip S. Meilinger, a former professor of air power studies and a former dean of the Air Force’s School of Advanced Airpower Studies (SAAS) of Air University at Maxwell Air Force Base (AFB), Alabama, has written that much air power literature focuses on aerospace technology and science, rather than the study of the rationales for the use of air power itself. He posited that from the relative absence of rigorous treatments of air power in narrative and analysis, compared to other military disciplines.³ Most air power theory aligns against three basic focuses of effort, namely strategic bombardment, attack of battlefield tactical forces, and air superiority, typically favoring one as the decisive role for air power.

² Harold R. Winton, “A Black Hole in the Wild Blue Yonder: The Need for a Comprehensive Theory of Air Power,” *Air Power History* 39, no. 4 (Winter 1992): 32-33.

³ Col Phillip S. Meilinger, ed., *The Paths of Heaven: The Evolution of Air Power Theory* (Maxwell Air Force Base, Ala.: Air University Press, 1997), xii.

The first theoretical work on strategic bombardment was Giulio Douhet's *Command of the Air*, which influenced much of the instruction at the U.S. Army Air Corps Tactical School (ACTS), at Maxwell Army Airfield (predecessor to Maxwell AFB). *Command of the Air* held as its basic precept the need for air superiority, a prerequisite for using air power in a dominant role to attack the civilian economic base and morale and end a conflict.⁴ The ACTS was the intellectual center of the U.S. Army Air Forces for years, and developed theories on strategic bombardment that drew heavily on Douhet's foundations, as well as those of Brigadier General William Mitchell, the U.S. Army's first theorist of air power.⁵ Another key advocate of strategic bombardment was Marshal of the Royal Air Force Hugh M. Trenchard, considered by many as the father of the Royal Air Force (RAF). Trenchard viewed air power as a strategic instrument, emphasizing the need to gain air superiority; the psychological effects of air attack, particularly on the morale of an enemy combatant; and the offensive nature of air power, employed to destroy targets of military-economic benefit to end a war.⁶

The first air power theory to integrate direct attack on military forces in the field came from Marshal of the Royal Air Force John "Jack" Slessor, one of Trenchard's subordinates. In *Airpower and Armies*, Slessor advocated the use of air power against a fielded military force, and

⁴ Clayton K. S. Chun, *Aerospace Power in the Twenty-First Century: A Basic Primer* (Colorado Springs, Colo.; Maxwell Air Force Base, Ala.: U.S. Air Force Academy in cooperation with Air University Press, 2001), 39-40.

⁵ Meilinger, *The Paths of Heaven: The Evolution of Air Power Theory*, xviii-xix. Chun, *Aerospace Power in the Twenty-First Century: A Basic Primer*, 56.

⁶ Phillip S. Meilinger, "Trenchard, Slessor, and Royal Air Force Doctrine before World War II," in *The Paths of Heaven: The Evolution of Air Power Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, Ala.: Air University Press, 1997), 51-55.

was the first to examine the theory of close air support (CAS).⁷ Slessor's work was the first to lay out a theoretical basis for joint coordination between air power and land power forces.⁸

The most strident advocate of air superiority operations was Lieutenant General Claire Chennault, best known for his command of the American Volunteer Group, also known as the "Flying Tigers." Chennault's unique contribution to air power literature focused on his own advocacy of fighter aircraft. Based on his experiences in an air defense exercise at Fort Knox, Kentucky in 1933, Chennault challenged the assertions of bomber advocates that air defenses would not stop bomber forces.⁹ Chennault outlined his theories from 1933 to 1937 in several journal articles, particularly "The Role of Defensive Pursuit," written immediately after the Fort Knox exercise.¹⁰

Although the advent of nuclear weapons seemed to portend a fundamental change in the role of air power, especially at the outset of the Cold War, most of the literature involving nuclear weapons focused on grand strategy. The expectation of widespread destruction and lasting aftereffects from nuclear weapons employment precluded the same view of nuclear weapons as occurred with the Soviets, namely as a more destructive form of delivering fires on the battlefield.¹¹ Recognition of the strategic implications of nuclear use not only complicated

⁷ The distinction between interdiction and close air support lies in authorities for targeting. In close air support, a ground commander normally designates targets, whereas an air commander does so for air interdiction, further away from the ground forces' location.

⁸ Chun, *Aerospace Power in the Twenty-First Century: A Basic Primer*, 55-56.

⁹ Col Phillip S. Meilinger, *Airmen and Air Theory: A Review of the Sources* (Maxwell Air Force Base, Ala.: Air University Press, 2001), 40-41.

¹⁰ "The Role of Defensive Pursuit" appeared three parts, the first in the November-December 1933 *Coast Artillery Journal*, and the other two parts appearing in the January-February 1934 and March-April 1934 issues. The other articles were "Some Facts About Bombardment Aviation," in the September-October 1935 issues of *Infantry Journal* and *Coast Artillery Journal*; "Fighting for Observation" in the May-June 1936 issues of *Infantry Journal* and *Coast Artillery Journal*, and "Pursuit versus Bombardment" in the December 1936 *National Aeronautics Association Magazine*; MAJ John M. Kelley, "Claire Lee Chennault: Theorist and Campaign Planner" (Monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 1993), 9-18, 42-47.

¹¹ The Army did briefly pursue such a view of nuclear weapons, exploring the doctrinal implications of the widespread use of short-range tactical nuclear weapons, but largely abandoned that effort after the failure of the

the development of nuclear tactics, but also made the notion of a limited nuclear war unrealistic if not impossible.¹²

As a result, the literature that discussed both air power and nuclear weapons focused primarily on deterrence. Such works included book-length treatments such as Bernard Brodie's 1959 *Strategy in the Missile Age* and articles such as Albert Wohlstetter's "The Delicate Balance of Terror," in the January 1959 *Foreign Affairs*. Wohlstetter's work with the RAND Corporation was particularly influential in developing the balance of nuclear force structure and some of its necessary characteristics.¹³ Those works were separate from the larger body of nuclear war literature that focused on game theory and strategy such as Herman Kahn's *On Thermonuclear War* and Thomas Schelling's *The Strategy of Conflict* and *Arms and Influence*. However, the theory of the employing air power itself did not change with the advent of nuclear weapons and as a result, the deterrence theorists were largely separate from the foundational air power theory that governed how airmen thought about their trade, particularly at the operational level of war.

Winton's assertions as to the absence of a unified theory of air power have gone largely unchallenged. One theorist within the Air Force, however, took up the mantle of seeking to develop a unified theory. Dennis M. Drew, a retired U.S. Air Force colonel whose career spanned over 30 years at Air University among the Air Command and Staff College (ACSC), the Center for Aerospace Doctrine, Research, and Education (CADRE) and SAAS, attempted to develop a unified theory of air power. The result was "The Essence of Aerospace Power," an

Pentomic Division structure. LTC Andrew J. Bacevich, *The Pentomic Era: The U.S. Army Between Korea and Vietnam* (Washington, D.C.: National Defense University Press, 1986).

¹² Lawrence Freedman, "The First Two Generations of Nuclear Strategists," in *Makers of Modern Strategy: from Machiavelli to the nuclear age*, ed. Peter Paret, Gordon Alexander Craig, and Felix Gilbert (Princeton, N.J.: Princeton University Press, 1986), 747-748.

¹³ Robert Zarate, introduction to Albert J. Wohlstetter and Roberta Wohlstetter, *Nuclear Heuristics: Selected Writings of Albert and Roberta Wohlstetter*, ed. Robert Zarate and Henry D. Sokolski (Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2009), 9-26.

article-length a synthesis of previous air power theory appearing in the Summer 2001 issue of *Aerospace Power Journal*, one of Air University's journals.

Observing the Air Force's promulgation of three substantively different major vision statements between 1990 and 2000, Drew sought to describe air power's capabilities, not in terms of its missions but its basic characteristics. He founded his explanation of "the essence of aerospace power" on the statement that "only aerospace power can apply great power quickly to any tangible target on the planet."¹⁴ Drew derived that declaratory sentence in the basic differences between air power and military power in other domains, and refined that proposition through several prerequisites.

The first of those prerequisites was the actual air and space assets required, which he interpreted beyond airframes and munitions, but also the aircrews and the supporting infrastructure to educate, train, and sustain those crews. The second prerequisite is timely and accurate intelligence. Drew specifically cited Philip S. Meilinger's pamphlet *10 Propositions Regarding Air Power*, one of which was "in essence, Air Power is targeting, targeting is intelligence, and intelligence is analyzing the effects of air operations."¹⁵ Drew argues such a view from the ability of air power to deliver power (often described as lethal or nonlethal fires, but also humanitarian aid, resources, or information), something that in more recent literature has been associated with the term "effects."¹⁶ The last prerequisite is political will sufficient to

¹⁴ Dennis M. Drew, "The Essence of Aerospace Power: What Leaders Need to Know," *Aerospace Power Journal* 15, no. 2 (Summer 2001): 24. The article appears in expanded form in *Recapitalizing the Air Force Intellect*, the Air University Press anthology of Drew's numerous contributions to the Air Force's literature and education.

¹⁵ Col Phillip S. Meilinger, *10 Propositions Regarding Air Power* (Washington, D.C.: Air Force History and Museums Program, 1995), 20.

¹⁶ Drew, "The Essence of Aerospace Power: What Leaders Need to Know," 24-25. Although a historiography of effects-based operations is beyond this work, one particularly influential (and ambitious) early work on effects appeared in Eliot A. Cohen, *Gulf War Air Power Survey: Operations and Effects and Effectiveness*, vol. 2 (Washington, D.C.: Office of the Secretary of the Air Force, 1993), Part II, 25-104. Another highly influential work on effects-based operations is Brig Gen David A. Deptula, *Effects-Based Operations: Change in the Nature of*

enable the exercise of air power. That last distinction accounts for the policy and strategy considerations that frame the conduct of operational art. Drew notes political constraints that have restrained the use of air power, stating that “in the eyes of many airmen, political will has been their Achilles’ heel.”¹⁷ While the immediacy and reach of air power provides better responsiveness relative to its land power or maritime counterparts, it does not necessarily mean that political leaders to recognize the full implications of its use. Indeed, its relative speed may make such recognition more difficult due to the compressed timelines involved.

Drew, a longtime contemporary of Winton’s, demurred from claiming any success in developing a unified theory of air power. However, as Winton has observed, “The Essence of Aerospace Power” is an essential statement of what makes air power unique from other military instruments of national power. Drew also asserted that in its maturity, “air power can transport anything, anywhere, quickly.” The “anything” is not merely fires but also supplies and even people; one of Drew’s examples is “shuttle diplomacy,” enabled through air power’s unique capabilities.¹⁸ However, at the end of Vietnam, no such expansive view of air power’s capabilities and unique roles existed. Instead, the Air Force had balkanized along much the same lines as its foundational theory, namely along strategic bombardment, air superiority, and ground attack. The result was an Air Force divided against itself, a state hardly conducive to the development of the theory or practice of operational art.

Warfare (Washington: Aerospace Education Foundation, 2001). Two other theoretical treatments appear in Edward Allen Smith, *Effects Based Operations: Applying Network Centric Warfare in Peace, Crisis, and War* (Washington: Department of Defense Command and Control Research Program, 2002) and Edward C. Mann, Gary Endersby, and Thomas R. Searle, *Thinking Effects: Effects-Based Methodology for Joint Operations* (Maxwell Air Force Base, Ala.: Air University Press, 2002).

¹⁷ Drew, “The Essence of Aerospace Power: What Leaders Need to Know,” 26.

¹⁸ Dennis M. Drew, interview by author, March 6, 2012, notes and recording in author’s possession. Winton also shared that Drew had confessed “varying degrees of failure” in attempting to develop such a theory. Harold R. Winton, interview by author, March 2, 2012, notes and recording in author’s possession.

Cultural Divides Within the Air Arms

In *The Icarus Syndrome*, a study of the Air Force's institutional culture, Carl Builder has argued that the Air Force's leadership abandoned a unifying theory of air power in favor of the diverse, and often divergent interests of its warring factions.¹⁹ The greatest divide existed between two communities. The first faction was the Strategic Air Command (SAC) and its nuclear strike assets. The second comprised three of the Air Force's major commands (MAJCOM), namely the Tactical Air Command (TAC), U.S. Air Forces Europe, (USAFE), and Pacific Air Forces (PACAF), collectively known as the Tactical Air Forces (TAF).²⁰ The relationship between SAC and the TAF bordered on internecine conflict. That conflict abated only when the leadership of the Air Force perceived a threat from the other services.²¹

The balkanization of the Air Force occurred from the service's infancy, a product both of the debate over the roles and missions of the former Army Air Corps and its fight for independence from the Army. Veterans of the World War II strategic bombardment efforts in Europe and in the Pacific formed the first cohort of senior Air Force leaders at the beginning of the Cold War. The bomber generals, seeking to differentiate the Air Force from its former Army roots, embraced strategic bombing as the Air Force's primary mission in 1948, resulting in the subordination of the TAF to the Continental Air Command, whose responsibilities focused

¹⁹ Carl H. Builder, *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force* (New Brunswick, N.J.: Transaction Publishers, 1994), 34-36. Builder, an analyst for the RAND Corporation, also penned *The Masks of War*, a highly influential study of the U.S. armed services' organizational cultures.

²⁰ The MAJCOMs, many of which were commanded by 4-star generals, were the first level immediately below Headquarters, Department of the Air Force, and organized generally along functional lines, with the exception of the TAF MAJCOMs.

²¹ Much of this internal division appears in Col R. Michael Worden, *Rise of the Fighter Generals: The Problem of Air Force Leadership, 1945-1982* (Maxwell Air Force Base, Ala.: Air University Press, 1997). One particularly bitter fight against an external threat occurred with the Army's proposed AH-56 Cheyenne attack helicopter for the CAS role. The Air Force started developing the A-X aircraft as a direct counter to the threat posed by the Cheyenne. Douglas Campbell, *The Warthog and the Close Air Support Debate* (Annapolis, Md.: Naval Institute Press, 2003), 64-65.

primarily on air defense.²² In the meantime, senior Air Force leaders focused on strategic bombers; the basis of the Air Force's contribution to American national strategy in the 1950s was heavily reliant on the nuclear weapons that only SAC strategic bombers could deliver.²³ Throughout the 1950s and 1960s, SAC was unquestionably the Air Force's first priority for budgeting, acquisitions, doctrine, and personnel fills.²⁴

Under General Curtis E. LeMay, its commander-in-chief from 1948 to 1957, SAC steadily professionalized its ranks in the context of the nuclear delivery mission, resulting in a particularly rigid institutional culture.²⁵ The strategic implications of nuclear use allowed no tolerance of accidental risk and required an unforgiving adherence to procedure and standards. One of the most enduring legacies of that culture was an informal SAC motto: "to err is human, to forgive divine, neither of which is SAC policy."²⁶ That culture was a proximate factor in the heavy losses sustained by B-52 bombers employed over Hanoi in 1972 during Operation LINEBACKER II. SAC mission planners had developed tactics that left little latitude for combat aircrews facing one of the most sophisticated air defense environments in the world.²⁷ That rigidity stood out in comparison to the far more decentralized practice of command and control in the Vietnam-era TAF.

²² Builder, *The Icarus Syndrome*, 86-88. Worden, *Rise of the Fighter Generals*, 39-40.

²³ Robert Frank Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*, vol. 1 (Maxwell Air Force Base, Ala.: Air University, 1989), 436-437.

²⁴ Worden, *Rise of the Fighter Generals*, 86.

²⁵ The title of "commander-in-chief" was unique to SAC amongst Air Force MAJCOMs and reflected the wartime responsibilities inherent to the command's dual existence as a specified command under the Unified Command Plan.

²⁶ Integral to the procedures and standards within SAC was the concept of permissive action links, originally developed by social scientists at the RAND Corporation to prevent the accidental or inadvertent use of nuclear weapons. Wohlstetter and Wohlstetter, *Nuclear Heuristics: Selected Writings of Albert and Roberta Wohlstetter*, 20-21. Formal acceptance of the motto was attributed to General Russell Dougherty, a former commander-in-chief of SAC who reportedly used it in one of his speeches. "Global Thermonuclear Quotes," *The Missile Forums*, October 30, 2009, <http://www.missileforums.com/forums/viewtopic.php?f=21&t=845&p=7248> (accessed March 21, 2012). Lieutenant Colonel (Retired) Gary Hanson, email to author, March 21, 2012. Hanson, a retired SAC missileer, commanded a training squadron for officers headed to nuclear missile combat crews.

²⁷ Earl H. Tilford Jr., *Setup: What the Air Force did in Vietnam and Why* (Maxwell Air Force Base, Ala.: Air University Press, 1991), 255.

The other effect of Vietnam on the Air Force emerged after the conflict. Rather than limiting combat deployments solely to the TAF, the Air Force established a policy of no involuntary second tours to bases around Southeast Asia.²⁸ The corporate decision not to expend the TAF's manpower on Vietnam created an unintentional leavening of tactical air experience far outside the TAF, which sometimes created friction when those pilots returned from Vietnam to non-TAF assignments.²⁹ The postwar distinction between those who had flown in Vietnam and those who did not worked to SAC's detriment, as prior combat experience became a positive discriminator for future promotions and leadership opportunities.

From 1982, starting with General Charles A. Gabriel, the first Chief of Staff raised as a so-called "fighter general," the TAF was the chief source of the Air Force's senior leadership.³⁰ However, the divide remained between SAC, whose mission involved comparative autonomy from the other services, and the TAF, which defined part of its roles in service to the Army. A unifying vision of air power between the two remained elusive.

The Air Force's Doctrine Wars

The absence of a unifying vision of air power meant that the development of Air Force doctrine remained disjointed. Drew, observing the prevailing attitudes between the Air Force's various factions, noted that the Air Force as a whole faced great difficulty trying to get leaders to think much beyond tactics in the TAF, while leaders in SAC started from strategy and cared little

²⁸ Ibid., 216. Leaders in the TAF immediately recognized the near-term implications of the policy; in 1965, Colonel Robin Olds and his commanding general at the 9th Air Force estimated that the *entire* TAF would run out of eligible pilots within two and a half years. Robin Olds, Christina Olds, and Ed Rasimus, *Fighter Pilot: The Memoirs of Legendary Ace Robin Olds* (New York: St. Martin's Press, 2010), 245-246.

²⁹ Worden, *Rise of the Fighter Generals*, 185. Olds, in an interview after the war, commented on this very trend. Col Robin Olds, "CORONA HARVEST Oral History Interview #51," 1968, page 90, IRIS 903798, Air Force Historical Research Activity.

³⁰ Worden, *Rise of the Fighter Generals*, 224-226.

for tactics beyond the mechanics of weapons delivery.³¹ The manifestation of that split meant that most of the Air Force's attention to doctrine occurred at its lowest of its doctrinal echelons.

The Air Force has traditionally divided its doctrine among three levels. Its top level, or "basic" doctrine describes "the fundamental principles describing and guiding the employment of aerospace forces in war." Immediately below is operational doctrine establishing "principles guiding the use of aerospace forces in campaigns and major operations." At the bottom level is tactical doctrine that sets forth "detailed tactics, techniques, and procedures guiding the use of specific weapons systems to accomplish specific objectives."³² The Air Force has generally paid the most attention to its tactical doctrine, which represents the most immediate application of its body of knowledge.³³

However, the Air Force has viewed doctrine differently from its land power counterparts. The Army has traditionally viewed doctrine as an authoritative source, because of the requirement to induct and mobilize large numbers of reservists at the beginning of most wars. Rather than passing combat lessons directly from veterans to replacements, Army doctrine served that purpose at the institutional level as the best available thought. The Air Force had no such tradition. Instead, the fight for independence from the Army, as well as the Air Force's traditional focus on its technology, deemphasized the role of doctrine in the force.³⁴ However,

³¹ Drew, interview, March 6, 2012.

³² The three-level construct for Air Force doctrine stems from the 1964 edition of Air Force Manual 1-1. Lt Col Johnny R. Jones, *Development of Air Force Basic Doctrine, 1947-1992* (Maxwell Air Force Base, Ala.: Air University Press, 1997), 49. Another explanation appears in Lt Col Johnny R. Jones, "Concept Paper on Air and Space Doctrine Education" (Maxwell Air Force Base, Ala.: Air Force Research Institute, College of Aerospace Doctrine, Research, and Education, Air University, 1996), Appendix.

³³ Winton, interview, March 2, 2012.

³⁴ The waning emphasis on doctrine was a trend in several interviews conducted at the 1997 establishment of the Air Force Doctrine Center at Langley Air Force Base, Virginia. Thomas W. Crouch, ed., *Oral History on Establishment, Operation, and Re-Organization of the Air Force Doctrine Center* (Langley Air Force Base, Va.: Air Force Doctrine Center, 1997), 32, 69, 75.

the comparative autonomy of the Air Force's various camps made the lack of that doctrine even more pronounced.

The absence of a unifying concept for air power was painfully apparent in the Air Force's basic doctrine in the 1970s and 1980s. Although the Air Force's first manual in that role appeared in 1953, its basic doctrine in the wake of Vietnam was inconsistent, the most infamous of which was the 1979 edition of Air Force Manual (AFM) 1-1, *Functions and Basic Doctrine of the United States Air Force*, which earned the sobriquets of the "picture book" or "cartoon version" for its extensive use of pictures and quotations instead of theory or text.³⁵ The Air Force's basic doctrine described characteristics, roles, and basic missions for air power, but provided little substantive details about the roles of air power other than some pithy assertions on fighting "to preserve the security and freedom of the people of the United States."³⁶ A more general role of air power remained absent from that basic doctrine; as Drew noted in "Two Decades in the Airpower Wilderness," a pointed commentary in the September-October 1986 *Air University Review*, the Air Force's basic doctrine of the 1970s contained very little that was actually useful to the airmen who had to implement it.³⁷

The 1979 AFM 1-1 had been in print less than a year before the first criticisms of the new manual appeared. One of the most critical reviews of the 1979 manual came from Major Robert C. Ehrhart, who asserted that "a fundamental problem with Air Force doctrine is the absence of any real consensus as to what doctrine is and just what it is supposed to do."³⁸ Williamson

³⁵ Robert Frank Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1961-1984*, vol. 2 (Maxwell Air Force Base, Ala.: Air University, 1989), 711-714, 736. J.P. Hunerwadel and Woody W. Parramore, interview by author, March 9, 2012, notes in author's possession.

³⁶ Department of the Air Force, *Air Force Manual 1-1: Functions and Basic Doctrine of the United States Air Force* (Washington, D.C.: G.P.O., 1979), v.

³⁷ Dennis M. Drew, "Two Decades in the Air Power Wilderness: Do We Know Where We Are?," *Air University Review* 37, no. 6 (October 1986): 11.

³⁸ Maj Robert C. Ehrhart, "Some Thoughts on Air Force Doctrine," *Air University Review* 29, no. 2 (April 1980): 30.

Murray, an Air Force Reserve major and a history professor at Ohio State, was equally critical, stating that the manual contained internal contradictions, lacked any historical foundations in previous experience, and did not provide a framework to guide the use of air power in the future, a damning criticism of the Air Force's so-called basic doctrine.³⁹ The critiques were symptomatic of a larger problem in Air Force doctrine, a point that Drew and Major General I. B. Holley, a history professor at Duke University, underscored in their own articles on the state of doctrine.⁴⁰

The furor over the “comic book” AFM 1-1 led to an extensive revision of the manual, culminating in the release of a replacement edition on March 16, 1984. The 1984 AFM 1-1 was a greatly improved articulation of the roles and missions of the Air Force and the forces it contributed to national defense. The manual was the first serious treatment of the missions, operational tasks, and structures governing air power after Vietnam. Its attempt to address the character of air power, however, was less successful. As an authoritative document, the 1984 AFM 1-1 continued its predecessors' trend of assertions on the capabilities and principles for the employment of air power without historical proof, a premise that even Colonel Clifford R. Krieger, one of the officers responsible for AFM 1-1 itself, acknowledged in *Air University Review*.⁴¹

³⁹ Williamson Murray, “A Tale of Two Doctrines: The Luftwaffe's ‘Conduct of the Air War’ and the USAF's Manual 1-1,” *Journal of Strategic Studies* 6, no. 6 (December 1983): 89-91.

⁴⁰ Andrew David Dembosky, “Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992” (Master's thesis, Raleigh: North Carolina State University, 1993), 46-49. Dennis M. Drew, “Of Trees and Leaves: A New View of Doctrine,” *Air University Review* 33, no. 1 (January 1982): 40-48. I. B. Holley, “Of Saber Charges, Escort Fighters, and Spacecraft,” *Air University Review* 34, no. 5 (October 1983): 2-11. Holley was a frequent commentator on the state of Air Force doctrine in *Air University Review* and in other forums.

⁴¹ Col Clifford R. Krieger, “USAF Doctrine: An Enduring Challenge,” *Air University Review* 35, no. 5 (October 1984): 18. Among the controversial assertions included airpower being “survivable” and being able to show “presence.” Department of the Air Force, *Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force* (Washington, D.C.: G.P.O., 1984), 2-3.

Perhaps more telling was Krieger's statement that "ours is a technical business, and many in our service must devote themselves almost exclusively to their areas of specialization, which are as important as doctrine in conducting successful air warfare."⁴² The commentary of Ehrhart, Holley, and Drew notwithstanding, such an attitude was more the norm than exception. In a 1986 *Air University Review* article, Colonel Thomas A. Fabyanic delivered a stinging assessment of the Air Force's ability to visualize war beyond its technical aspects, stating "the Air Force is devoid of any real recognition of war's true nature," a charge he particularly leveled at a mechanistic view of war held by some members of SAC.⁴³ The tension between SAC and the TAF was manifest in the recurrent emphasis on strategic bombardment as the centerpiece of air power. Such a mission left little room for the TAF. In the event of a general war involving release of strategic nuclear weapons, the only means with the capabilities to execute the Strategic Aerospace Offense mission in the 1984 AFM 1-1 were SAC's global strike assets, for which operational doctrine did not apply. The anticipated short duration of such a war meant that the translation of strategic objectives into tactical direction occurred solely through targeting to achieve the requisite destruction to coerce or compel an adversary to accede to the desired strategic ends.⁴⁴ On the other hand, the activities inherent to the TAF in combat would not achieve a joint force commander's termination objectives through targeting alone, driving the need for operational doctrine as a guide for translating strategy into tactical direction.

The Air Force's operational doctrine, however, was even more moribund than its basic doctrine. The only such operational combat doctrine with Air Force-wide sanction was the 1969

⁴² Krieger, "USAF Doctrine: An Enduring Challenge," 18.

⁴³ Col Thomas A. Fabyanic, "War, Doctrine, and the Air War College: Some Relationships and Implications for the U.S. Air Force," *Air University Review* 37, no. 1 (February 1986): 2-29.

⁴⁴ Department of the Air Force, *AFM 1-1 (1979)*, 1-12. Department of the Air Force, *AFM 1-1 (1984)*, 2-1, 3-2. The position of the Strategic Aerospace Offense mission as the first basic mission in AFM 1-1 was no coincidence. Tilford, *Setup*, 295. See also Dembosky, "Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992," 26.

edition of AFM 2-1, *Tactical Air Operations- Counter Air, Close Air Support, and Air Interdiction*.⁴⁵ As a general statement of philosophy for tactical air operations, the broad terms in the 1969 AFM 2-1 were sufficient. However, it did not keep up with changes in command and control or methods of planning, let alone the changes in materiel and technology that had occurred since the Vietnam era, making it obsolete by the 1970s. The deficiencies in AFM 2-1 without any hope of replacement drove TAC to develop an interim manual covering tactical air operations, which appeared in April 1978 as TAC Manual (TACM) 2-1, *Tactical Air Operations*. Rather than the lack of specificity in AFM 2-1, TACM 2-1 sought to provide “a single source document delineating the missions/functions/activities of all tactical air missions and supporting activities and (show) how they interrelate in tactical air operations.”⁴⁶ The level of detail in TACM 2-1, while more specific than Air Force “operational doctrine” might warrant, was a welcome relief to those in the TAF looking for a more authoritative statement of roles, missions, and procedures.⁴⁷

The parentage of TACM 2-1 was no accident. In spite of its second-class status, the TAF was hardly a monolithic entity. During the 1970s, the Air Force repeatedly failed to achieve sufficient consensus on a replacement to the 1969 AFM 2-1 manual. Unusually, the culprit was not SAC, but USAFE.⁴⁸ The root of USAFE’s opposition to a revision of TACM 2-1, while not formally recorded in any histories, may have owed to its obligations to NATO. While the

⁴⁵ Other operational doctrine existed covering amphibious operations (AFM 2-2), tactical airlift (AFM 2-4), and strategic airlift (AFM 2-21), but they did not cover the combat missions in AFM 2-1. All of the manuals dated from 1966-1969, AFM 2-1 being the most recent of those manuals. Rebecca Grant, “Joint Doctrine: Dangers and Opportunities” (RAND, Project Air Force, August 1996), 27, IRIS 01118927, Air Force Historical Research Activity.

⁴⁶ Department of the Air Force, Tactical Air Command, *Tactical Air Command Manual 2-1: Tactical Air Operations* (Langley Air Force Base, Va.: Tactical Air Command, 1978), table of contents.

⁴⁷ Maj William G. Reese, “The Doctrine Gap: The 27 Year Wait for a New Air Force Operational Doctrine Document” (Master’s thesis, Maxwell Air Force Base, Ala.: School of Advanced Airpower Studies, 1996), 23–24.

⁴⁸ J. A. Mowbray, “Air Force Doctrine Problems: 1926-Present,” *Airpower Journal* 9, no. 4 (Winter 1995): 21-41.

USAFE commander was an Air Force MAJCOM commander, he also held the operational title of Commander, Allied Air Forces Central Europe (COMAAFCF), with operational command of the 2d and 4th Allied Tactical Air Forces (ATAF). Any American contributions to NATO were at least partially constrained by NATO doctrine; in the execution of his theater air commander responsibilities, the 4-star U.S. Air Force general holding the USAFE and COMAAFCF responsibilities was acting in his NATO capacities. In any event, USAFE's denial of concurrence left little recourse other than TAC issuing its own operational doctrine unilaterally.

Both TAC and the Air Staff attempted to address this void. The impetus for their work was some Army efforts to get the Air Force to develop operational doctrine within the AirLand Battle context, as well as the Joint Staff's nascent efforts towards developing joint doctrine. The 1986 TAC attempt to bridge that gap, AFM 2-XC, *Tactical Air Operations*, was internally focused, not adequately addressing the linkage of tactical air operations to a theater strategy in spite of multiple comments in several revisions.⁴⁹ In contrast, the Air Staff proposal for an AFM 1-X, *Theater Air Warfare Doctrine*, would have addressed the gap occupied by the long-obsolete 1969 edition of AFM 2-1.⁵⁰ However, the draft never saw final publication or even informal use, and AFM 2-1 remained in effect since it was never rescinded. In the absence of any successors, TACM 2-1 was the closest thing to Air Force operational combat doctrine that would exist for the remainder of the Cold War, but both its age and bastard parentage were readily apparent by the mid-1980s.

⁴⁹ Staff Summary Sheet, "Draft AFM 2-XC, Tactical Air Operations," undated, in Center for Aerospace Doctrine, Research, and Education, "History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1986" (Air University, 1987), SD-24, IRIS 1087077, Air Force Historical Research Activity.

⁵⁰ Keith W. Geiger, Memorandum for Record, "Working Group Meeting on Theater Air Warfare Doctrine," in *Ibid.*, SD-28.

In contrast, NATO operational air power doctrine was, as always with any alliance document, an instrument of compromise. The two ATAFs within Allied Air Forces Central Europe operated nominally under the concept of “centralized command and decentralized execution,” but practiced two very different implementations of that concept. The British-led 2ATAF, supporting the British-led Northern Army Group (NORTHAG) reflected their culture of making command decisions at the lowest level practicable, which in practice placed decision-making authorities jointly between ground and air tactical commanders. The American-led 4ATAF, supporting the American-led Central Army Group (CENTAG) reflected the U.S. Air Force cultural and institutional preference to theater-level decision making, centralized command and decentralized execution, resulting in decisions being made at much higher levels.⁵¹

The closest thing to basic or operational air doctrine for NATO was the 1976 edition of Allied Tactical Publication (ATP) 33, *NATO Tactical Air Doctrine*. The fundamental differences in practice between 2ATAF and 4ATAF meant that ATP-33, along with the requirement for consensus amongst all of the NATO nations on the document, limited the manual to broad procedures for command and control of Allied tactical air assets. Although ATP-33 paid lip service to centralized command and decentralized execution, the existence of two vastly different systems for apportionment and allocation of air sorties between 2ATAF and 4ATAF, over which COMAAFCE had little directive control, was inescapable.⁵² The fact that the British had no national air doctrine, while being the ATP-33 custodian nation responsible for coordinating all proposed amendments and modifications, made a substantively directive document unlikely.⁵³

⁵¹ David J. Stein, *The Development of NATO Tactical Air Doctrine, 1970-1985* (Santa Monica, Calif.: RAND, 1987), 9–12. The NORTHAG commander was also the senior British Army commander in NATO, commanding British Army of the Rhine (BAOR). The U.S. Army had always provided the U.S. Army Europe (USAREUR) commander as the CENTAG commander. U.S. airmen regularly served in both 2ATAF and 4ATAF.

⁵² *Ibid.*, 21, 24.

⁵³ David J. Stein, Kimberly Nolan, and Robert Perry, *Process and Problems in Developing NATO Tactical Air Doctrine* (Santa Monica, Calif.: RAND, 1988), 6.

The NATO tactical air doctrine with real implications to the application of air power was ATP-27, *Offensive Air Support Operations*, which was a subordinate manual to ATP-33. Once again, the divide in practice aligned along the 2ATAF/4ATAF split. The basis of NATO offensive air support as described in the 1975 version of ATP-27(A) was tactical air support to a ground commander, with two primary combat missions of CAS and air interdiction. However, the inclusion of air interdiction in ATP-27(A) ran afoul of the U.S. Air Force delegation in staffing, who maintained that air interdiction was not support since it did not require detailed integration with a land force commander.⁵⁴ While such a distinction may sound like semantics, it had paramount significance to American airmen, who could accept a ground commander having responsibility for apportioning CAS, but not for air interdiction, which they saw as an air commander's eminent domain.

In the event of a Soviet conventional attack, the differences between the 2ATAF and 4ATAF systems meant that there was effectively no single air commander in the Central Region, even though neither NORTHAG nor CENTAG had an abundance of tactical air power. Instead, the two ATAFs were effectively support arms to their army groups, and the different styles of air offensive support suggested two approaches. The focus of air power would have been on interdiction in the CENTAG area of operations, in which some tactical units had less access to air power than others while the army group commander was making decisions on where to assume risk. The British approach in the NORTHAG area of operations would have emphasized CAS and a more even distribution of air power assets.

Those preferences actually favored Soviet theater-wide maneuver, as deep attack and interdiction would have been vital in preventing Soviet forces from overwhelming NORTHAG

⁵⁴ Stein, *The Development of NATO Tactical Air Doctrine, 1970-1985*, 23, 27. The designation as ATP-27(A) indicated that the previous implies a revision, in this case from the original 1967 edition of ATP-27.

over the relatively open terrain in the north. Furthermore, the lack of standardization between the two ATAFs meant that the American general serving as COMAAFCE, or his German superior commanding the Central Region, held only nominal authority to shift forces between the two areas of operation, and doing so required passing direction through multiple layers of command at the theater level.

A compromise appeared before ATP-27(A) began revision. In 1978, the British delegation to the rewrite effort had introduced a concept called battlefield air interdiction (BAI), a mission between CAS and the U.S. Air Force definition of air interdiction that was effectively the same as the practice of air interdiction within 2ATAF. As approved in the 1979 edition, designated ATP-27(B), the BAI mission entailed joint planning and coordination between an ATAF and its corresponding army group. That coordination was continuous in planning but largely ceased upon execution. The introduction of BAI in ATP-27(B) replaced the previous mention of “air interdiction” in ATP-27(A).⁵⁵ Such a distinction marked a major change from AFM 2-1, which was drafted long before the advent of ATP-33. It also meant that contrary to what was in Air Force doctrine, U.S. Army tactical commanders in NATO roles held far closer access to planning and requesting interdiction (of any kind) than otherwise would have been the case.⁵⁶ However, the “workaround” of jointly coordinating CAS and BAI apportionment by 4ATAF and CENTAG reflected the reality that COMAAFCE, regardless of his nominal command authorities, was in no position to direct those sorties due to the cultural differences between 2ATAF and 4ATAF.⁵⁷

⁵⁵ Ibid., 33-34. Maris “Buster” McCrabb, “The Evolution of NATO Air Doctrine,” in *The Paths of Heaven: The Evolution of Air Power Theory*, ed. Phillip S. Meilinger (Maxwell Air Force Base, Ala.: Air University Press, 1997), 457.

⁵⁶ Harold R. Winton, interview by author, March 7, 2012, notes and recording in author’s possession.

⁵⁷ Michael “Dutch” Dietvoorst, interview by author, March 9, 2012, notes in author’s possession. Dietvoorst, a doctrine developer at the LeMay Center for Doctrine Development and Education, Maxwell AFB,

All the discussion over doctrine, however, was focused on the mechanics of delivery of air power and not the rationales for its use. Much of the doctrinal debate over CAS, BAI, and air interdiction focused on tactics. The differences in those tactics were a function of what the lead nations in 2ATAF and 4ATAF saw as the best way to achieve the military aims necessary to realize the NATO strategy of forward defense. Fabyanic's charge that the Air Force was largely ignorant of the nature of war bears out in the debate over tactics.

That emphasis on tactics continued even further as the Army made its own explorations towards operational art. The publication of BDM's *Holding Pact Second Echelon Forces at Risk* study placed even more attention on the authorities and requirements involved in the air interdiction mission. When General Donn A. Starry, commander of the U.S. Army Training and Doctrine Command (TRADOC), introduced the Extended Battlefield concept in 1978, followed by the AirLand Battle concept of Field Manual (FM) 100-5, the mechanics of battlefield air interdiction became a point of interest outside the Air Force.⁵⁸

Fortunately for the Air Force, the foundations for coordination with the Army began at TAC in the early 1970s under its commander, General William W. Momyer, and his successor, General Robert J. Dixon, in conjunction with their counterpart at TRADOC, General William E. DePuy. As noted earlier, the product of their coordination, blessed by the respective service chiefs at the Pentagon, was a full partnership between TAC and TRADOC. That partnership bore fruit in the 1975 establishment of the Directorate for Air-Land Forces Application (ALFA), a jointly manned analysis cell to provide recommendations to both commanders. Among those recommendations were several joint concepts of critical importance to both the Army and the

Alabama, was a doctrine developer in USAFE in the 1990s and worked on the changes in air doctrine from what had existed during this time period.

⁵⁸ See Chapter 4 for a detailed discussion of *Holding Pact Second Echelon Forces at Risk*, and the Extended Battlefield and AirLand Battle concepts.

TAF, the most significant of which was Joint Attack of the Second Echelon (J-SAK). The J-SAK concept directly addressed the very issues raised by *Holding Pact Second Echelon Forces at Risk* and not surprisingly, was one of Starry’s highest priorities.⁵⁹ General Wilbur L. Creech, Dixon’s successor, contributed valuable support to TRADOC’s AirLand Battle concept and NATO’s BAI concepts, and became one of AirLand Battle’s most vocal advocates.⁶⁰ Over time, both TAC and TRADOC became interlocutors to their respective services on those shared concepts. That dialogue was an attempt to bridge some fundamental organizational differences between the Army and Air Force.

Among the problems the Air Force faced in developing doctrine was the structure (or lack thereof) in place for its promulgation. Coming out of Vietnam, responsibility for Air Force doctrine rested in a small office under Headquarters, U.S. Air Force’s Office of the Deputy Chief of Staff for Plans and Operations in 1967. The office originated in a responsibility added onto the existing position of the Air Staff deputy director of plans for advance planning, resulting in a name change to the Directorate of Doctrine, Concepts, and Objectives.⁶¹

While those doctrine writers saw themselves as “defenders of the faith” for the Air Force’s roles and missions, the inevitable consequence of the Aerospace Doctrine Division place in the Air Staff meant that it was, in the words of one of its own chiefs, “always putting out

⁵⁹ GEN Donn A. Starry, *Press On!: Selected Works of General Donn A. Starry* , ed. Lewis Sorley, vol. 2 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009), 1277.

⁶⁰ In an interview a few years after his retirement, Creech attributed his advocacy of AirLand Battle to Starry’s own acknowledgement that the most effective use of air power in support of a theater commander meant that “there are times that some divisions won’t be in the fight or the main fight. Then the theater commander must have the authority to allocate where air power is needed most.” At that point Creech reportedly said “we’ve won - and the Air Force (meaning TAC, in Creech’s case) would support the Army as much as possible.” Winton, interview, March 2, 2012.

⁶¹ Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1961-1984* , 2:717. The term “Air Staff” refers to the staff that directly supports the Chief of Staff of the Air Force and his immediate staff directors, most of whom were in the Pentagon.

fires.”⁶² The Air Staff doctrine writers were too busy with their daily responsibilities to reflect, which showed in the lack of intellectual rigor in the Air Force’s doctrine through the 1970s. The other consequence of its position in the Air Staff with Concepts and Objectives was that its work was inextricably tied to the Air Force’s jockeying for advantage against the other services in the Pentagon’s Planning, Programming, and Budgeting System (PPBS). Doctrine was a secondary priority, as was apparent in several Air Staff reorganizations that produced the Deputy Directorate of Doctrine, Strategy, and Plans Integration (commonly called by its office symbol of XOXID) in 1980.⁶³ Although providing an immediate connection between doctrine and strategic planning had some utility, in reality the doctrine remained incidental to the PPBS and support to established war plans that represented the Air Staff’s most immediate concerns.

While the divides within the Air Force along its MAJCOMs made a doctrine establishment within the Air Staff logical for internal reasons, it made coordination with other services, particularly the Army, more difficult. The Army delegated responsibility for all of its doctrine development to the newly-created TRADOC in 1973. DePuy’s appointment as its first commander cemented that role through his aggressive centralization of doctrine development during his term, a tradition that Starry readily continued.⁶⁴ DePuy’s counterparts at TAC had equally forceful personalities and saw cooperation with the Army as a way to strengthen TAC, only 15 minutes’ drive away from TRADOC at Fort Monroe. The TAC-TRADOC dialogue

⁶² Ibid., 2:717-718.

⁶³ Ibid., 2:728-729. The XOXID symbol indicates that the office was in the office of the Deputy Chief of Staff for Plans and Operations (XO), under in the Directorate for Plans(X), and within it the deputy directorate for Doctrine, Strategy, and Plans Integration (ID)

⁶⁴ See Chapter 3 for a more detailed discussion of DePuy’s consolidation of the doctrine process within TRADOC.

produced a rich harvest at the tactical level, especially on procedures and concepts for integration of Army and Air Force capabilities on the battlefield.⁶⁵

Nonetheless, the close coordination between TAC and TRADOC obscured one crucial point, namely the matter of proponentcy. Although TRADOC could speak for the Army and did so for matters of doctrine, TAC could not do so for the Air Force as the Air Staff retained responsibility for those issues.⁶⁶ The parentage of TACM 2-1 was a prime example. Its chapter on the Soviet threat reflected a systems analysis approach to Soviet capabilities that looked and sounded highly reminiscent of the 1976 FM 100-5, undoubtedly a consequence of the close coordination at ALFA.⁶⁷ No other Air Force manual looked even remotely similar in appearance or tone.

The establishment of CADRE at Maxwell AFB on January 3, 1983 produced even further confusion. The organization started as a 1981 initiative by the Air University commander, Lieutenant General Charles G. Cleveland, who was seeking ways to improve Air University's ability to develop and document basic Air Force doctrinal and strategic concepts. In a November 1981 letter to the Air Force Deputy Chief of Staff for Operations and Plans, Lieutenant General Jerome P. O'Malley, Cleveland proposed a Center for Aerospace Research and Doctrine to maximize the research assets at Air University. Such an organization, while receiving nominal endorsement from the other MAJCOM commanders, ran afoul of the Air Staff's desire (as O'Malley articulated) to retain a direct linkage between doctrine and its PPBS equities. General Bennie L. Davis, commander-in-chief of SAC, was concerned that such an organization would

⁶⁵ Harold R. Winton, "An Ambivalent Partnership: US Army and Air Force Perspectives on Air-Ground Operations, 1973-90," in *The Paths of Heaven: The Evolution of Air Power Theory*, ed. Col Phillip S. Meilinger (Maxwell Air Force Base, Ala.: Air University Press, 1997), 411.

⁶⁶ James C. Slife, *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984* (Maxwell Air Force Base, Ala.: Air University Press, 2004), 41-42; Winton, "An Ambivalent Partnership: US Army and Air Force Perspectives on Air-Ground Operations, 1973-90," 405.

⁶⁷ Department of the Air Force, Tactical Air Command, *TACM 2-1 (1978)*, 2-1 - 2-18.

remove the MAJCOMs from their roles in developing doctrine, reflecting the long-ingrained divisions amongst the Air Force's internal constituencies. The eventual compromise between the Air Staff, the MAJCOMs, and Air University was that CADRE would develop doctrine, but XOXID retained final approval authorities.⁶⁸ Nonetheless, the activation of CADRE provided the Air Force a single focal point for the intellectual underpinnings for its doctrine, which was a start to addressing the intellectual voids so evident in AFM 1-1. Nonetheless, Air Force doctrine remained disjoint, reflecting the greater divisions in the Air Force itself.

The TAC-TRADOC partnership did bear fruit in the experiences of several extremely influential Air Force future senior leaders, especially Gabriel, who as Air Force Chief of Staff was instrumental in negotiating a series of agreements commonly known as the 31 Initiatives.⁶⁹ In the lone historical monograph on the topic, Richard G. Davis, a historian at the Office of Air Force History, described the 31 Initiatives as “the far-reaching and comprehensive end product of a decade of Air Force-Army cooperation.”⁷⁰ The basis of much of the 31 Initiatives was the Army's AirLand Battle doctrine, which provided a framework for air and ground operations, albeit in support of a ground commander. While some of the 31 Initiatives focused on acquisitions programs, others resolved doctrinal agreements between the two services, and codified burden-sharing agreements on such topics as air base defense, suppression of enemy air defenses, and most significantly, BAI. After a thirteen-month series of negotiations between the two services, orchestrated primarily by their respective deputy chiefs of staff for operations, Gabriel and his Army counterpart (and West Point classmate), General John A. Wickham, signed

⁶⁸ Center for Aerospace Doctrine, Research, and Education and Hugh O. Richardson, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1983” (Air University, 1984), 2-3, IRIS 1062620, Air Force Historical Research Activity.

⁶⁹ Gen Robert J. Dixon, “U.S. Air Force Oral History Interview,” interview by Mark C. Cleary, July 18, 1984, 276, IRIS 1105139, Air Force Historical Research Activity.

⁷⁰ Richard G. Davis, *The 31 Initiatives: A Study in Air Force-Army Cooperation* (Washington: Office of Air Force History, U.S. Air Force, 1987), 1.

the 31 Initiatives on May 22, 1984.⁷¹ The gains in interoperability that came from the 31 Initiatives were by themselves minor, but collectively had a transformative impact on the overall lethality and effectiveness of the land and air combat forces that faced the Warsaw Pact. However, those regulatory and programmatic improvements were not by themselves sufficient. For Creech, supporting the 31 Initiatives and their associated concepts, whether from the Air Force or the Army, were vehicles for improving the tactical competence of his own forces within TAC and within the larger TAF as a whole.⁷²

Training for Operational Warfare

The Air Force, like the Army, had not done well traditionally in maintaining proficiency in combat skills after a war.⁷³ Several officers at the Tactics Branch of the Air Staff Directorate of Operations, most notably Captain John Vickery and Major Moody Suter, recognized this trend and began an initiative that revolutionized how the TAF approached tactical combat training. Those staff officers observed in Korea and Vietnam that casualty rates for inexperienced pilots reduced substantially after their first ten missions in combat. Vickery and Suter, after developing the initial concept, gained Dixon's approval for a combat training program to give TAF organizations practice against a simulated Warsaw Pact air defense and tactical air environment. That program, beginning operations in 1975 at Nellis AFB, Nevada, became known as RED FLAG, with the express purpose of improving the tactical performance of aircrews. Its initial

⁷¹ Ibid., 35, 44. Gabriel and Wickham were personal friends, a critical enabler in gaining the institutional support for the 31 Initiatives.

⁷² The term "programmatic," within the Defense Department, refers to "programs," or the discrete blocks of defense funding that stem from the PPBS system and its expression through the aspects surrounding the planning, development, and execution of discrete portions, or in the defense budget. Gen Wilbur L. Creech, "U.S. Air Force Oral History Interview," interview by Hugh N. Ahmann, June 1992, 220–228, IRIS 1114823, Air Force Historical Research Activity.

⁷³ Maj Ronald L. Rusing, "Prepare the Fighter Force - Red Flag/Composite Force" (Master's thesis, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1980), 1–5.

iterations were internal to the TAF, but expanded later to train forces from SAC and the Military Airlift Command as well.⁷⁴

The success of RED FLAG resulted in similar exercises after Creech succeeded Dixon at TAC. The first was MAPLE FLAG, a Canadian exercise at Canadian Forces Base Cold Lake, Alberta involving for the U.S. Air Force, the Canadian Forces Air Command, and the RAF.⁷⁵ COPPER FLAG, at Tyndall AFB, Florida, integrated air defense and air-to-air combat in a hostile electronic warfare environment.⁷⁶ GREEN FLAG, also conducted at Nellis, was a dedicated exercise for electronic combat.⁷⁷ Non-flying units benefited from the new exercise programs as well; SILVER FLAG included training for base support personnel, while BLACK FLAG trained squadron-level maintenance personnel in the context of maximizing the number of sorties a unit could generate. The confluence of all of these exercise programs appeared in CHECKERED FLAG, a rehearsal exercise program for TAC squadrons preparing for their anticipated wartime missions.⁷⁸ All of these exercise programs, however, focused on squadron-level operations, and so oriented entirely on the tactical level.

BLUE FLAG, the one exception to tactical-level training, started operations in 1977 at Eglin AFB, Florida. Instead of training aircrews like RED FLAG, the BLUE FLAG exercise used both live and simulated sorties to train tactical air control center staffs in theater-level command and control, communications, and intelligence.⁷⁹ While it started as a single service exercise, BLUE FLAG rapidly incorporated participation from the Army, starting in June 1978, eventually involving the staffs of V Corps and III Corps, both of which had wartime

⁷⁴ C. R. Anderegg, *Sierra Hotel: Flying Air Force Fighters in the Decade After Vietnam* (Washington, D.C.: Air Force History and Museums Program, 2001), 89–94.

⁷⁵ Rusing, “Prepare the Fighter Force - Red Flag/Composite Force,” 21.

⁷⁶ Maj Timothy J. Brannan, “TAC’s New Flag,” *USAF Fighter Weapons Review* 33, no. 2 (Summer 1985): 21–23.

⁷⁷ Slife, *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984*, 53.

⁷⁸ *Ibid.*, 54-55.

⁷⁹ Capt Thomas J. Norton, “Blue Flag,” *Air University Review* 30, no. 2 (February 1979): 40–41.

responsibilities for the defense of Western Europe. As the Air Force transitioned from the tactical air control center concept to a much more expansive theater-level air operations center in the mid-1980s, BLUE FLAG became the Air Force's air operations center staff training program.⁸⁰

BLUE FLAG was the Air Force's only exercise program at the operational level of war, and the only one in the Department of Defense until 1988. The Navy and Marine Corps started participating in BLUE FLAG when it became a training exercise for the Defense Department's nascent Rapid Deployment Joint Task Force in 1980.⁸¹ By the early 1980s, the live sorties had ended, with the focus shifting entirely to training the air operations center staff. By the mid-1980s, a year of exercises for the BLUE FLAG trainers included one of the NATO ATAFs, an air operations center from PACAF, and at least one of the air operations centers based in the continental U.S.⁸² Joint participation followed quickly; the theater-level focus of the exercises outstripped the capabilities of the Air Force to replicate those organizations, requiring augmentation from the other services.

The Air Force was also unique in being at the time the only service to train and educate specifically to theater-level warfare. The two courses, part of the education mission that distinguished CADRE from the original Center for Aerospace Research and Doctrine proposal,

⁸⁰ John W. Drain, e-mail to author, March 16, 2012. Drain, a retired U.S. Air Force officer at the 505th Combat Training Squadron (which currently administers BLUE FLAG), participated in several exercises during the period, including a 1982 BLUE FLAG rotation, and served three years on the 4ATAF staff afterwards.

⁸¹ 4441st Tactical Training Group, *Final Report, BLUE FLAG 80-3* (U.S. Air Force Tactical Air Warfare Center, 1980), Operational Records, 505th Combat Training Squadron, Eglin AFB, Fla.

⁸² John W. Drain, email to author. Initial exercises trained 2ATAF and 4ATAF, but included 5ATAF, from Dal Molin Air Base, Vicenza, Italy, starting with BLUE FLAG 80-4 in September 1980. 4441st Tactical Training Group, *Final Report, BLUE FLAG 80-4* (U.S. Air Force Tactical Air Warfare Center, 1980), Operational Records, 505th Combat Training Squadron, Eglin AFB, Fla.

taught skills at very different levels and saw equally different levels of acceptance from the Air Force.⁸³

The Combined Air Warfare Course (CAWC) began operations in 1977 at the direction of General David C. Jones, Air Force Chief of Staff. The objective of CAWC, originally a part of the Air War College curriculum, was to “educate officers in the art of directing, supporting, and executing joint or combined theater air warfare.” The four-week course focused specifically on the role of an air component at the theater level, and covered theater-level command and control, doctrine, intelligence, and force employment characteristics.⁸⁴ The nature of those responsibilities necessarily limited attendance at CAWC to those few with the prerequisite knowledge for its advanced subject matter; its original offering by the Air War College, a course attended entirely by colonels and lieutenant colonels, was an indicator of the level of background required. The course culminated in a theater war exercise, in which students synthesized U.S. and Soviet doctrine and a notional joint force commander’s guidance in simulation to produce a COMAAFCE-level air directive, as well as ATAF-level air tasking orders for tactical direction in the exercise.⁸⁵ While the term “operational art” did not formally exist in Air Force doctrine, CAWC was most certainly a course that taught both its theory and practice.⁸⁶

⁸³ The other course at the time was the Joint Flag Officer Warfighting Course, intended for generals and admirals.

⁸⁴ Combat Employment Institute catalog, Center for Aerospace Doctrine, Research, and Education, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1989, volume 2” (Air University, 1990), Combat Employment Institute pamphlet, IRIS 1099606, Air Force Historical Research Activity.

⁸⁵ Air War College, Curriculum Plan FY 95 Combined Air Warfare Course, in Center for Aerospace Doctrine, Research, and Education and Bernard D. Claxton, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1985” (Air University, 1986), Appendix G, 17-19, IRIS 1081620, Air Force Historical Research Activity.

⁸⁶ The first mention of “aerospace operational art” appeared in the 1992 edition of AFM 1-1. A 1989 draft contains the term, but did not circulate outside CADRE. Airpower Research Institute, Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force (Draft)* (Maxwell Air Force Base, Ala.: Center for Aerospace Doctrine, Research, and Education, January 1990), 3-1 - 3-2, in Center for Aerospace Doctrine, Research, and Education, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1989, volume 1” (Air University, 1990), SD-4, IRIS 1099605, Air Force Historical Research Activity.

The second course, the Contingency Warfare Planning Course (CWPC), was a specific response to a MAJCOM need for trained planners to support Joint Chiefs of Staff requirements under PPBS and the Joint Operation Planning System (JOPS). The CWPC centralized instruction for joint planners, rather than forcing the MAJCOMs to train those planners on the job.⁸⁷ Unlike CAWC, the three-week CWPC focused on providing “a broad conceptual overview of current politics, practices, and procedures involved in contingency wartime planning” to an impossibly broad spread of student ranks from sergeant to lieutenant colonel.⁸⁸ Rather than the instruction in the theory and practice of operational art at CAWC, the CWPC taught only its execution.

The different reception the two courses received provides a window to the Air Force’s cultural views regarding operational warfare. Owing to its anticipated student base, far larger scope, and shorter length, CWPC was little more than a training course. However, the MAJCOMs that both courses served regularly filled their CWPC quotas, while CAWC suffered from poor attendance, even cancelling a course in 1990 due to lack of interest from the field. Finally, the budget cuts that came at the end of the Cold War finally killed CAWC, resulting in permanent cancellation of the course in 1991.⁸⁹

While no explanation of the relative success of the two courses appears in any of the organizational histories, the treatment of the two courses’ subject matter reflected a cultural bias towards training, which CWPC filled ably. Even if the Air Force’s squadron and wing

⁸⁷ Headquarters, United States Air Force, memorandum to AUCADRE, “Release of Planning Data to Air Force Contingency Wartime Planning Course (CWPC),” November 5, 1988, in Center for Aerospace Doctrine, Research, and Education, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1989, volume 3” (Air University, 1990), SD-125, IRIS 1099607, Air Force Historical Research Activity.

⁸⁸ Center for Aerospace Doctrine, Research, and Education, *CADRE History 1986*, 20.

⁸⁹ Center for Aerospace Doctrine, Research, and Education and Allen N. Striepe, “History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1990, volume 1” (Air University, 1991), 6-7, IRIS 1115446, Air Force Historical Research Activity.

commanders had been interested in its basic doctrine, the notion of theater-level warfare, let alone the concept of operational art, was an abstraction that mattered little to them. Commanders were generally willing to send a planner to learn how to manage the form of tactical conduct of theater warfare in CWPC, but not the more abstract underlying grammar of theater-level air component planning taught in CAWC. The tactical myopia that had plagued the Air Force remained. As Drew notes that most Air Force officers in the 1980s did not think much beyond tactics in the TAF, and even so-called “strategic” warfare had become exclusively tactical in character due to the highly technical demands of nuclear weapons delivery. In August 1988, a book appeared that caused airmen to think about something outside the cockpit.⁹⁰

John Warden and *The Air Campaign*

Aside from the classical air power theorists, relatively little literature exists on air power theory unrelated to nuclear warfare, and even less on the grammar of operational warfare, let alone operational art. David Mets, a professor emeritus at SAAS, has identified John A. Warden III, a fighter pilot and Vietnam veteran, as the latest of the truly influential air power theorists.⁹¹ Warden’s most significant exploration of operational art was a 1988 book *The Air Campaign: Planning for Combat*, which he wrote as a student in the class of 1986 at the National War College (NWC) at Fort McNair, Washington D.C. By that time, the attention paid to operational art in the wake of the 1982 edition of the Army’s FM 100-5 had spread outside the Army. The NWC commandant, Major General Perry M. Smith, had just departed the Air Staff as the assistant Deputy Chief of Staff for Plans and was one of the few general officers with strong

⁹⁰ Drew, interview, March 6, 2012.

⁹¹ David R. Mets, *The Air Campaign: John Warden and the Classical Airpower Theorists* (Maxwell Air Force Base, Ala.: Air University Press, 1999), 79.

civilian academic credentials. Smith placed significant emphasis on operational art in the NWC curriculum upon his arrival at NWC in 1983.⁹²

The origins of Warden's thesis-turned-book owed partly to his previous experiences in the TAF. In a 1978 war plans assignment at the Air Staff, Warden explored the possibilities for stopping a Soviet attack into Iran using air power alone, a concept that generated substantial opposition within the Air Staff.⁹³ As an assistant director of operations for the 347th Tactical Fighter Wing at Moody AFB, Georgia, Warden recognized that the considerable flying skills among the wing's pilots were meaningless if they collectively could not interpret the air tasking order (ATO), which was the document that actually directed combat flight operations itself. His experience at the wing's 1983 RED FLAG exercise confirmed his belief that the Air Force was too narrowly focused on tactics and was not preparing sufficiently for the demands of operational warfare.⁹⁴ Instead, he saw the Air Force split between the relative inutility of SAC's nuclear weapons and TAC's support of land forces, where "the proper application of air power was simply to turn on the sortie generation fire hose... and just keep it going at the highest rate that you could sustain for some reasonable period of time."⁹⁵

Warden approached air campaign planning at the operational level of war, with the intent of developing "a philosophical and theoretical framework for conceptualizing, planning, and executing an air campaign."⁹⁶ In identifying four commonly acknowledged levels of war, the

⁹² John Andreas Olsen, *John Warden and the Renaissance of American Air Power* (Washington, D.C.: Potomac Books, 2007), 64.

⁹³ Col John A. Warden, "DESERT STORY Oral History Interview," interview by Lt Col Suzanne Gehri, Lt Col Edward Mann, and Lt Col Richard Reynolds, May 30, 1991, 39–40, IRIS 0876324, Air Force Historical Research Activity.

⁹⁴ Olsen, *John Warden and the Renaissance of American Air Power*, 47-48.

⁹⁵ Col (Ret) John A. Warden, interview by author, March 6, 2012, notes and recording in author's possession.

⁹⁶ Lt Col John A. Warden, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988), xix. His thesis advisor, Colonel Michael Krause, U.S. Army, was one of the editors of the U.S. Army Center of Military History's first collection of writings on operational art in 1994.

grand strategic, strategic, operational, and tactical, Warden asserted that the operational level was least understood and lacked a coherent doctrine. To each of those levels of war, Warden attributed one or more centers of gravity, a construct originating in Carl von Clausewitz's *On War*. Attack or neutralization of that center of gravity could generate decisive outcomes.⁹⁷

Warden's theory of attacking an operational center of gravity outlined three basic combat missions for air power: air superiority, interdiction, and close air support. Warden heavily favored the offense in operational warfare, with air superiority as a necessity for all other missions.⁹⁸ For Warden, interdiction was any mission directed against enemy forces behind a front, whether distant, intermediate, or close.⁹⁹ Such a definition included what most airmen had come to call "strategic attack," although most airmen tended to equate "strategic" with "nuclear," which was not part of Warden's definition. Warden described CAS as a cost to be borne by an air commander, due to his necessary subordination to a ground commander and the loss of theater-level effectiveness.¹⁰⁰ Such a view, of course, ran counter to the beliefs of many senior leaders in the TAF such as Creech who supported AirLand Battle.

One of Warden's critiques of AirLand Battle was its focus on Army corps commanders, not on the theater-level warfare he saw as the appropriate echelon for operational art.¹⁰¹ The TAF's own focus on the Army corps stemmed from its focus on air interdiction and the doctrine in ATP-27(B) that effectively localized air planning and execution to the ATAF level. The underlying logic was that decisive military action was dependent on the actions of a ground force commander to achieve termination objectives. Instead, Warden's fundamental premise in *The Air Campaign* was that a single arm, specifically air power, could be a decisive arm requiring

⁹⁷ Ibid., 9-12.

⁹⁸ Ibid., 53-58.

⁹⁹ Ibid., 94-99.

¹⁰⁰ Ibid., 103-104, 113.

¹⁰¹ Warden, interview, March 6, 2012.

support from other arms, and in some cases, could even achieve the termination objectives for a campaign on its own.¹⁰²

In exploring the role of air power in operational art, Warden explicitly avoided two topics. The first was tactics, partly to avoid dating his book with discussions of technology, but also to “avoid disputes over doctrine that are common in many air forces.” The second was nuclear weapons. Warden considered the employment of nuclear weapons as so strategically unpredictable that operational art effectively did not apply. The generalized destruction inherent to nuclear weapons or the ramifications of their use left little latitude for operational commanders to do much other than oversee tactical delivery.¹⁰³ As a result, *The Air Campaign* was neither too detailed nor so abstract that it was unusable, making it an eminently readable text on theater air warfare. The text also gained two advocates who were crucially important in its wide reach.

The first supporter was Smith himself, who read many of his students’ papers, and after reading *The Air Campaign* manuscript, said “We have *got* to publish this. This is more than just a regular research paper. This is an important piece of work.” Smith helped in getting the National Defense University Press to be the first to publish *The Air Campaign*. Several years later, Smith encouraged Warden to seek commercial publication, resulting in a connection with Brassey’s, an established publisher specializing in military topics.¹⁰⁴

Warden’s second advocate was General Charles L. Donnelly Jr., the COMAAFCE and USAFE commander. Donnelly, having observed Warden in previous assignments at the Air Staff and in a previous command within USAFE, already knew Warden. Furthermore, Donnelly was a proponent of the operational employment of air power, and thought along the same lines as

¹⁰² Warden, *The Air Campaign*, 11-12.

¹⁰³ *Ibid.*, xvii-xviii.

¹⁰⁴ Maj Gen (Ret) Perry M. Smith, “DESERT STORY Oral Interview with Major General Perry M. Smith,” interview by Suzanne Gehri and Richard Reynolds, June 18, 1992, 3–4, IRIS 00876314, Air Force Historical Research Activity.

Warden, stressing the potential for air superiority to be “thought of as a theater-level campaign in and of itself.”¹⁰⁵ Donnelly regarded *The Air Campaign* so highly that he wrote its introduction:

This book is the start of something very important-it integrates historical experience into a clear, visionary set of conclusions and guidelines for using air forces to achieve strategic goals in a war. This book is exceptional, because it is the first book that thoroughly covers the area between the selection of national objectives and tactical execution at the wing and squadron operations levels.¹⁰⁶

Endorsements aside, Mets has observed that Warden’s thought was actually consistent with Mitchell, Trenchard, and the ACTS theorists’ assertions on the control of all air power in a theater of operations under a single airman. What made *The Air Campaign* so groundbreaking was its causal linkage of air operations directly to the strategic objectives of a theater commander. In essence, Warden presented an argument for prosecuting the Air Force’s so-called “strategic attack” mission through non-nuclear means, using the same logical foundations as the aforementioned air power theorists.¹⁰⁷

While there was much to recommend *The Air Campaign*, Warden inevitably drew criticism for some of his assertions. One was an overly optimistic view of air power’s ability to gain decisive outcomes, particularly in his description of the offensive.¹⁰⁸ Indeed, the title of the book itself reflects this fundamental belief, since an “air campaign” itself implies responsibility for termination objectives.¹⁰⁹ Warden also downplayed the role that friction (in the Clausewitzian sense of the term) plays in operational warfare on the basis that air power could generate sufficiently accurate (if not perfect) intelligence that would enable the employment of

¹⁰⁵ Gen Charles L. Donnelly Jr., “A Theater-Level View of Air Power,” *Airpower Journal* 1, no. 1 (Summer 1987): 5.

¹⁰⁶ Olsen, *John Warden and the Renaissance of American Air Power*, 81-82. Warden, *The Air Campaign*, xxiii. A brief overview of Donnelly’s thoughts on the operational responsibilities of an air component commander at the theater level appears in Gen Charles L. Donnelly Jr., “The Air Commander’s View,” in *On Operational Art*, ed. Clayton R. Newell and Michael D. Krause (Washington, D.C.: G.P.O., 1994), 113-117.

¹⁰⁷ Mets, *The Air Campaign: John Warden and the Classical Airpower Theorists*, 58-62.

¹⁰⁸ Warden, *The Air Campaign*, 39-46.

¹⁰⁹ For the same reason, similar abuses such as “ground campaign,” “maritime campaign,” and “information operation campaign” are equally misleading and misrepresent the capabilities of their domains.

air power as a single decisive arm. Finally, Warden's education as a political scientist showed in his selection of case studies, which served to support his generalization of principles. Examples that might refute his theoretical generalizations are conspicuously absent from the text.

Nonetheless, Warden was enormously influential, as *The Air Campaign* was the first work to synthesize many of the elements of operational art into terms readily grasped by airmen.¹¹⁰ After its publication, Lieutenant General Michael J. Dugan, the Air Staff's Deputy Chief of Staff for Plans and Operations, distributed copies of the book to every member of his directorate.¹¹¹ However, other airmen were starting to write on operational art as well.

Introducing Operational Art to the Air Force

By the late 1980s, operational art, especially after its first official mention in the 1986 FM 100-5, became a fashionable topic even in the Air Force.¹¹² *Air University Review* ceased publication in February 1987 due to budget cutbacks. A desperate effort at CADRE to develop an alternative resulted in the establishment of a new Air Force official journal called *Airpower Journal*, focused specifically on the operational level of war.¹¹³ The new focus was readily apparent at the outset, with Air Force Chief of Staff Larry D. Welch's pronouncement that the journal's focus was on the "operational art of war," and Donnelly's own address to NWC on the same subject.¹¹⁴

In the absence of an Air Force doctrinal definition of the term, however, most of the treatments of operational art came from professional military education establishments. Some

¹¹⁰ Olsen, *John Warden and the Renaissance of American Air Power*, 77.

¹¹¹ Warden, "DESERT STORY Oral History Interview," 63, May 30, 1991.

¹¹² Gen Larry D. Welch, "A Message from the Chief of Staff," *Airpower Journal* 1, no. 1 (Summer 1987): 2; Donnelly, "A Theater-Level View of Air Power," 3–4.

¹¹³ Dennis M. Drew, letter to Mr. Benjamin F. Schemmer, December 12, 1986, in Center for Aerospace Doctrine, Research, and Education, *CADRE History 1986*, SD-72.

¹¹⁴ Donnelly, "A Theater-Level View of Air Power."

early explorations were just that, explorations that confused more than clarified, but quickly gave way to far more substantive treatments of the discipline.¹¹⁵ Operational art figured in historical articles on air power in the *Airpower Journal*, most notably among them Major Charles M. Westenhoff's "Aggressive Vision," about General George C. Kenney and the 5th Air Force in the Southwest Pacific Area during World War II.¹¹⁶ Amongst the frequent contributors was Lieutenant Colonel Price T. Bingham, the chief of the current doctrine at CADRE, who started to articulate some of the practical requirements for air power in operational art, such as forward basing and the command and control of theater-level tactical aviation.¹¹⁷ Bingham was one of the few to give academic rigor to the debate raging over AirLand Battle, air interdiction, and close air support.¹¹⁸

The level of intellectual rigor within the Air Force and particularly at Maxwell by the late 1980s had improved from the "aerospace wilderness" that Drew had once described. The majority of the authors on operational art at the time, such as Bingham and Westenhoff, were assigned to CADRE, which had become the focal point for much of the Air Force's academic research and conceptual work. This activity applied even for equities nominally held by others, as was the case for AFM 1-1.

The revision of AFM 1-1, which XOXID began almost immediately after the previous edition's approval in 1984 had stalled, largely because of the nonconcurrences by reviewers at

¹¹⁵ An example of the former comes from the commander of the National Defense University, who conflated large-unit tactics and operational art in Lt Gen Bradley C. Hosmer, "American Air Power and Grand Tactics," *Airpower Journal* 1, no. 1 (Summer 1987): 9–14. An example of the latter comes from one of Hosmer's subordinates at the Armed Forces Staff College in Possehl, "To Fly and Fight at the Operational Level," 20–28.

¹¹⁶ Lt Col Charles M. Westenhoff, "Aggressive Vision," *Airpower Journal* 3, no. 3 (Fall 1989): 34–49.

¹¹⁷ Lt Col Price T. Bingham, "Operational Art and Aircraft Runway Requirements," *Airpower Journal* 2, no. 3 (Fall 1988): 52–69. Lt Col Price T. Bingham, "Air Interdiction: Some Doubts Concerning Colonel Krieger's Proposal," *Airpower Journal* 3, no. 3 (Fall 1989): 86–89.

¹¹⁸ Lt Col Price T. Bingham, *Air Power and the Defeat of a Warsaw Pact Offensive: Taking A Different Approach to Air Interdiction in NATO* (Maxwell Air Force Base, Ala.: Air University Press, 1987). Lt Col Price T. Bingham, *Ground Maneuver and Air Interdiction in the Operational Art* (Maxwell Air Force Base, Ala.: Air University Press, 1989).

the Airpower Research Institute (ARI), a subordinate division of CADRE. The ARI analysts, as well as others outside Air University such as Fabyanic (who was principally responsible for establishing ARI in 1980), had raised objections to the draft's absence of a general view of air power outside of the traditional focuses on conflict with the Soviets. Another point of contention were several unsubstantiated assertions in the manual, among them that "aerospace power can be the decisive force in warfare," and characterizing aerospace forces as "survivable" and having "presence."¹¹⁹ By December 1987, Air Staff intransigence on substantively changing the AFM 1-1 draft led the officers at ARI to initiate their own draft. Drew, the ARI director, had gained the confidence of Lieutenant General Truman Spangrud, Air University commandant and Welch's classmate at NWC in 1972. Spangrud successfully proposed to Welch that CADRE write the new AFM 1-1, which virtually assured approval since Welch had direct command authority over the doctrine writers at XOXID.¹²⁰ The first draft AFM 1-1 was slated for summer 1990, with final approval authorities resting at the Air Staff.¹²¹ What made the CADRE draft of AFM 1-1 different was its format, encompassing two volumes. The first volume was a précis of the underpinnings of air power and its fundamental roles and missions. However, the second volume was far larger, because it was ARI's attempt to conclusively address the unsubstantiated assertions that had appeared in previous editions of AFM 1-1. As a result, the authors who wrote portions of the first volume were also responsible for the 24 corresponding essays of the second volume, which would contain the justifications for the first volume's assertions.¹²²

¹¹⁹ Dembosky, "Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992," 67-80. Department of the Air Force, *AFM 1-1 (1984)*, 1-3, 2-3.

¹²⁰ Jones, *Development of Air Force Basic Doctrine, 1947-1992*, 23-24.

¹²¹ Dennis M. Drew, trip report, March 7, 1988, in Center for Aerospace Doctrine, Research, and Education, "History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1988, volume 2" (Air University, 1990), SD-70, IRIS 1098954, Air Force Historical Research Activity.

¹²² Airpower Research Institute, Air Force Manual 1-1, *Basic Aerospace Doctrine of the United States Air Force (Draft)*, v.

In January 1990, Lieutenant General Charles G. Boyd succeeded Spangrud at Air University. The doctrine writers at ARI approached his arrival with some trepidation as Boyd had just come from the Air Staff, and had been closely involved with the Air Staff doctrine writers working on the AFM 1-1 rewrite within his former directorate. However, Boyd, had come to recognize that “doctrine could only be produced at a place such as Air University, away from the political buffeting of the Pentagon, in a place conducive to the contemplative life.” The transfer of authorship to CADRE was complete by summer 1990, after which time the Air Staff was effectively out of the business of writing basic or operational doctrine.¹²³

A More Capable, but Still Disunified Air Force

From Vietnam to the end of the Cold War, the Air Force made substantial improvements in its ability to educate, train, and conduct virtually all of its assigned missions. Those improvements were far-reaching in their effects, particularly for the TAF, but also made the Air Force a more broadly capable institution than it was in 1973.

The tactical-level training initiatives that started with RED FLAG and spread to its outgrowths had the greatest immediate effect on the capability of the Air Force to conduct combat operations, and with it, the mechanics of the delivery of air power below the operational level of war. The BLUE FLAG exercises were the sole instrument of training the force at the operational level of war. The courses on operational warfare offered by CADRE were effectively the sole instrument of training (in the case of CWPC) or educating (in the case of CAWC) individuals. Those were all necessary courses in teaching the operational level of war.

¹²³ The process by which the Air Staff and CADRE fought for primacy of the AFM 1-1 rewrite appears in Jones, *Development of Air Force Basic Doctrine, 1947-1992*, 27-30. Warden, interview, March 6, 2012. At the time, Warden was the director of the Warfighting Doctrine and Concepts Division (XOXW), which had oversight of the doctrine office, which had changed office symbols from XOXID to XOXWD.

The institutions for teaching the theory and practice of operational art were the only way that the Air Force could address the gaping void in its operational doctrine, one that TACM 2-1 very imperfectly attempted to bridge.

The Air Force's basic doctrine, however, made marked leaps forward after the nadir that was the 1979 "cartoon version" AFM 1-1. Institutions such as ARI and later, CADRE became the Air Force's insurance policy against the tactical focus on flying that existed in the TAF's fighter wings and squadrons, as well as the "tactical" focus on fighting the budgetary battles in the PPBS system in the Pentagon. If the institutions charged with doing the thinking and writing for the Air Force could gain separation from the most immediate concerns of combat and the budget, the Air Force could move beyond the gross weaknesses in its basic and operational doctrine. Implicit to that was the talent that had been had also achieved some success in building the intellectual institutions necessary to develop, educate, and train the practice of operational art.

John Warden's *The Air Campaign* remains one of the few monographs on the operational employment of air power.¹²⁴ Its remarkably clear prose and its introduction of a previously barren subject for airmen was a watershed for thought on the role of air power in operational art. The changes in focus from *Air University Review* to *Airpower Journal* also put official sanction onto the explorations of operational art that were starting to happen in the force.

What remained elusive was a unified theory of air power. In the absence of that, the attempts to rewrite AFM 1-1 stood little chance of serving as a single vision of what air power was supposed to accomplish. One conflict that was not immediately apparent was the emergence of a divide between senior TAC leaders such as Creech, who saw the TAF as an inextricable part

¹²⁴ The most influential countervailing view to Warden's work on air campaigning appears in Robert Anthony Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996).

of a larger joint force, and the ideas espoused in *The Air Campaign* that implicitly argued for a degree of autonomy for air power that was at odds with what the TAC generals desired.¹²⁵ A unified theory of air power, if commonly accepted, would have been a vehicle for healing the rifts within the Air Force. The work that Drew, Bingham, and others at ARI did on their proposed second volume of AFM 1-1 was an attempt to do exactly that.

All of the work on AFM 1-1, as substantive as it was, did not address the absence of Air Force operational doctrine. In a 1988 memo, Drew was emphatic that only after AFM 1-1 was finished would CADRE take on a sequel to the long-obsolete AFM 2-1.¹²⁶ To address operational warfare without resolving more fundamental issues over roles and missions was premature if not dangerous, and as of August 1990, AFM 1-1 was not yet complete. Doctrine development would have to wait as events in Southwest Asia that month caused the American military to turn its attentions away from the Soviet threat it had expected to fight.

¹²⁵ I am indebted to Colonel Michael “Meter” Kometer of the School of Advanced Air and Space Studies for this observation.

¹²⁶ Dennis M. Drew, trip report, March 7, 1988, in Center for Aerospace Doctrine, Research, and Education, *CADRE History 1988, volume 2*, SD-70.

Chapter 7

Operation DESERT STORM and its Discrete Schools of Operational Art

This sanitized, didactic, almost mythological blitzkrieg/RMA/transformation narrative has been interjected into virtually every military reform debate in the last four decades, from discussions of Marine Corps doctrine to which fighters the Air Force should purchase. It has caused numerous unanticipated consequences, not least the fact that it may have led some U.S. senior commanders unknowingly to repeat what historians have identified as a major mistake in the “German way of war”: that is, fixating on tactics and operations while failing to consider how individually successful battles and campaigns will achieve the nation's war aims (or strategy). This fascination with rapid maneuvers, tactics, and battles was compounded when the blitzkrieg of 1940 was apparently replayed in the Gulf War of 1990 to 1991.

Brian McAllister Linn¹

The Persian Gulf conflict of 1990-1991 marked the first campaign involving the entire defense establishment after the passage of the Goldwater-Nichols Act. While Operation JUST CAUSE in Panama in December 1990 had been the first combat operation executed after Goldwater-Nichols, the duration and scope of the mission precluded full involvement by USTRANSCOM, which was still in the process of activation. Nine months later, the Department of Defense faced a far larger challenge in Operations DESERT SHIELD and DESERT STORM.

The centerpiece of operational art during DESERT STORM was the unified employment of all the services during the campaign to achieve those objectives, the effectiveness of which varied during the campaign. The improvements in doctrine, training and equipment within the Army, Air Force, and the Marine Corps after Vietnam dramatically improved the tactical capabilities of the force, a transformation that has been well chronicled in the literature on the war. More important, the Persian Gulf conflict showcased the tremendous improvements the

¹ Brian McAllister Linn, “The U.S. Armed Forces’ View of War,” *Daedalus* 140, no. 3 (Summer 2011): 36.

joint force had made in projecting power, as well as coordinating the efforts of the different forces participating in the conflict.

Although those innovations were important in establishing a precedent for the conduct of joint campaigning, the absence of any substantive joint doctrine resulted in several processes being established during the conflict itself that produced substantial friction among the services. What was missing was authoritative direction from a joint force commander to unify the activities of his component commanders in their air, land, and sea domains. The considerable friction involved in the conduct of operational art was not fatal to the Coalition's war effort, given abysmal Iraqi strategic and tactical performance during the conflict, but certainly left much room for improvement.

Changing the Joint Institutions

The Department of Defense undertook substantial reforms to improve its ability to deploy forces after the 1978 NIFTY NUGGET and 1980 PROUD SPIRIT exercises. Both of those exercises revealed gross failures in the ability of both military and civilian institutions to project and sustain deployed combat forces, not only in terms of their movement into a combat theater, but also the supplies necessary to prevent culmination of those forces once joined to combat.

Two recommendations emerged from NIFTY NUGGET, the first of which was the establishment of a single manager for joint deployment activities in 1979, in the form of the Joint Deployment Agency (JDA), part of U.S. Readiness Command at MacDill Air Force Base (AFB), Florida. The second recommendation, that the services' Transportation Operating Agencies (TOA) should have a direct reporting chain to the Joint Chiefs of Staff (JCS), stemmed from the authorities and structure in place to conduct such strategic deployments. The TOAs operated

under the direction of their service staffs, and while JDA had the responsibility for coordinating deployment actions among the TOAs, it had no authority to direct either the TOAs or the unified combatant commands in those deployments.²

Several attempts in the 1980s to establish a unified combatant commander for deployment functions had stalled, primarily due to bitter opposition by Secretary of the Navy John F. Lehman. However, owing largely to the recommendation of the President's Blue Ribbon Commission on Defense Management (often known as the Packard Commission for its chair, Mr. David Packard) and the work of Admiral William J. Crowe, Chairman of the JCS and National Security Advisor Frank C. Carlucci III, the U.S. Transportation Command (USTRANSCOM) was established on April 15, 1987. Replacing the old JDA, USTRANSCOM provided a single focal point for all deployment actions throughout the Department of Defense.³ Many of the problems from the NIFTY NUGGET exercise resulted from the absence of a single entity empowered to orchestrate the transportation efforts of all the services in managing deployment assets. The establishment of a combatant commander with the authority to direct the process through the TOAs was a critical first step to resolving those problems.

Initial Campaign Planning for the Theater: DESERT SHIELD

Deploying troops to the Arabian Peninsula, of course, could not occur without a policy statement authorizing their commitment. The termination criteria for Operation DESERT SHIELD and DESERT STORM drew from United Nations Security Resolutions (UNSCR) 660

² James K. Matthews and Cora J. Holt, *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Desert Storm* (Washington, D.C.: Research Center, United States Transportation Command and Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 1996), 2; Danita L. Hunter, *United States Transportation Command: 10 Years of Excellence, 1987-1997*. (Scott Air Force Base, Ill.: U.S. Transportation Command, 1997), 8.

³ Andrew E. Gibson and William M. Calhoun, "Barely in Time: The Successful Struggle to Create the Transportation Command," *Naval War College Review* XLIII, no. 4 (Autumn 1990): 74-80.

and 662, which provided a basis in customary international law for multilateral military action in the Persian Gulf region. That guidance became U.S. policy with President George H. W. Bush's approval of National Security Directive (NSD) 45 on August 20, 1990, which contained four objectives:

- the immediate, complete and unconditional withdrawal of all Iraqi forces from Kuwait;
- the restoration of Kuwait's legitimate government to replace the puppet regime installed by Iraq;
- a commitment to the security and stability of the Persian Gulf; and,
- the protection of the lives of American citizens abroad.

Planners at USCENTCOM began developing options for the use of military force to achieve the policy objectives in NSD-45, using the existing USCENTCOM Operation Plan (OPLAN) 1002-90, *Defense of the Arabian Peninsula*, which was originally oriented on a potential Soviet invasion through Iran. In 1989, Secretary of Defense Richard B. Cheney had directed that USCENTCOM rewrite OPLAN 1002-90 for an Iraqi threat, and it became USCENTCOM's highest priority for planning. The USCENTCOM staff produced a first draft Concept of Operations by April 16, 1990, with a second draft on July 18, 1990 under a new name, *Operations to Counter an Intraregional Threat to the Arabian Peninsula*. Within the Defense Department's Joint Operations Planning System (JOPS), an OPLAN required Time Phased Force Deployment Data (TPFDD) to designate and sequence the units apportioned to the plan, which USCENTCOM had originally anticipated developing in February 1991.⁴ The invasion of Kuwait disrupted that timetable and resulted in a TPFDD being built as the crisis unfolded. Nonetheless, much of the previous work done on OPLAN 1002-90, to include a preliminary rehearsal in a USCENTCOM command post exercise called INTERNAL LOOK 90,

⁴ Eliot A. Cohen, *Gulf War Air Power Survey: Volume 1: Part 1: Planning Report* (Washington: G.P.O., 1993), 27–31. The term TPFDD (pronounced “tip-fid”) is not technically a standalone document, but generally refers to the documentation that directs units to deploy at a given time in response to a war plan. Although the list of forces deploying is more formally a Time-Phase Force Deployment List (TPFDL, pronounced “tip-fiddle”), it is a subset of TPFDD.

provided the initial basis for an offensive campaign already provisionally titled DESERT STORM.⁵

The immediate concern for planners, beginning on August 7, 1990, was Operation DESERT SHIELD, the defense of Saudi Arabia. The directive for DESERT SHIELD was approved on August 20, 1990 as CINCCENT Operations Order (OPORD) 003. Drawing from OPLAN 1002-90, CINCCENT OPORD 003 was an interim combined defense plan, envisioning a forward defense of Saudi Arabia and a subsequent delay - not unlike what forces in Europe had been preparing to do for decades.⁶ That plan, while incorporating Saudi input, was marked as NOFORN, meaning “not releasable to foreign nationals,” which allowed planners the latitude to develop the objectives and concepts of operation unilaterally, thereby accelerating the process for developing and gaining approval for the order. A later version, published as Combined OPORD 004, was releasable to the coalition, and formed the basis for the Combined OPLAN for the Defense of Saudi Arabia, which went to coalition staffs on November 29, 1990. The Combined OPLAN was intended for planning purposes only, and execution of the plan would have required another directive, as was the case for DESERT STORM.⁷ However, the elements of the DESERT STORM plan came from a much more diverse parentage than did its predecessor.

The Air Campaign within the Campaign

⁵ Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress* (Washington, D.C.: G.P.O., 1992), 350–352. Cohen, *GWAPS Volume 1, Part 1*, 41–54. The operation’s title was a veiled homage to AUGUST STORM, the name of the Soviet 1945 campaign in Manchuria, in which the Soviets skillfully used surprise, bold maneuver, deep penetrations, and rapid attacks to dislocate and decisively defeat the Japanese defenders. The CENTCOM planners envisioned the same emphases in their initial campaign plan. Jacob W. Kipp, interview by author, October 3, 2011, notes in author’s possession.

⁶ Cohen, *GWAPS Volume 1, Part 1*, 132.

⁷ *Ibid.*, 132–133. U.S. Central Command and Joint Forces and Theater of Operations, “Combined OPLAN for the Defense of Saudi Arabia” (Joint Directorate of Planning, November 29, 1990), IRIS 0269606, Air Force Historical Research Activity.

Operations DESERT SHIELD and DESERT STORM marked a watershed for the use of airpower in joint campaigning. The planners knew that airpower would comprise most of the available combat forces in the USCENTCOM area of responsibility (AOR) early in DESERT SHIELD until sufficient ground combat forces could close in the AOR. The balance of forces provided air planners an opportunity to exercise airpower as a unified instrument, but highlighted several deep divides among the services and within the Air Force itself.

On August 8, 1990, Schwarzkopf called General John M. Loh, Vice Chief of Staff of the Air Force, stating that “we have a decent plan for air/land operations, but I’m thinking of an air campaign, and I don’t have any expertise—anybody here who can think in those kinds of terms and look at a broader set of targets or a strategic campaign for assistance on developing an air campaign.” Schwarzkopf wanted a deterrent option to attack targets of strategic importance to Saddam Hussein, and wanted one quickly.⁸ Schwarzkopf had already sent Lieutenant General Charles Horner, 9th Air Force and CENTAF commander to Riyadh to command USCENTCOM (Forward) three days prior.⁹ Loh responded that he had a cell that was ready to respond.

Under the direction of Colonel John A. Warden III, the Force Integration Division of the Air Staff’s office of the Deputy Chief of Staff for Plans and Operations, Deputy Directorate for Warfighting Concepts started working the day Horner flew to Riyadh. The cell, informally known as Checkmate, had already earned a reputation in the Air Staff for its effective work on

⁸ Lt Col Richard T. Reynolds, *Heart of the Storm: The Genesis of the Air Campaign Against Iraq* (Maxwell Air Force Base, Ala.: Air University Press, 1995), 24.

⁹ The 9th Air Force was a “numbered Air Force” under the administrative control of Tactical Air Command to administer the Air Force personnel that were intended to populate the CENTAF headquarters. The CENTAF organization itself was an operational headquarters under the combatant command of USCENTCOM, with wartime responsibilities for command and control of Air Force units within the USCENTCOM AOR in peacetime and combat. While the same people were assigned to both headquarters, they had fundamentally different responsibilities, although those responsibilities were not well known.

doctrine and concepts development.¹⁰ Warden was already known for *The Air Campaign*, his National War College thesis, which argued for airpower alone as a decisive instrument of military power.

The Checkmate plan, under the working title of INSTANT THUNDER, was “a *focused, intense* (emphasis in original) air campaign plan to incapacitate Iraqi leadership and destroy key Iraqi military capability, in a *short* period of time.” It was explicitly not “a graduated, long-term campaign plan designed to provide escalation options to counter Iraqi moves.”¹¹ Warden had distilled some unofficial policy goals from President Bush’s speeches and press releases, as well as military objectives to achieve those unofficial policy goals, envisioning a direct tie between air operations and termination criteria.¹²

What made Warden’s approach so different from the traditional view of air operations within the Air Force was the method he took to achieve those objectives.¹³ The basis of Warden’s method was attacking an enemy in depth, but unlike AirLand Battle’s deep attack on military forces and their associated direct support organizations, Warden sought to attack the Iraqi leadership, key industrial infrastructure such as electricity, oil refineries, railroads, and telecommunications facilities, airports, and seaports. The INSTANT THUNDER plan sought to achieve paralysis and dislocation, rather than destruction, by attacking what he termed “strategic centers of gravity,” over a six-day period. As a result, it did not target Saddam Hussein

¹⁰ John Andreas Olsen, *John Warden and the Renaissance of American Air Power* (Washington, D.C.: Potomac Books, 2007), 114.

¹¹ Deputy Directorate for Warfighting Concepts, “Iraqi Air Campaign INSTANT THUNDER” (Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, August 17, 1990), 2, Operations and Plans, Persian Gulf War, Office of Secretary of Defense/Joint Staff FOIA Library, http://www.dod.mil/pubs/foi/operation_and_plans/PersianGulfWar/651.pdf (accessed April 20, 2012).

¹² Col John A. Warden, “DESERT STORY Oral History Interview,” interview by Lt Col Suzanne Gehri, October 22, 1991, 52–53, IRIS 0876307, Air Force Historical Research Activity.

¹³ The Air Force’s traditional view of air operations in this circumstance was a direct inheritance from General Wilbur Creech and the culture he had built into the Tactical Air Forces (TAF).

specifically for assassination, but did target his command and control facilities.¹⁴ It also ignored any military forces that posed a direct threat to the force building out of Ad Dammam and Dhahran, arguing instead that airpower could render those forces irrelevant.¹⁵ Perhaps most telling, the INSTANT THUNDER proposal envisioned only using Air Force, Navy, and Marine Corps aviation, and the projected Army deployments for the plan were a blank line.¹⁶ INSTANT THUNDER was the apotheosis of Warden’s belief that a single arm could achieve strategic objectives alone.¹⁷

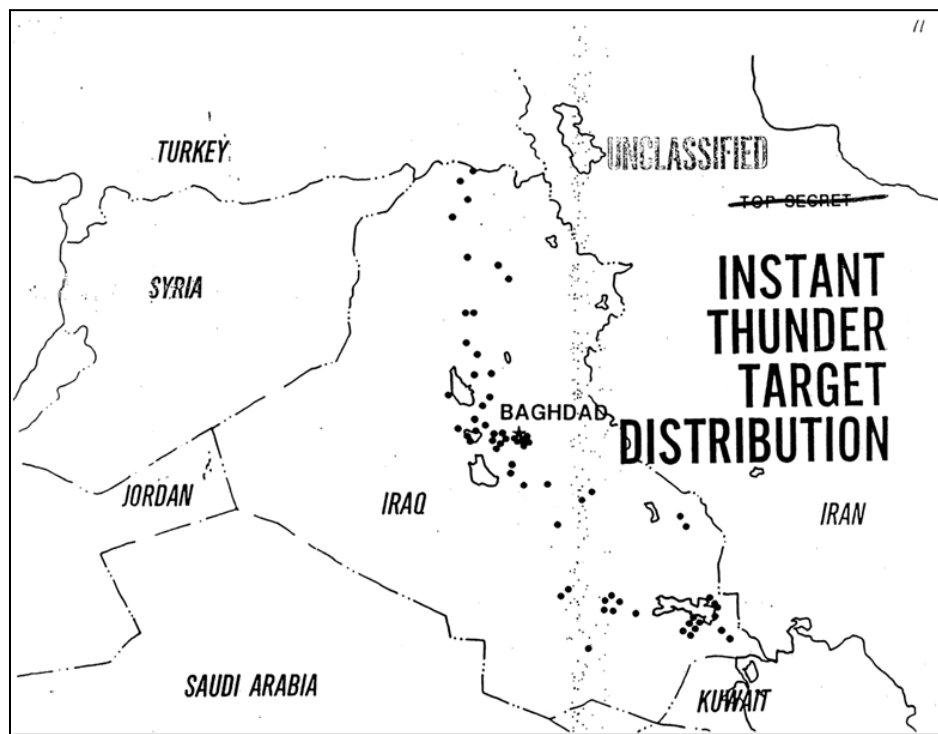


Figure 3: Presentation slide from Warden’s original INSTANT THUNDER plan, showing the locations of the targets that airpower was to attack. Note the absence of targets in Kuwait itself.¹⁸

¹⁴ Olsen, *John Warden and the Renaissance of American Air Power*, 151. While a more comprehensive description of Warden’s theories on attacking strategic centers of gravity is beyond this work, one of the best analyses of Warden’s thoughts on strategic paralysis appears in Maj David S. Fadok, “John Boyd and John Warden: Airpower’s Quest for Strategic Paralysis” (Master’s thesis, Maxwell Air Force Base, Ala.: School of Advanced Airpower Studies, 1995).

¹⁵ Deputy Directorate for Warfighting Concepts, “INSTANT THUNDER briefing slides,” 6–14. See also Olsen, *John Warden and the Renaissance of American Air Power*, 156.

¹⁶ Deputy Directorate for Warfighting Concepts, “INSTANT THUNDER briefing slides,” 32–34.

¹⁷ Lt Col John A. Warden, *The Air Campaign: Planning for Combat* (Washington, D.C.: National Defense University Press, 1988), 11–12.

¹⁸ Deputy Directorate for Warfighting Concepts, “INSTANT THUNDER briefing slides,” 11.

The view of airpower alone as a decisive arm was anathema to much of the senior leadership within the Tactical Air Forces (TAF), among them Horner, Lieutenant General Jimmie Adams, the Air Staff's Deputy Chief of Staff for Plans and Operations, and General Robert D. Russ, commander of Tactical Air Command (TAC). They were protégés of General Wilbur L. Creech, who commanded TAC from 1978 to 1984 and was one of the biggest proponents of AirLand Battle. If anyone been the godfather of the TAF "fighter mafia" in the 1980s, it was undoubtedly Creech. Horner, Russ, and Adams were highly critical of the INSTANT THUNDER plan; like many Vietnam veterans, they were leery of any involvement in campaign planning from Washington. Russ had drawn criticism from other Air Force officers for his statement that tactical airpower's primary role was to support the Army, and Horner, who Russ described as "the premiere tactical warrior," was even more focused on such a role.¹⁹

The equities involved in campaign planning also were a factor. Adams, who also held the position of Joint Staff deputy J-3 for air, believed that nobody in Washington, least of all his own subordinates in Checkmate, had any business doing the air operations planning that was exclusively Horner's domain as the CENTAF commander. Russ held the same belief.²⁰ Although Schwarzkopf was ebullient about the INSTANT THUNDER plan when Warden briefed it at the USCENTCOM headquarters at Tampa on August 17, 1990, that basic difference in philosophy between Warden and the TAF traditionalists came to a head in Horner's stormy reaction to Warden's briefing in Riyadh on August 20.²¹

¹⁹ Gen Robert D. Russ, "DESERT STORY Oral History Interview," interview by Lt Col Suzanne Gehri, Lt Col Richard Reynolds, and Lt Col Edward Mann, December 9, 1991, 23, 28, IRIS 0876307, Air Force Historical Research Activity.

²⁰ Robert D. Russ, "DESERT STORY Oral History Interview," interview by Suzanne Gehri, Richard Reynolds, and Edward Mann, December 9, 1991, 27, IRIS 0876307, Air Force Historical Research Activity. Reynolds, *Heart of the Storm*, 80. John A. Warden, "DESERT STORY Oral History Interview," interview by Suzanne Gehri, Edward Mann, and Richard Reynolds, October 22, 1991, 110, IRIS 0876324, Air Force Historical Research Activity.

²¹ Reynolds, *Heart of the Storm*, 103–110.

To a considerable degree, Horner's animus stemmed from his combat experience in Vietnam and subsequent visceral hatred of anything that remotely smelled like political direction of military operations.²² Horner's Vietnam experience and bias towards the tactical level was at odds with Warden's basic premise that ground forces would become demoralized and quit after attacking their national leadership and industrial support structure. Although Warden tried to convince Horner of the need for a theater campaign plan with airpower as the central instrument, but Horner was not interested in a conceptual document like INSTANT THUNDER and considered that proposal incomplete. Horner, with his USCENCOM (Forward) responsibilities weighing heavily, wanted a directive for execution and specifically, an air tasking order (ATO) to "translate target strategy into an operational plan" sufficiently detailed that he could give it to his subordinate wing commanders for execution.²³ In August 1990, Warden had the right idea, but had the misfortune of presenting to an unreceptive if not hostile audience.

What INSTANT THUNDER did provide was the basis for the first phase of the USCENCOM DESERT STORM offensive campaign plan. Horner retained Lieutenant Colonel David Deptula, Warden's most trusted assistant at Checkmate, and obtained the services of Brigadier General Buster C. Glosson, who until that point had been languishing on the USS *LaSalle* as the deputy commander of Joint Task Force-Middle East, which was conducting maritime interception operations in the Persian Gulf. Glosson became the CENTAF Director of Air Combat Plans on August 19, and pulled Deptula and others with planning experience from the CENTAF staff into a small planning group called the Special Studies Division, which had the responsibility of developing a strategic offensive air campaign against Iraq. Due to the

²² Tom Clancy and Gen Chuck Horner, *Every Man A Tiger* (New York: Putnam, 1999), 85–99.

²³ Lt Gen Charles M. Horner, "DESERT STORY Oral History Interview," interview by Lt Col Suzanne Gehri and Lt Col Richard Reynolds, December 2, 1991, 34–35, IRIS 0876282, Air Force Historical Research Activity.

sensitivity of planning an offensive operation during diplomatic efforts to resolve the situation and assemble the coalition, Glosson's Special Studies Division worked in isolation from the rest of the CENTAF staff, who quickly labeled the group the "Black Hole."²⁴

The process by which the Black Hole planners developed guidance for subordinate forces saw its debut during DESERT STORM. The INSTANT THUNDER concept, in addition to the overarching purpose, mission, objectives, and tasks assigned to airpower, included a target list that parsed the analysis of the Iraqi government and military into discrete parts that could be attacked to accomplish those objectives. The underlying causality for the concept was how attacking those targets might contribute to campaign objectives and ultimately, achieve the joint force commander's termination criteria.²⁵

The Black Hole planners distilled that guidance and target list into a Master Attack Plan (MAP), a document that took broad campaign guidance and provided part of the detail for tactical execution of that guidance. Unlike a more traditional OPORD, the MAP was a list that assigned targets to types of aircraft to attack at a specific time. The MAP also incorporated intelligence updates and battle damage assessments from current operations. However, the MAP did not provide sufficient detail for aircrews to actually fly missions.²⁶ The remainder of that detail for tactical execution of commander's guidance appeared in the ATO, which added the specific mission, the organization that was to fly it, the ordnance and the determined mean points of impact for that ordnance, and coordinating instructions by unit for aerial refueling support for

²⁴ In November 1990, Glosson became commander of the 14th Air Division, which was the administrative headquarters overseeing the Air Force attack and fighter squadrons in the Arabian Peninsula. Maj Gen Buster C. Glosson, "DESERT STORY Oral History Interview," interview by Lt Col Suzanne Gehri, Lt Col Edward Mann, and Lt Col Richard Reynolds, May 29, 1991, 27, IRIS 0876272, Air Force Historical Research Activity. Horner, "DESERT STORY Oral History Interview," 39, December 2, 1991.

²⁵ This process corresponds roughly to the contemporary function of a JFACC strategy division, but the formal development of such structures did not begin until after DESERT STORM.

²⁶ Eliot A. Cohen, *Gulf War Air Power Survey: Volume 1: Part 2: Command and Control Report* (Washington: G.P.O., 1993), 10.

each of those missions to their target locations.²⁷ The difference between the two was one of length and detail. In the meantime, the USCENTCOM planners had been hard at work trying to put together a campaign concept in the event that a strategic air campaign alone did not achieve the termination objectives for the conflict.

Initial Planning for DESERT STORM

The initial DESERT STORM campaign plan concept appeared on August 24, 1990, and was the product of just over three weeks of what the JOPS system called crisis action planning. Unlike the deliberate planning that had characterized the development of OPLAN 1002-90, the initial DESERT STORM plan focused specifically on the Iraqi threat in Kuwait at the time and was intended for execution as approved. The campaign had two specific operational objectives of ejecting all Iraqi forces from Kuwait and restoring the original Kuwaiti border.²⁸ The USCENTCOM planners laid out four phases for the campaign. While the names of the second and third phases changed between briefing the initial plan on August 24 and the beginning of offensive air operations on January 17, 1991, the basic structure of the campaign remained the same.

Phase I was called the “Strategic Air Campaign,” with the objective of destroying the ability of the Iraqi political and military leadership to control military operations, isolating the Iraqi forces in Kuwait from reinforcement, and demoralizing the front-line Iraqi forces. Much of the work that had gone into INSTANT THUNDER went directly into Phase I. Although the

²⁷ Ibid., 13–19.

²⁸ U.S. Central Command, “Offensive Campaign Briefing (DESERT STORM),” August 24, 1990, 6, IRIS 0872752, Air Force Historical Research Activity. Deliberate planning occurs during peacetime or before a contingency, and normally results in an OPLAN, or less detailed documents like a concept plans (CONPLAN) or commander’s estimate. Crisis action planning occurs after a contingency or war begins to generate an operations order (OPORD) for execution in combat or contingency operations. Although crisis action planning ideally uses previous work from deliberate planning, it can also be done without previous deliberate planning products, at much greater difficulty.

trigger for its initiation was the buildup of sufficient ground defensive capability around al-Jubayl, the mention of a six-day timeline was an unmistakable carryover from the original INSTANT THUNDER concept.²⁹ The USCENTCOM planners allocated 720 strike fighters, attack aircraft, and bombers to Phase I, and envisioned from 900 to 1,200 daily sorties. Also included were 125 ship-launched Tomahawk Land Attack Missiles to attack targets where the air defense threat was deemed too risky.³⁰ By the final version of the campaign plan, the tasks included reducing Iraqi ability to employ nuclear, biological, and chemical (NBC) weapons, and the demoralization of first-echelon Iraqi forces had changed to destruction of the Republican Guard forces in the Kuwait Theater of Operations (KTO).³¹

Phase II was initially titled “Kuwait Air Campaign,” with the goal of gaining total air superiority over Kuwait to enable American and coalition fixed wing and helicopter forces to fly unchallenged. The forces allocated to this phase of the plan had two tasks: an offensive counter-air mission to destroy Iraqi air forces on the ground or in the air, and a suppression of enemy air defense (SEAD) mission to disable or destroy Iraqi air defense guns and missiles.³² The final name for this phase became “Air Supremacy in the KTO.”

Phase III was initially titled “Ground Combat Power Attrition,” and focused heavily on “interdiction” to reduce Iraqi ground forces in Kuwait independent of ground action. It sought specifically to isolate Iraqi forces in Kuwait from reinforcement, and to prevent from the Iraqi Republican Guard Forces Command units, which USCENTCOM planners considered to be more politically reliable than the regular Iraqi forces, from joining combat. Many of the air assets

²⁹ Ibid., 4.

³⁰ Ibid., 15.

³¹ Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress*, 99. Such a name was misleading, as “theater” implied a separate campaign altogether, but the modern-day term “joint operating area” was not well known at the time of the war, and as a result, common usage settled onto “KTO.”

³² U.S. Central Command, “Offensive Campaign Briefing (DESERT STORM),” 16.

allocated to the previous two phases carried over into Phase III, but this phase also included naval gunfire and with additional Tomahawk strikes.³³ The final name of Phase III in the approved campaign plan became “battlefield preparation,” with the military tasks of cutting supply lines, destruction of Iraqi NBC weapons, and destruction of the Republican Guard.³⁴

The last phase was Phase IV, titled “Ground Attack,” intended to accomplish the primary mission of ejecting Iraqi forces from Kuwait. The previous three phases had focused on coercing Iraqi forces to leave Kuwait by punishing them if they stayed. What made this phase different from the previous phases was its commitment of ground troops to compel Iraqi forces into leaving Kuwait, either through their ejection or destruction, if the coercion in Phases I through III had failed to accomplish termination criteria. The phase had two triggers for execution, one of which was Bush’s approval to execute, but the other was the reduction of Iraqi ground combat forces in the Kuwait Theater of Operations to 50 percent of their original strength in Phase III.³⁵ The bulk of the forces allocated to Phase IV were an Army corps, a Marine Expeditionary Force (MEF), a Marine Expeditionary Brigade (MEB) under the operational control of Commander, U.S. Naval Forces Central Command (NAVCENT), and some multinational forces.

Planning the deployment of forces required for the campaign plan into the AOR was one of the greatest early challenges for the USCENTCOM headquarters staff. In a feasibility analysis by phase, the planners had anticipated fourteen days to accomplish the objectives stated in Phases I through III, with aircraft attrition estimates ranging from 114 to 141, and ground attack casualties ranging from 7,700 to 9,700 depending on the level of the threat. About ten to fifteen percent of those ground casualties were anticipated to be from Iraqi NBC weapons.³⁶

³³ Ibid., 17.

³⁴ Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress*, 99.

³⁵ Cohen, *GWAPS Volume 1, Part 1*, 170, 186.

³⁶ U.S. Central Command, “Offensive Campaign Briefing (DESERT STORM),” 24–25.

The logistics assessment in the original Offensive Campaign Plan briefing envisioned having sufficient medical, logistics, and transportation assets to support the concept of operations no earlier than December 1990. The planners had recognized that they not only lacked sufficient sealift to deploy additional forces and their associated supplies, but they also lacked sufficient trucking to move U.S. and allied forces from their seaports and airports of debarkation to their battle positions.

Meeting those transportation shortfalls required two irrevocable statements of national will. The first was a Presidential Declaration of Defense Emergency to authorize the activation of additional sealift for moving forces into the USCENTCOM AOR. The second was a Presidential Selected Reserve Call-Up of 200,000 troops, the most allowed by law. The first would have provided the increases in force flow to move the transportation, supply, and medical personnel necessary to support the plan that came with the second.³⁷ The strategic decisions that only the President could make regarding those forces would have been inconsequential to a tactical commander, but had critical implications for the conduct of operational art.

The preponderance of ground forces in the August 24 offensive campaign plan briefing were exclusively from the U.S. Army, attacking directly into the mass of the Iraqi forces occupying western Kuwait. In the absence of any substantive commitments by any other countries that early in DESERT SHIELD and the sensitivity of any offensive planning during that time, the USCENTCOM planners had little actual choice. The MEF lacked the tactical capabilities to fight a mobile armored offensive against the Iraqis, and the MEB was intended for an amphibious deception attack to turn Iraqi forces away from the Army forces in the west.³⁸

³⁷ Ibid., 26.

³⁸ Ibid., 18–21. Although a MEF and MEB were both Marine Corps forces, the MEB was still embarked on its sealift, which meant that it was under the operational control of Commander, USNAVCENT, rather than

The overall campaign design for DESERT STORM incorporated contributions from all of the services within a unified whole. None of the USCENTCOM service component commands had the capability to execute any of the phases in isolation.³⁹ Even if the first three phases had been successful in accomplishing the unconditional withdrawal of all Iraqi forces from Kuwait, United States Central Command Air Forces (CENTAF) was still reliant on the strategic (intertheater) logistics from the United States to forward bases on the Arabian Peninsula, as well as the operational (intratheater) distribution and supply that was mostly the responsibility of U.S. Army Central Command (ARCENT).⁴⁰ Conversely, the USCENTCOM offensive campaign plan envisioned a combined air-ground effort in the fourth phase, using ground and air forces in a complementary role.

However, Schwarzkopf did not like the ground concepts of operations for Phase IV that the planners in the USCENTCOM staff had developed for the offensive campaign plan briefing, and asked General Carl E. Vuono, Chief of Staff of the Army, for several graduates of the School of Advanced Military Studies (SAMS) to assist in developing the ground attack plan.⁴¹

The Jedi and the “Ground Campaign”

under a Marine Corps commander. Once the MEB had debarked from its transport, the NAVCENT commander would relinquish operational control of the MEB to the senior Marine commander in the joint operating area.

³⁹ A service component command “(consists) of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations, and installations under that command, including the support forces that have been assigned to a combatant command or further assigned to a subordinate unified command or joint task force.” Joint Chiefs of Staff, *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms (revised as of 11 May 2011)* (Washington, D.C.: G.P.O., 2010), 330.

⁴⁰ Each of the service component commands had AOR-wide responsibilities for certain functions. Some of those functions were laid out in the USCENTCOM regulation on command and control within the AOR, but some were assigned based on Title 10 executive agency agreements, in which certain services automatically had responsibility for certain functions.

⁴¹ Kevin C. M. Benson, “Educating the Army’s Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994” (PhD dissertation, Lawrence: University of Kansas, 2010), 156.

Schwarzkopf's unease partly stemmed from lack of confidence in his primary staff officers for operations and plans. Neither Major General Burton Moore, an Air Force fighter pilot, nor Rear Admiral Grant A. Sharp, a surface warfare officer, had sufficient operational background to plan a large land operation. Furthermore, their land planners who might have had that expertise were decisively engaged with the ongoing work on force flow and defensive planning for OPLAN DESERT SHIELD. Much like the Black Hole planners, the four SAMS graduates augmenting the USCENTCOM staff were ostensibly a studies group from Fort Leavenworth. In reality, their purpose was to develop the concept of operations for DESERT STORM. Political considerations and the need for tight operational security drove the team, headed by Lieutenant Colonel (later Colonel) Joseph Purvis, an armor officer and 1989 graduate of the SAMS Advanced Operational Studies Fellowship, to a compartmented planning effort.⁴² At the outset, the degree of compartmentalization was such that only ten individuals within CENTCOM knew of the scope and responsibilities of Purvis's team, which picked up the title "Gang of Four," or sometimes "Jedi Knights," a sobriquet referring to SAMS graduates.⁴³

The Phase IV concept of operations in the August 1990 DESERT STORM offensive campaign briefing entailed a single corps attack to seize the Mutla Pass and Mutla Ridge, the highest ground in central Kuwait and a choke point for Highway 8, a four-lane divided highway leading to Iraq. Schwarzkopf was not sanguine about the feasibility of Phase IV as expressed; in his estimate, USCENTCOM had forces sufficient for a defense, but not a successful attack. While Powell suggested that Schwarzkopf remain in theater, he still requested an update on the offensive campaign plan. Schwarzkopf sent his chief of staff, Major General Robert Johnson, a

⁴² Ibid., 157. Compartmentalization requires additional access controls on classified information above and beyond normal, or "collateral" classified information.

⁴³ COL Richard M. Swain, *Lucky War: Third Army in Desert Storm* (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1997), 76.

Marine, along with Glosson and Purvis to brief Cheney, Powell, and the service chiefs at the Pentagon on October 10, 1990.⁴⁴ The next day, Johnson, Glosson, and Purvis briefed President Bush and his advisors. Johnson made it eminently clear in both briefings that DESERT STORM was not feasible without a second Army corps and the additional time necessary to deploy that corps' combat and support units for offensive operations. Cheney's disdain for the single corps attack was evident in his reaction of "high diddle diddle, straight up the middle."⁴⁵

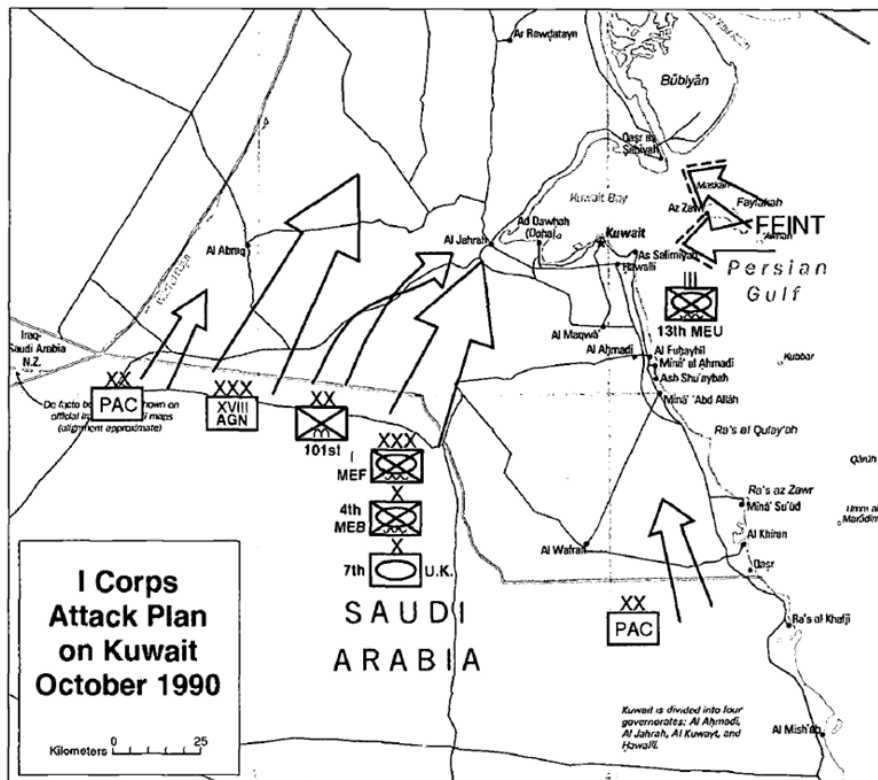


Figure 4: Last version of the single corps attack, October 10, 1990. The PAC symbols refer to "Pan-Arab Corps" units, under the control of Saudi General Khalid bin Sultan.⁴⁶

⁴⁴ GEN H. Norman Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," interview by COL Douglas V. Johnson and COL Phillip W. Mock, 1997, 86–88, U.S. Army Military History Institute, Senior Officer Oral History Program. U.S. Central Command, "Offensive Campaign Briefing (DESERT STORM)," 25.

⁴⁵ BG Robert H. Scales, LTC Terry L. Johnson, and MAJ Thomas P. Odom, *Certain Victory: The United States Army in the Gulf War* (Washington, D.C.: G.P.O., 1993), 127–128. Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The Inside Story of the Conflict in the Gulf* (Boston: Little, Brown, 1995), 142–147.

⁴⁶ Ronald J. Brown, *With Marine Forces Afloat in Desert Shield and Desert Storm*, U.S. Marines in the Persian Gulf, 1990-1991 (Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1998), 113.

Purvis returned to Riyadh on October 15 with new guidance from Schwarzkopf to start planning for a two-corps attack. Schwarzkopf had ruled out any use of airborne or amphibious operations, mostly for tactical reasons. The Navy estimated that minesweeping the littorals for an amphibious attack could take as long as month, while the original USCENTCOM assessment of the Iraqi integrated air defense system made the risk to an airborne assault prohibitive.⁴⁷ In the meantime, however, other proposals for offensive action originated in Washington, none of which were Schwarzkopf's initiatives.

Cheney, having consulted privately with John Boyd, the godfather of the maneuver warfare adherents, was a proponent of an attack from western Iraq to envelop and destroy Iraqi forces in Kuwait.⁴⁸ Dissatisfied with what he had seen in the October 11 meeting with the President, Cheney directed Lieutenant General Thomas Kelly, the Joint Staff's director of operations, to develop concepts of operation for an attack through western Iraq.⁴⁹ The Joint Staff courses of action envisioned an attack through the Iraqi desert west of the Wadi-al-Batin, a dry riverbed along the western border of Kuwait, turning east to destroy the Republican Guard units near Basra that represented the operational center of gravity of the Iraqi military.⁵⁰ Incident to those plans and in the wake of the unsuccessful one-corps offensive campaign briefing, Powell requested the forces necessary to resource a two-corps attack, which encompassed the Army's VII Corps, the 2d Marine Division, three additional carrier battle groups (for a total of six), and

⁴⁷ Scales, Johnson, and Odom, *Certain Victory*, 128.

⁴⁸ Boyd's original criticism of the August 24, 1990 DESERT STORM proposal was the source of "high diddle diddle, straight up the middle." Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (Boston: Little, Brown, 2002), 422–424.

⁴⁹ U.S. News and World Report, *Triumph Without Victory: The Unreported History of the Persian Gulf War* (New York: Times Books, 1992), 166–168.

⁵⁰ Gordon and Trainor, *The Generals' War*, 152–154; U.S. News and World Report, *Triumph Without Victory: The Unreported History of the Persian Gulf War*, 168–169.

roughly doubling the Air Force combat power within the AOR to support the attack.⁵¹ Cheney endorsed the request, which Bush approved on October 31, 1990.⁵²

The selection of VII Corps as the second Army corps was no accident. Of the available Army corps for commitment to DESERT STORM, only the U.S.-based III Corps and the Germany-based V Corps and VII Corps were suitable for a mobile armored battle. A Europe-based corps was physically closer, and did not add to the already heavy deployment throughput of forces from the United States. However, both V Corps and III Corps contributed units to ARCENT to provide resources necessary for the two-corps attack.⁵³

The political sensitivities of the two-corps attack required a level of discretion not unlike that experienced by the Black Hole planners. The Gang of Four, especially before Bush's announcement of additional forces, had to ask questions in a veiled manner to avoid tipping off others at USCENTCOM or at subordinate staffs that a ground offensive was being planned. The other SAMS graduates in the AOR proved particularly invaluable, as they shared a common framework from their academic work, knew each other personally, and most importantly, did not ask for the rationale to those inquiries.⁵⁴

The first version of the DESERT STORM campaign plan published as CINCCENT OPLAN DESERT STORM. Much like CINCCENT OPORD 003, the first DESERT STORM OPLAN reflected coalition input, but was a NOFORN document, expressing guidance that had to remain strictly within national channels.⁵⁵ Schwarzkopf, after approving CINCCENT

⁵¹ Gordon and Trainor, *The Generals' War*, 161.

⁵² Bob Woodward, *The Commanders* (New York: Pocket Star Books, 1992), 304–306.

⁵³ VII Corps units included the 3d Armored Division and several brigades from other non-deploying divisions, while III Corps units included the 3d Armored Cavalry Regiment, the 1st Cavalry Division, and the 1st Infantry Division.

⁵⁴ Benson, "Educating the Army's Jedi," 159–160.

⁵⁵ U.S. Central Command, "USCINCCENT OPLAN for Offensive Operations to Eject Iraqi Forces from Kuwait" (U.S. Central Command, December 16, 1990), IRIS 0874586, Air Force Historical Research Activity. The reasons for excluding content in a NOFORN order are invariably classified, but may be for political reasons, such as

OPLAN DESERT STORM on December 16, 1990, showed it to Cheney and Powell for their review during their visit to Riyadh on December 19 and 20. Upon their return to Washington, Cheney and Powell briefed the plan to President Bush, who approved it, but reserved approval for execution of Phase IV to a second Presidential approval.⁵⁶ Doing so would better enable the unified employment of all of the instruments of national power.

The foundations laid in the NOFORN order provided a basis for development of a coalition order, which began with the passage of UNSCR 678 on November 29, authorizing the coalition to use “all necessary means to uphold and implement” UNSCR 660 and subsequent resolutions. On December 10, Schwarzkopf directed initiation of coalition planning for DESERT STORM, followed by a combined warning order providing initial coalition planning guidance on December 15.⁵⁷ By that time, the DESERT STORM concept was mature, as was most of the coalition force structure. Saudi and Egyptian planners began developing their portions of the concept of operations for what would become the Combined OPLAN for Offensive Operations to Eject Iraqi Forces from Kuwait, or Combined OPLAN DESERT STORM. Schwarzkopf and General Khalid bin Sultan, his Saudi counterpart, approved the combined OPLAN on January 17, 1991. Powell had sent an order earlier that week that directed execution of DESERT STORM starting that same day.⁵⁸

The operational concept and plan for DESERT STORM represented only one part of the preparation for the campaign. The herculean work done to actually move forces and equipment

policy objectives or bilateral agreements external to a coalition, or for operational reasons, such as protection of intelligence sources and methods.

⁵⁶ Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress*, 89–90.

⁵⁷ *Ibid.*

⁵⁸ Chairman of the Joint Chiefs of Staff, “Execute Order Operation DESERT STORM” (Joint Staff, January 15, 1991), Persian Gulf War, OSD/JS FOIA Library, http://www.dod.mil/pubs/foi/operation_and_plans/PersianGulfWar/747.pdf (accessed April 11, 2012). Under the terms of the Goldwater-Nichols act, the Chairman holds no command authority, but the JCS is responsible for transmitting the guidance from the Secretary of Defense to the combatant commands and services.

into the AOR, and then sustain them over time, was another critical element in the conduct of operational art. Their onward movement after strategic deployment proved no less a challenge.

Deployment before the Storm

The timing of DESERT SHIELD came at a particularly inopportune time for the Department of Defense. In 1988, USTRANSCOM started merging JOPS and a complementary process called the Joint Deployment System to create a single system called the Joint Operation Planning and Execution System (JOPES). However, JOPES was not a mature system in 1990 and was incapable of handling the barrage of changes that ensued in the first months of DESERT SHIELD. To complicate matters further, operators at the services and unified commands were insufficiently skilled in the new JOPES procedures to manipulate the system efficiently. As a result, USCENTCOM and USTRANSCOM planners found themselves having to adjust the TPFDD in real time as priorities changed.⁵⁹

The differences between USTRANSCOM's peacetime and wartime responsibilities became painfully apparent. At the beginning of DESERT SHIELD, USTRANSCOM spent two weeks getting the TOAs to actually recognize its directive authority, which only applied in wartime.⁶⁰ Instead, JOPES operators in the 1st Tactical Fighter Wing and the 82d Airborne Division, the first two units to deploy, attempted to bypass the system using nonstandard methods. In peacetime, neither unit routinely used JOPS, let alone JOPES, and the data that was supposed to be used for deploying units was used only *pro forma*, as those and other units reverted to their peacetime practices. In execution, the TOAs called down to their service's

⁵⁹ Matthews and Holt, *So Many, So Much, So Far, So Fast*, 21–25.

⁶⁰ Ronald H. Cole et al., *The History of the Unified Command Plan, 1946-1999* (Washington, D.C.: Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 2003), 88.

deploying units outside the JOPES system to request up-to-date deployment statuses until USTRANSCOM could get control over the process.⁶¹

The necessity for a single manager for transportation movements was painfully apparent as the services, of their own accord, attempted to move their forces into theater without involving USTRANSCOM, as was the case in peacetime. Schwarzkopf recognized that their efforts to do so would further tax already-saturated strategic deployment assets, as well as move forces into theater of which he was unaware (and thus did not control). The Army and Air Force were guilty of trying to deploy units into the AOR earlier than the TPFDD stated, such as the XVIII Airborne Corps headquarters, or added units such as the 48th Infantry Brigade (Mechanized), that were never originally on the TPFDD itself. Schwarzkopf was so frustrated that he went to Powell to get relief from unsolicited service input to the TPFDD, which eventually abated.⁶²

After gaining control over the TPFDD, Schwarzkopf directed his staff to centralize all deployment actions through USTRANSCOM. The USTRANSCOM staff finally sent an official message through the Joint Chiefs of Staff requesting a formal policy statement to prevent units from chartering their own deployments based on their own tactical-level priorities rather than the operational and strategic priorities of a joint force commander.⁶³ Even Major General William G. Pagonis, Schwarzkopf's theater logistics commander, was not immune to this myopia,

⁶¹ The 1st Tactical Fighter Wing from Langley AFB, Virginia, and the 2d Brigade, 82d Airborne Division from Fort Bragg, North Carolina started arriving in Saudi Arabia on August 7th and 9th, 1990, a week after the invasion of Kuwait. Matthews and Holt, *So Many, So Much, So Far, So Fast*, 23, 244–245. U.S. General Accounting Office, *DESERT SHIELD/STORM: U.S. Transportation Command's Support of Operation: Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives* (Washington, D.C.: G.P.O., 1992), 9.

⁶² Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 57–58.

⁶³ Schwarzkopf noted that "that some enterprising individuals are simply finding ways to get to the war by any means." U.S. Transportation Command, "Non-DESERT SHIELD Movements into the CENTCOM AOR", 191349Z DEC 90, Automated Message Handling System message, 191349Z DEC 90, Southwest Asia (SWA) Folder 0014, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center; Matthews and Holt, *So Many, So Much, So Far, So Fast*, 24.

remarking that “the people I was requesting on Day One were not necessarily the people I needed most when they arrived on Day Six.”⁶⁴

The relative scarcity of airlift and sealift assets only underscored the necessity for centralized control in the deployment process. Although airlift assets were far quicker than their sealift counterparts, the amount of cargo that sealift could move dwarfed the amount that could be moved by air. In the case of some cargoes, particularly the Army’s armored and mechanized infantry forces, the amounts that could be moved by air were both tactically and operationally insignificant; the Air Force’s largest cargo airlifter, the C-5 Galaxy, could move only one tank, and the weight of that tank left little available capacity for any other cargoes over intercontinental distances. The Air Force’s Military Airlift Command employed almost 90 percent of its strategic airlift forces to support DESERT SHIELD and DESERT STORM, accounting for 66 percent of the cargo airlifted during the conflict.⁶⁵

The capabilities of military airlift alone were inadequate compared to the requirements placed on airlift, and USTRANSCOM readily accepted commercial aircraft into the airlift force, marking the only activation of the Civil Reserve Air Fleet (CRAF) in the program’s history. The CRAF dated back to a 1951 wartime airlift requirement study on the amount of intercontinental airlift necessary in wartime, whereby the U.S. Government would support civilian air carriers in maintaining aircraft that could augment military strategic airlift for combat deployments in exchange for military business during peacetime.⁶⁶ At the same time, most of the ground combat forces designated for Phase IV of the DESERT STORM campaign plan and their follow-on supplies moved by sealift as they were far too heavy to move by air alone.

⁶⁴ LTG William G. Pagonis and Jeffrey L. Cruikshank, *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War* (Boston, Mass.: Harvard Business School Press, 1992), 125.

⁶⁵ Matthews and Holt, *So Many, So Much, So Far, So Fast*, 38.

⁶⁶ David Graham et al., *Sustaining the Civil Reserve Air Fleet (CRAF) Program*, IDA Paper P-3819 (Alexandria, Va.: Institute for Defense Analyses, May 2003), A-8.

The first source of sealift was the Navy's Military Sealift Command (MSC). The nine ships of Maritime Prepositioning Squadrons 2 and 3 were the first ships to offload cargo. Each of those squadrons carried equipment and supplies sufficient for a MEB of approximately 16,500 Marines for 30 days. Of the twelve ships deployed from the MSC's Afloat Prepositioning Force in support of DESERT SHIELD and DESERT STORM, eleven came from Diego Garcia, an island port in the Indian Ocean, with the twelfth coming from the Mediterranean. Those cargo ships and tankers, arriving at Ad Dammam, Saudi Arabia on August 17, 1990, had supplies and equipment for such a contingency. After offloading their cargo, they served either as strategic transports or as a common-user logistics platform under control of USCENTCOM for the remainder of the war.⁶⁷

The second source was the MSC's Fast Sealift Ships, which were capable of moving over 1,000 pieces of equipment each, equivalent to roughly 213 C-5 cargo aircraft sorties. The other government-owned sealift that deployed cargo to the AOR came from the Ready Reserve Force (RRF) of the Department of Transportation's Maritime Administration, which provided a third of the DESERT SHIELD dry cargo lift. The RRF had been maintained for such a contingency for ready activation, but in reality had mixed results. Only 72 of 96 RRF ships saw activation; and only 20 of them within their specified time periods (typically five or ten days). The RRF had seen little funding for maintenance during peacetime, requiring emergency repairs and sea trials to bring to operating capacity. Once activated, though, the RRF saw a reliability rate of over 90 percent.⁶⁸

⁶⁷ "Common-user" refers to services, materiel, or facilities provided by a Department of Defense agency or a Military Department on a common basis for two or more Department of Defense agencies, elements, or other organizations as directed. The USCENTCOM headquarters, under its Directive Authority for Logistics, directed common-user logistics to any service force based on theater needs. Matthews and Holt, *So Many, So Much, So Far, So Fast*, 118–119.

⁶⁸ *Ibid.*, 119–122. A detailed listing of the activations of the RRF appears in James K. Matthews, Margaret J. Nigra, and Cora J. Holt, *United States Transportation Command, the National Defense Reserve Fleet, and the*

Even with the MSC's assets and the RRF, another 31 percent of the cargo delivered by sealift came by U.S. merchant flag carriers and foreign flag carriers. The U.S. flag merchant marine charters could only provide an additional six RO/RO ships in addition to the seventeen RO/RO ships in the RRF. The remainder came from foreign carriers, whose reliability and speeds were comparable to RRF vessels once activated.⁶⁹

Sequencing the deployment of forces for DESERT SHIELD and DESERT STORM required a balance between immediate priorities and requirements for later phases of the campaign. In addition, the logisticians had to deliver not only forces, but also their supplies; even the most tactically lethal force was irrelevant if it ran out of fuel or ammunition for combat operations. Although the DESERT STORM offensive campaign plan offered a rough composition of the forces deploying into theater, the detailed composition of those forces was a function of the TPFDD, which saw daily refinements, especially early in the DESERT SHIELD deployment.⁷⁰ That refinement slowed as the theater became more mature, and the USCENTCOM planners could accept risk with forces and stockage levels already in theater.

The composition of forces deploying for DESERT SHIELD was a function of those forces that could arrive most quickly. Consequently, the forces that closed in the first 30 days were predominantly Air Force strike fighter squadrons, albeit without the maintenance and support squadrons necessary for any sustained operations.⁷¹ Although the 2d Brigade, 82d

Ready Reserve Force: A Chronology (Scott Air Force Base, Ill.: United States Transportation Command, 1999), app. 2.

⁶⁹ Center for Naval Analyses, "Sealift in the 1990s: Lessons Learned from DESERT SHIELD," December 10, 1990, Marine Corps Lessons Learned System# 30551-06944, Southwest Asia (SWA) Folder 0014, General Alfred M. Gray Research Center.

⁷⁰ Matthews and Holt, *So Many, So Much, So Far, So Fast*, 24–25.

⁷¹ GEN(Ret) H. Norman Schwarzkopf and Peter Petre, *It Doesn't Take A Hero: General H. Norman Schwarzkopf, The Autobiography* (New York: Bantam Books, 1992), 312. "Closure," in the sense of joint deployment, denotes when the first element arrives at a designated location, and ends when the last element does likewise. It encompasses both personnel and equipment, so a unit whose personnel has arrived in the AOR but is awaiting equipment is not considered closed. Joint Chiefs of Staff, *JP 1-02*, 57–58.

Airborne Division was the first ground combat force to close in the AOR by August 9, 1990, the 7th MEB closed by August 25, providing a far more credible land power deterrent with two battalions of M60 tanks, as well as the strike fighters and attack helicopters in its air combat element. The other combat unit that closed early was the Army's 11th Air Defense Artillery Brigade and its Patriot missile launchers on August 12.⁷² That brigade provided an insurance policy not only for the seaports at Ad Dammam, Dhahran, and al-Jubayl, but also for the Saudi capital city of Riyadh. Later coverage included the bases at King Khalid Military City and Hafar al-Batin as ground combat forces from the Army, Marine Corps, and members of the coalition staged forward for the ground offensive. No other system at the time had the ability to intercept the Iraqi theater ballistic missiles that represented the only significant Iraqi regional threat due to their ability to deliver NBC payloads. The other location that received Patriot missile coverage was Israel, which the United States had recognized as a potential target for Saddam Hussein's theater ballistic missiles. However, Saddam Hussein did not initiate any theater ballistic missile attacks until January 18, 1991, after the commencement of DESERT STORM, which was particularly fortuitous for the seaports of debarkation in Bahrain, and more significantly, at Ad Dammam and al-Jubayl in Saudi Arabia.⁷³

⁷² Matthews and Holt, *So Many, So Much, So Far, So Fast*, 244–248.

⁷³ The 1st Armored Division, 3d Armored Division, and 1st Infantry Division closed in the AOR on January 21, January 26, and February 7 respectively. Department of Defense, "Section 5: Iraq's Use of Scuds During Operation DESERT STORM," *Information Paper: Iraq's Scud Ballistic Missiles*, July 25, 2000, http://www.gulflink.osd.mil/scud_info/scud_info_s04.htm#A.%20Introduction (accessed April 17, 2012).

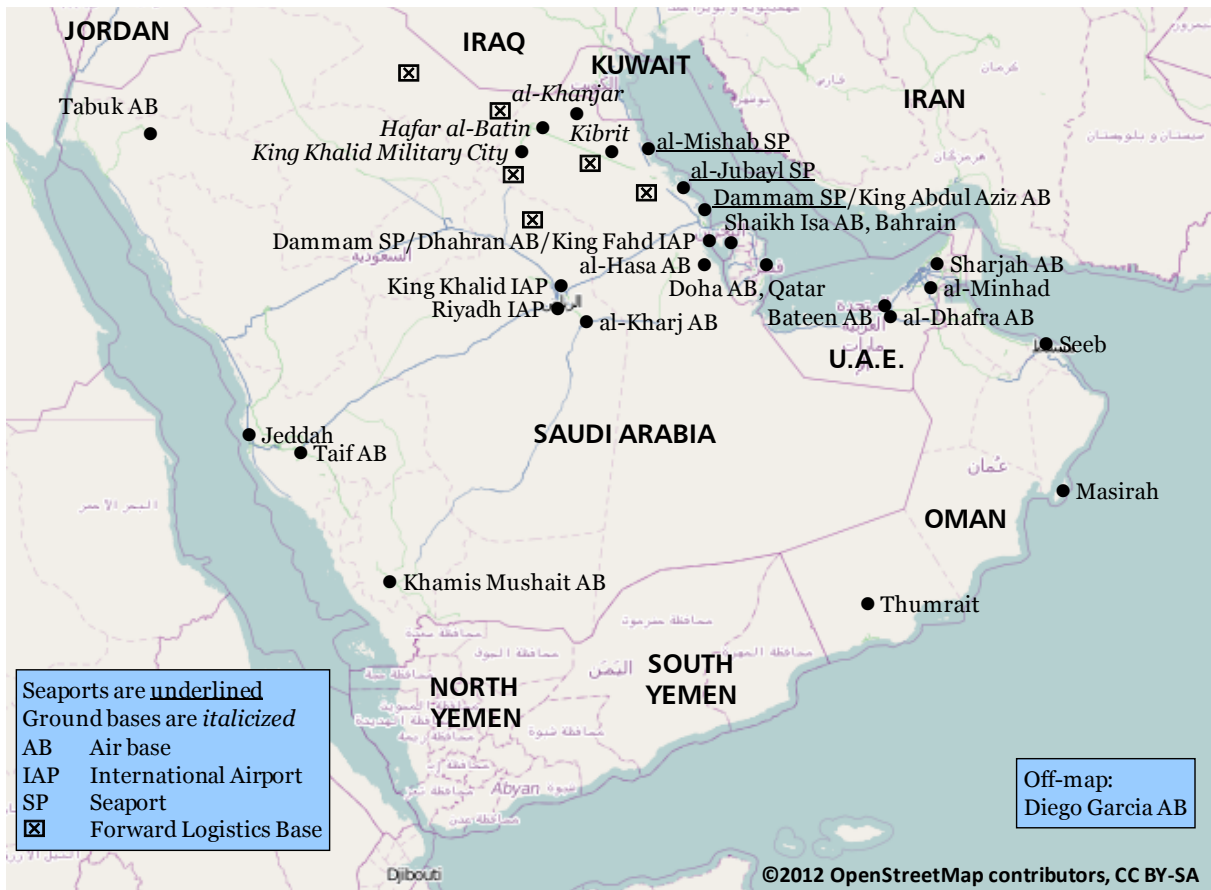


Figure 5: Arabian Peninsula, showing location of airbases, seaports, and ground force basing during DESERT SHIELD and DESERT STORM. Map by author.

The greatest competition for personnel deployment early in the deployment was between the combat forces that provided a deterrent and the logisticians needed to support those combat forces beyond their basic loads.⁷⁴ For many of those units, that basic load was projected for a three-day period, even though that estimate was hopelessly optimistic for high-intensity conflict. Exacerbating the problem was the tendency of combat forces, which had a higher priority early in DESERT SHIELD, to “bump” the logisticians’ personnel and equipment. Those tactical units changed their deployment sequence by defying or amending the TPFDD, consistent with tactical, rather than operational or strategic priorities. An attack in the first few days of DESERT

⁷⁴ A basic load describes “the quantity of supplies required to be on hand within, and which can be moved by, a unit or formation. It is expressed according to the wartime organization of the unit or formation and maintained at the prescribed levels.” Units were expected to be able to carry their basic loads of ammunition, fuel, and other supplies with their own assets into combat.

SHIELD represented the most dangerous situation, not only for policymakers in Washington, but also for those forces on the ground.⁷⁵ Had Iraqi forces attacked Saudi Arabia, those forces in the AOR would have expended their basic loads against a numerically superior enemy. The first unit to arrive with more than its basic load was the 7th MEB, thanks to the Maritime Prepositioning Squadrons reserved for the brigade.⁷⁶ Once spent, those U.S. forces were totally dependent on the strategic lines of communication leading from the United States to the seaports and airports of debarkation in the theater. Once those supplies arrived in theater, however, they were also then completely reliant on the intratheater and common user logistics that was the Army's responsibility to fulfill.

In any event, U.S. forces became USCENTCOM's responsibility for operational sustainment after arrival in the AOR. Normally, the 377th Theater Army Area Command (TAACOM), an Army Reserve headquarters from New Orleans, Louisiana, was assigned to ARCENT to support USCENTCOM theater logistics. However, the 377th TAACOM was caught between its peacetime chain of command at U.S. Army Forces Command (FORSCOM), which along with the Army Staff wanted the unit deployed forward, and USCENTCOM and ARCENT, which did not want to deploy a separate logistics command headquarters into the AOR. As an Army Reserve Unit, the 377th TAACOM was reliant on mobilized reservists, and ARCENT did not want to face the prospect of having to release a unit if the war exceeded the duration or the limited authorities granted by a Presidential Selected Reserve Call-Up mobilization.

⁷⁵ Council on Foreign Relations, "The Gulf War: Twenty Years Later," panel discussion transcript, February 15, 2011, <http://www.cfr.org/middle-east/gulf-war-twenty-years-later/p24150> (accessed April 18, 2012).

⁷⁶ Tony Sinagra, "Maritime Prepositioning System WORKS during Operation Desert Shield," *Leatherneck* 73, no. 11 (November 1990): 28–29.

In the two weeks between the commencement of DESERT SHIELD and the alert order for the 377th TAACOM, Lieutenant General John J. Yeosock, ARCENT commanding general, called Pagonis forward from a previous position as the FORSCOM deputy chief of staff for logistics. Pagonis was to be an advisor for host-nation support from the Saudis. After attempting to coordinate the conduct of host nation support, Pagonis found that his role expanded to logistical support for the entire theater, and picked up the title of Commander, ARCENT (Forward) as Deputy Commanding General for Logistics while he continued to bring in more personnel to assist.⁷⁷ Pagonis's provisional ARCENT Support Command (SUPCOM) formally activated on August 18, with the mission of coordinating logistics support for all U.S. units and coalition forces. With the SUPCOM in place, the alert message for the 377th TAACOM was rescinded on August 27 and the command did not deploy.⁷⁸

The scope of Pagonis's responsibilities went far beyond the Army. As a theater logistics commander, he was responsible for overseeing the joint reception, staging, integration, and onward movement (RSOI), or "the essential processes required to transition arriving personnel, equipment, and materiel into forces capable of meeting operational requirements" of forces arriving in the AOR.⁷⁹ The RSOI process was a theater commander function, but Schwarzkopf delegated its execution to the SUPCOM.

The other significant mission for the SUPCOM beyond supporting RSOI was that of supporting intratheater logistics for those forces within the AOR. Once again, the scope of that

⁷⁷ Pagonis and Cruikshank, *Moving Mountains*, 76, 89–90, 97–98.

⁷⁸ Frank N. Schubert and Theresa L. Kraus, *The Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm* (Washington, D.C.: U.S. Army Center of Military History, 1994), 58. It is possible that USCENTCOM and ARCENT wanted an Active Component headquarters (even an *ad hoc* one) that required no mobilization, but any such desires, for Army political reasons, could never be written into any official history of the war. In any event, Executive Order 12727 authorized a Presidential Selected Reserve Call-Up on August 22, 1990, two weeks after the SUPCOM formally stood up. The SUPCOM eventually received a formal designation as the 22d TAACOM.

⁷⁹ Joint Chiefs of Staff, *JP 1-02*, 203.

mission was inherently joint, because the locations that Pagonis had to support included air bases throughout the Arabian Peninsula. The geographic distribution of forces meant that the SUPCOM had to support forces on lines of communication stretching over 800 miles from the seaport at Ad Dammam. The greatest challenge for intratheater logistics on the Arabian Peninsula was trucking. In the absence of military motor transportation units to move cargo from the seaports to the bases throughout the Arabian Peninsula, Pagonis's staff had contracted for a small armada of so-called "third country national" civilian drivers from countries as diverse as Korea, Pakistan, the Philippines, and India. Colonel Roger Scarce, the SUPCOM chief of staff, informally called them the "Pakistani Truck Battalion," and after leasing rental trucks, they were the first large source of common user logistic transportation for the coalition. Pagonis detailed a small force of American soldiers to administratively manage the Pakistani Truck Battalion. Until additional military and civilian transportation assets arrived in the AOR to augment them, those third country nationals were the sum of the CENTCOM intratheater logistics network on the Arabian Peninsula.⁸⁰

The other important role that the SUPCOM assumed was in its coalition responsibilities as the U.S. national support element. While the term was largely unknown outside of the North Atlantic Treaty Organization and did not appear in American joint doctrine until 2002, it describes perfectly the SUPCOM's responsibilities to support American military forces within the AOR, regardless of their parent service.⁸¹ While the SUPCOM was not a joint organization, it was an Army organization with joint responsibilities. The Army's role within the theater of

⁸⁰ U.S. News and World Report, *Triumph Without Victory: The Unreported History of the Persian Gulf War*, 148–149.

⁸¹ Joint Chiefs of Staff, *Joint Publication 4-08: Joint Doctrine for Logistic Support of Multinational Operations* (Washington, D.C.: G.P.O., 2002), I-10 – I-11. A previous term of "national component" also encompasses the national support element role, in Joint Chiefs of Staff, *Joint Publication 0-2, Unified Action Armed Forces (UNAAF)* (Washington, D.C.: G.P.O., 1995), I-10.

operations included water, fuel, food, hospitalization, prisoner of war handling, refugee handling, national common ammunition, and intra-theater transportation.⁸²

The SUPCOM was also responsible for the delivering logistical support to coalition partners as required, although logistics was normally a national responsibility. In some cases, however, those countries drew support from the United States under the provision of an acquisition and cross-servicing agreement (ACSA). In the case of Great Britain and France, two countries with substantial troop commitments to the coalition, those agreements provided the basis for common user logistics support.⁸³

By delegating logistics execution to Pagonis and his staff, Schwarzkopf established, in essence, his own logistics command on an equal footing as his component commanders. Some of those component commanders, however, would entertain plans that involved a more expansive role for their organizations.

One Joint Force Air Component Commander to Rule Them All

One of the central premises of faith among airmen has been the notion of centralized control and decentralized execution of airpower.⁸⁴ The instrument by which the CENTAF leadership sought to achieve that centralized control was the concept of a Joint Force Air

⁸² LTG(Ret) John J. Yeosock, “‘Yesterday’s Preparation Builds Tomorrow’s Victories’: An Oral History of Lieutenant General John J. Yeosock,” interview by LTC John F. Antal, 1998, 102–103, U.S. Army Military History Institute, Senior Officer Oral History Program.

⁸³ U.S. Joint Chiefs of Staff, “Acquisition and Cross-Servicing Agreements,” 121418Z FEB 91, Automated Message Handling System message, 121418Z FEB 91, Southwest Asia (SWA) Folder 0002, Archives and Special Collections Branch, General Alfred M. Gray Research Center. Stephen A. Bourque, *Jayhawk!: The VII Corps in the Persian Gulf War* (Washington, D.C.: U.S. Army Center of Military History, 2002), 89; Nigel Pearce, *The Shield and the Sabre: The Desert Rats in the Gulf 1990-1991* (London: H.M.S.O., 1992), 35–37.

⁸⁴ Two substantive treatments of that concept include Lt Col Clint Hinote, *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?* (Maxwell Air Force Base, Ala.: Air University Press, 2009). and Lt Col Michael W. Kometer, *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower* (Maxwell Air Force Base, Ala.: Air University Press, 2007). Most notably, both are faculty at the School of Advanced Air and Space Studies at Maxwell AFB.

Component Commander (JFACC). The establishment of a JFACC during DESERT SHIELD divided airmen along service lines, with the Air Force in advocacy and the Navy and Marine Corps in bitter opposition. In spite of that opposition, the Air Force was successful in getting the JFACC concept to work during the war. The foundations for that success started before the war.

One of the recurrent points of friction in command post exercises was friction between the Air Force, Marine Corps, and the Navy over command and control of air, going back to the first instance of a JFACC in USCENTCOM in 1988 during two exercises in which Horner was the JFACC, in spite of the Marines' significant opposition.⁸⁵ Schwarzkopf was willing to tolerate doctrinal discussions during those exercises, but made it clear that Horner was going to be his single theater air commander in the event of combat.⁸⁶ Horner, having experienced a "route pack" system that divided up the air area of operations by service in Vietnam, was vehemently opposed to anything that so much as resembled dividing air operations along service lines, which the Navy and Marine Corps favored.⁸⁷

Unusually, joint doctrine actually provided an authoritative statement of the role of the JFACC in JCS Publication 3-01.2, *Joint Doctrine for Theater Counterair Operations*:

The joint force air component commander's responsibilities will be assigned by the joint force commander (normally these would include, but not be limited to, planning, coordination, allocation and tasking based on the joint force commander's apportionment decision). Normally, the joint force air component commander will be the Service component commander who has the preponderance of air assets to be used and the ability to assume that responsibility.⁸⁸

The interpretation of that doctrine varied widely among the CENTCOM service components, and friction predictably ensued whenever CENTAF attempted to establish itself as the JFACC.

⁸⁵ Horner, "DESERT STORY Oral History Interview," 1, December 2, 1991.

⁸⁶ While Schwarzkopf does not mention any specific exercises, the content of INTERNAL LOOK 90 makes it highly likely that such an argument ensued in that exercises as well. Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 64, 1997.

⁸⁷ Clancy and Horner, *Every Man A Tiger*, 87-89.

⁸⁸ U.S. Joint Chiefs of Staff, *Joint Chiefs of Staff Publication 3-01.2: Joint Doctrine for Theater Counterair Operations* (Washington, D.C.: G.P.O., 1986), III-4.

The Air Force was not, of course, the only service with attack and fighter aviation in the AOR. The Navy's contribution to airpower came in the form of six carrier battle groups, two operating in the Red Sea and four in the Persian Gulf. However, consistent with earlier thought, the Navy had been traditionally resistant to the notion of a JFACC, preferring to retain command of all naval aviation under the carrier battle group commander. The Navy's rationale was that its aviation is its first line of early warning and defense for the surface ships within a maritime task force. The Marine Corps had traditionally seen its aviation as an integral part of a Marine Air-Ground Task Force (MAGTF), and thus considered all Marine aviation as organic close air support (CAS) platforms for the MAGTF commander. The basis of that rationale was partly to protect the service from budgetary encroachments in peacetime, as well as to ensure that a Marine ground combat element always had air support.⁸⁹ Both the Navy and Marine Corps found the notion of an Air Force JFACC abhorrent.

The NAVCENT staff considered the creation of a JFACC as not solidly grounded in joint doctrine and an attempt to rewrite joint doctrine on the battlefield, in spite of the verbiage in JCS Publication 3-01.2. To them, the creation of a JFACC was an Air Force power grab, as well as an attempt to subordinate one component commander to another.⁹⁰ The naval officers' general lack of knowledge in military doctrine, a product of the Navy's cultural disdain for resident professional military education, did not help. The result was a poisonous relationship between NAVCENT and CENTAF. Conversely, most of the NAVCENT staff remained embarked on the USS *Blue Ridge*, the Seventh Fleet and NAVCENT command and control ship, which was in port at Bahrain or at sea. NAVCENT Riyadh, a staff and liaison detachment under Rear Admiral

⁸⁹ James A. Winnefeld and Dana J. Johnson, *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991* (Annapolis, Md.: Naval Institute Press, 1993), 9–11.

⁹⁰ Col Brian E. Wages, "End of Tour Report as Air Force Liaison Officer to Commander, US Naval Forces, Central Command (COMUSNAVCENT/AFLO) for Operations DESERT SHIELD/DESERT STORM" (12th Air Force, March 5, 1991), 2–3, IRIS 0876195, Air Force Historical Research Activity.

(Lower Half) Timothy W. Wright, set up where USCENTCOM (Forward), ARCENT, and CENTAF had made their headquarters. Although the CENTAF planners had a good relationship with the NAVCENT Riyadh personnel, the airmen incorrectly believed that their naval counterparts in Riyadh were empowered to make decisions, when in reality, those sailors were beholden to the NAVCENT main headquarters at sea.⁹¹

The Navy's opposition to a JFACC paled to that of the Marine Corps. Central to that opposition was the sanctity of the MAGTF. Before the war, the Marine Corps had argued for "coordinating authority" as the appropriate (non-command) relationship, in which a JFACC could only require consultation, but not compel agreement to a task. They relented to relinquishing tactical control of Marine air, which granted authority to control and direct forces but not reorganize them.⁹² In a postwar interview, Major General Royal N. Moore, commander of the 3d Marine Air Wing, the air combat element for I MEF during the war, was diplomatic but pointed in his criticism that the JFACC could not work on a fluid battlefield. Moore continued to see the role of the JFACC as a coordinator, and his belief that coordination was "really what the CINC wants" was the context for the way he managed command and control under a JFACC system.⁹³

The primary instrument of command and control for CENTAF's operational direction of airpower as a JFACC during DESERT SHIELD and DESERT STORM was the MAP and ATO,

⁹¹ Ibid., 6. CAPT Steven U. Ramsdell, "Trip Report via Deputy Director, Naval Historical Center to Director, Naval Historical Center" (Naval Historical Center, May 14, 1991), 4–5, IRIS 0872544, Air Force Historical Research Activity.

⁹² The Marine Corps has been chary of Army commanders who desired operational control of a MAGTF; the Marines feared that an Army commander, out of ignorance or malice, would break up the MAGTF for its fixed wing attack aviation. COL Peter F. Herrly, "Gulf War Air Power Survey Oral interview re: Joint air campaign," interview by Mark Mandeles, February 20, 1992, 2, IRIS 0872544, Air Force Historical Research Activity. Joint Chiefs of Staff, *Joint Chiefs of Staff Publication 0-2: Unified Action Armed Forces (UNAAF) with Change 1* (Washington, D.C.: G.P.O., 1986), 3–17, 3–19. Cohen, *GWAPS Volume 1, Part 2*, 42.

⁹³ MajGen Royal N. Moore, "Marine Air: There When Needed," *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 63.

typically 500 to 900 pages of computer printouts. Due to lack of interoperability between the Air Force and its sister services, distribution of the ATO required carrier-onboard delivery aircraft to ferry paper copies of the telephone-book-size ATOs to an aircraft carrier each the Red Sea and Persian Gulf, where a helicopter would distribute the ATO to the other carrier battle groups in both of those locations.⁹⁴

Both the Navy and Marine Corps used workarounds to address their difficulties with the ATO. In the Navy's case, the ATO deliberately omitted internal fleet defense requirements. However, NAVCENT planners occasionally added targets that they wanted to attack outside of the ATO system into those fleet defense requirements.⁹⁵ In the case of the Marine Corps, the MARCENT staff negotiated for a high density airspace control zone, which the MAGTF commander controlled, and used it to exercise greater control over their forces.⁹⁶ By his own admission, Moore "gamed the ATO process," nominating sorties far in excess of what was required in the MARCENT area of operations. He then cancelled many of those sorties, allowing him to reallocate sorties without going through the JFACC in Riyadh, an approach that the Navy later adopted.⁹⁷

Tactical air operations during DESERT STORM were a precursor to the future employment of air power in operational art. The process for translating Schwarzkopf's campaign guidance into tactical direction to flying units through the MAP and ATO saw its debut prior to its future inclusion into joint doctrine. However, the friction among the Air Force, Navy, and Marine Corps were still raw spots on the employment of air power in operational art.

⁹⁴ LCDR Lawrence Di Rita, "Exocets, Air Traffic, and the Air Tasking Order," *U.S. Naval Institute Proceedings* 118, no. 8 (August 1992): 62.

⁹⁵ Wages, "COMUSNAVCENT/AFLO End of Tour Report," 5.

⁹⁶ Peter Perla, Gregory Swider, and Christine Fox, "Trip Report: Briefings for Oahu-area commands about USN Participation in Joint Air Operations study," January 28, 1992, 4, IRIS 0876197, Air Force Historical Research Activity.

⁹⁷ Moore, "Marine Air: There When Needed," 63.

Moore's gaming the ATO was an expression of service autonomy; the Air Force's culture of centralized control and decentralized execution was fundamentally at odds with the Marines' own culture of decentralizing command authority to the lowest level possible. MARCENT's preferred circumstance was to control its own airspace, consistent with the concept of the MAGTF. The sanctity of the MAGTF to the Marine Corps made its operational employment internally consistent, but could also be problematic for a joint force commander. The amount of air power deployed into the AOR allowed Horner to tolerate two separate air arms in the Navy and Marine Corps, but the lack of interoperability among the components, combined with Schwarzkopf's permissive hand on his subordinate components, made its operational effect less effective than could have been the case.

Integrating the Marine Corps into the Campaign

The Marine Corps forces provided invaluable contributions to the joint force effort during DESERT SHIELD and DESERT STORM. However, those contributions highlighted a paradox between the Marines' traditional role of contingency response and their utility as a second landpower force in higher-intensity conflicts. Nonetheless, the Marines' unique tactical capabilities provided valuable resources for the conduct of operational art in the AOR.

The Marines' investment in the Maritime Prepositioning Force paid off handsomely in the first month of DESERT STORM, when the tanks, heavy weapons, and combat aircraft of the 7th MEB provided Schwarzkopf his first deterrent option. Their presence was even more credible given that those forces arrived with the supplies necessary to fight beyond their immediate basic loads until heavier forces arrived, in the form of the 24th Infantry Division

(Mechanized) and the remainder of I MEF. The closure of the 4th MEB to its amphibious station in the Gulf of Oman in mid-September 1990 provided another deterrent option.

The amphibious capability provided by the 4th MEB proved particularly useful to Schwarzkopf in the lead-up to DESERT STORM. In an exercise called IMMIDENT THUNDER, the 4th MEB conducted large-scale amphibious assault training with coalition forces in full view of the news media. While IMMIDENT THUNDER was ostensibly a training exercise among CENTCOM and its service components, it also provided unambiguous warning to Saddam Hussein that the coalition had an amphibious assault capability in the region. Saddam Hussein, of course, had no way of knowing that Schwarzkopf had explicitly squelched any amphibious attacks in the DESERT STORM concept, and INSTANT THUNDER was as much military deception as it was a rehearsal exercise for American and coalition forces.⁹⁸

The MARCENT presence in the AOR, after the closure of the remainder of I MEF, became that of a second land army. That role only solidified with the arrival of the 2d MARDIV. The greatest challenge for those organizations, then, became operational sustainment. While I MEF had arrived with the 1st Force Service Support Group (FSSG), under Brigadier General James A. Brabham, Jr., the expansion of Marine forces also included the 2d FSSG, under Brigadier General Charles C. Krulak. At that point, the MARCENT forces in the AOR had grown so large that the logistics footprint had to expand to support a high intensity land campaigning mission that was normally the domain of the Army.

Recognizing the challenges involved, Brabham and Krulak divided sustainment responsibilities for the Marines among themselves. The division of labor played to the strengths of the two generals. Brabham, a career logistician with previous experience as the deputy director for logistics at USCENTCOM, organized the 1st FSSG to support the Marines at the

⁹⁸ Brown, *With Marine Forces Afloat in Desert Shield and Desert Storm*, 66–69, 132–133.

operational level. Krulak, an infantryman and former assistant division commander of the 2d MARDIV, task organized the 2d FSSG as the Direct Support Command to provide tactical logistics.⁹⁹

At Boomer's direction, Krulak started searching for a location to identify a forward Logistical Support Area for the attack just before Christmas 1990. Krulak selected Kibrit, which had many advantages: namely proximity to a seaport at al-Mishab, a hard runway, a source of water, and enough space to stage all the supplies for the 1st and 2d MARDIVs, which at the time were 100 kilometers south.¹⁰⁰ Such a location carried substantial risk, as Krulak estimated that the transportation requirements for moving ammunition immediately before the attack would overwhelm what limited assets he had and the only forces that were keeping Iraqi forces from destroying the ammunition stockpiles at Kibrit were a small security detachment from the 2d MARDIV and some Saudi and Qatari border screening forces.¹⁰¹

A major rationale for Kibrit's size was a requirement to support attached forces. On November 16, Lieutenant General Sir Peter de la Billière, the senior British commander in the coalition, had relinquished tactical control of the British 7th Armoured Brigade, under Brigadier Patrick A. J. Cordingley, to I MEF to bolster their ability to fight a mechanized defense in DESERT SHIELD.¹⁰²

As planning for DESERT STORM started to mature and the British 1st Armoured Division and 4th Armoured Brigade had closed in theater, de la Billière took the 7th Armoured Brigade back under British control on December 17, and placed the 1st Armoured Division

⁹⁹ Steven M. Zimmeck, *Combat Service Support in Desert Shield and Desert Storm*, U.S. Marines in the Persian Gulf, 1990-1991 (Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1999), 67.

¹⁰⁰ BGen Charles C. Krulak, "A War of Logistics," *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 55.

¹⁰¹ Zimmeck, *Combat Service Support in Desert Shield and Desert Storm*, 77-80.

¹⁰² Pearce, *The Shield and the Sabre: The Desert Rats in the Gulf 1990-1991*, 50.

under the tactical control of VII Corps, in spite of Cordingley's bitter opposition.¹⁰³ De la Billière made it clear to Schwarzkopf that he wanted British forces in the main attack, commensurate with British perceptions of their contribution to the war.¹⁰⁴ Those political sensitivities easily trumped tactical considerations, and in return, Franks relinquished to I MEF operational control of a "roughly equivalent" unit, the U.S. Army's 1st Brigade, 2d Armored Division (nicknamed the "Tiger Brigade," from its callsign), under Colonel John Sylvester, which closed on January 19, 1991.¹⁰⁵ Boomer was not happy with the trade, but he recognized that any armored forces were better than none, given the lack of heavy armor in his own Marine formations. The Marine Corps forces were never designed for sustained land campaigning, but once committed for DESERT SHIELD, withdrawal of those forces before DESERT STORM, regardless of their suitability for attacking a predominantly armored force as a second land army, was politically unthinkable. Schwarzkopf recognized that reality and squelched Arnold's attempt to describe the Marine part of DESERT STORM as a fixing attack.¹⁰⁶

After starting component-level planning for DESERT STORM on November 1, the MARCENT planners developed their initial concept for a direct attack and breach along the coast in front of the Arab forces, which Khalid rejected for reasons of national and cultural pride.¹⁰⁷ On January 22, 1991, Horner then approved a second proposal for an attack into Kuwait from the southwest. The concept involved a breach by the 2d MARDIV, then the 1st MARDIV conducting a passage of lines through the breach into Kuwait.¹⁰⁸ Such an operation

¹⁰³ Gordon and Trainor, *The Generals' War*, 176–177.

¹⁰⁴ Sir Peter de la Billière, "Oral History: Sir Peter de la Billière," *FRONTLINE: The Gulf War*, 1996, <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/billiere/1.html> (accessed April 30, 2012).

¹⁰⁵ Gordon and Trainor, *The Generals' War*, 178–179.

¹⁰⁶ *Ibid.*, 169–170.

¹⁰⁷ *Ibid.*, 181.

¹⁰⁸ LtGen Walter E. Boomer, "Persian Gulf Campaign: U.S. Marine Corps Operations COMUSMARCENT Command Brief," May 7, 1991, backup 3, Wars: Persian Gulf Operations Desert Storm (10 of 19), U.S. Marine Corps History Division.

was fraught with risk. In addition to the normal complexity of a passage of lines, doing so with such a large unit increases the complexity tremendously, let alone the additional difficulty of trying to do so in a breach, most likely under enemy contact. By February 1991, I MEF had received enough breaching equipment to outfit both of its divisions, allowing a far less risky attack.

On February 4, 1991, Boomer had decided on a two-division breach, but Krulak stated that he could not support that plan from Kibrit, based on the extended lines of communication that would have been required to support the 2d MARDIV's new attack position, 150 kilometers northwest of Kibrit. Krulak found a new location for a logistical support area, which he titled al-Khanjar approximately nine miles west of the Kuwaiti border. It was large enough to house ammunition, fuel, water, and a naval hospital, replicating the capability previously at Kibrit, to support both of the divisions in the attack. What made the 11,280 acre base notable was its construction, which started on February 6 literally from a desert plain to full operational readiness by February 20, including two field airstrips and a helicopter support facility, just four days before the start of the Phase IV ground offensive.¹⁰⁹

¹⁰⁹ Krulak, "A War of Logistics," 56. Krulak's name, "al-Khanjar," (an Arab curved dagger) for the new logistics base delighted the Arabs operating with the Marines.

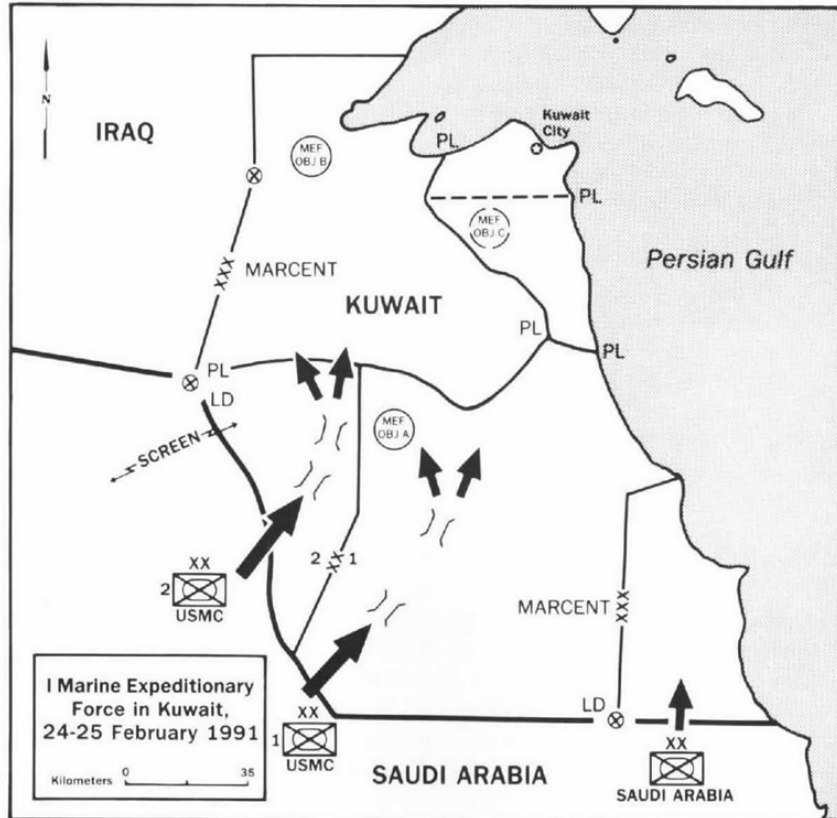


Figure 6: 1st MARDIV, 2d MARDIV breach lanes and initial and subsequent objectives.¹¹⁰

The preparation of al-Khanjar was but one example of the philosophy of maneuver warfare that General Alfred M. Gray, Jr., Commandant of the Marine Corps, had aggressively instituted. It was also testament to the efficacy of some of the Marine Corps' other initiatives after Vietnam, most notably in the conduct of amphibious warfare. These developments showed in the offensive operations of the two MARDIVs, which reflected the unique styles of their commanders.

Of the two, Major General J. Michael Myatt, commanding the 1st MARDIV and a Gray protégé, was a faithful practitioner of maneuver warfare. He had infiltrated reconnaissance units twenty kilometers into Kuwait three days prior to the attack and breach, and was in Kuwait City

¹¹⁰ Charles J. Quilter II, *With the I Marine Expeditionary Force in Desert Shield and Desert Storm*, U.S. Marines in the Persian Gulf, 1990-1991 (Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1993), 96.

International Airport by the third day of the attack.¹¹¹ The division was so successful tactically that it had reached the edge of Kuwait City hours before Schwarzkopf’s projected timeline, and well ahead of the Arab force units that were actually slated to retake the city. It had exploited its success so well that it outran the Arab units in the adjacent Joint Forces Command-East and almost threatened to unhinge the overall attack.¹¹²

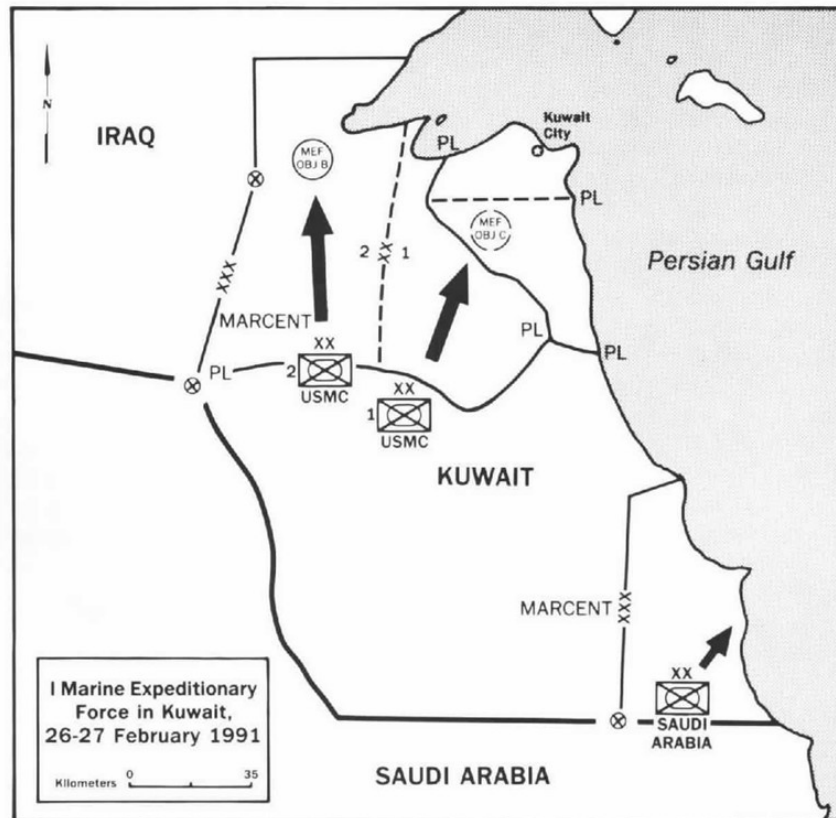


Figure 7: I MEF and Joint Forces Command-East attack to subsequent objectives. The area along the Kuwaiti coast, while technically part of the MARCENT area of operations, was meant to clear the path for Arab forces to attack into Kuwait City.¹¹³

Myatt, in an interview after the war, was publicly dismissive of the term “maneuver warfare,” but the underlying logic for what occurred was undeniably that of maneuver warfare,

¹¹¹ Boomer, “COMUSMARCENT Command Brief,” 49, 55.

¹¹² Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War* (Boston: Houghton Mifflin, 1993), 459. In the Marines’ defense, the Arab units’ pace was so glacial that advancing with those adjacent units represented unacceptable tactical risk.

¹¹³ Quilter, *With the I Marine Expeditionary Force in Desert Shield and Desert Storm*, 102.

expressed in Fleet Marine Force Manual 1, *Warfighting*. Myatt paid tacit homage to John Boyd in stating that what made things work for him was “in this order: people, ideas, and equipment.” Myatt’s declaration echoed almost verbatim Boyd’s own aphorism of “people, ideas, hardware – in that order.”¹¹⁴

Major General William M. Keys, commanding 2d MARDIV, was not an adherent of maneuver warfare concepts. Keys eschewed deploying the division to the field while at Camp Lejeune, tended to do his own battlefield visualization and generally kept his own counsel, much to his staff’s exasperation. However, the training base left by his predecessor, Major General Orlo K. Steele, was so sound that Keys did not need to give much close direction after the division had started the attack. Ironically, for a land-based attack, Keys elected to treat the division’s breaching plan much like an amphibious assault, laying out six assault lanes across a twelve kilometer desert frontage like a beach, using the term “breachheads” rather than “beachheads.” The investment made two decades prior toward reorienting the Marine Corps back to an amphibious mission paid an unintended benefit for Keys’ division, which also acquitted itself well during the conflict.¹¹⁵

In spite of the Marines’ embrace of maneuver warfare, one irony was inescapable. The operational mission that Schwarzkopf gave to MARCENT for the DESERT STORM ground offensive was, by Boomer’s own admission, a frontal attack. Such a form of maneuver was anathema to most maneuver warfare adherents, but Boomer had no choice. The I MEF dual breach was exactly the “high diddle diddle, straight up the middle” attack that Cheney had

¹¹⁴ Coram, *Boyd*, 354; MajGen J. M. Myatt, “The 1st Marine Division in the Attack,” *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 75.

¹¹⁵ Edwin H. Simmons, *The United States Marines: A History*, 3rd ed. (Annapolis, Md.: Naval Institute Press, 1998), 307. Quilter, *With the I Marine Expeditionary Force in Desert Shield and Desert Storm*, 78–79. LtGen (Ret) Paul K. Van Riper, interview by author, March 28, 2011, notes in author’s possession. Van Riper’s brother was the 2d MARDIV chief of staff during the conflict.

derided. Considerations above MARCENT obviated an amphibious attack and the only mitigation that Boomer could offer was speed, which I MEF delivered in spades.¹¹⁶ Where maneuver warfare became apparent was in the execution of the attack at the divisional level and below, from Myatt's infiltration reconnaissance and rapid attack to Keys's decentralized direction. The dislocation of the Iraqi forces in the attack was only an incidental condition to the ultimate destruction of the Iraqi force in the MARCENT zone of attack.

The westernmost objective in 2d MARDIV's zone was the city of al-Jahra and the Mutla Ridge, where the original USCENTCOM Offensive Campaign Briefing had envisioned the main attack for a single corps. That objective was left to the Tiger Brigade, whose attack, on the heels of the 3d Marine Air Wing's CAS attacks on retreating Iraqi forces attempting to flee Kuwait City to the north, left a swath of destroyed vehicles along Highway 8 near the Mutla Pass.¹¹⁷ In doing so, MARCENT effectively prevented any regular Iraqi Army forces in eastern Kuwait from repositioning to counter the VII Corps main attack on the Republican Guard, destruction of which was one of the termination criteria for DESERT STORM.

AirLand Battle Comes of Age

The traditional narrative of the U.S. Army in DESERT STORM that emerged after the war is one of redemption from the legacy of defeat in Vietnam.¹¹⁸ Not surprisingly, most of those histories describe the overwhelming tactical superiority of Army personnel and equipment over their Iraqi forces that opposed them. However, the Army's practice of operational art in

¹¹⁶ Walter E. Boomer, "Oral History: Walt Boomer," *FRONTLINE: The Gulf War*, 1996, <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/boomer/1.html> (accessed April 30, 2012).

¹¹⁷ Boomer, "COMUSMARCENT Command Brief," 55; Dennis P. Mroczkowski, *With the 2d Marine Division in Desert Shield and Desert Storm*, U.S. Marines in the Persian Gulf, 1990-1991 (Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1993), 64-65.

¹¹⁸ Some examples in this narrative include James Kitfield's *Prodigal Soldiers* and Al Santoli's *Leading the Way*, as well as *Certain Victory*, the Army's first history of the conflict.

DESERT STORM went far beyond the scope of tactical victory in close combat or the greatly improved equipment the Army had fielded in the 1970s and 1980s. Of pivotal importance to the Army's performance during DESERT STORM, however, was knowledge of the operational level of war, largely missing from the Army from the 1950s to the 1980s.

Similarly, the Army's investment in training and education in the 1980s had finally matured just in time for the end of the Cold War. The education in campaign planning at SAMS, which no other military school taught, paid off handsomely, not just in the SAMS graduates who augmented USCENTCOM and ARCENT, but also in the network of SAMS graduates who were already assigned to the divisions and corps that deployed to the AOR.¹¹⁹ Their staffs were also beneficiaries of the work done at the Army's Combat Training Centers (CTC), specifically the National Training Center (NTC), and later, the Battle Command Training Program (BCTP), to train the units and their staffs in the actual mechanics of maneuvering, fighting, and sustaining their organizations.¹²⁰ Those hard lessons paid off as ARCENT's concept of operations for DESERT STORM began to solidify.

The mechanics of a two-corps attack seemed innocuous enough until one examined the actual mechanics of moving thousands of armored vehicles in a coordinated attack against the Republican Guard. The foundations for that attack began in the mid-1980s when Lieutenant General Crosbie E. Saint, commander of III Corps, recognized that there was no doctrine that described what an armored corps looked like in an attack from the march, which Lieutenant Colonel Leonard D. Holder, one of the authors of the AirLand Battle doctrine, answered in a

¹¹⁹ LTG (Ret) Leonard D. Holder, interview by author, December 23, 2011, transcript in author's possession. Holder, a former director of SAMS, specifically mentioned that SAMS was unique in teaching theater campaign planning.

¹²⁰ Benson, "Educating the Army's Jedi," 160–162.

concept paper.¹²¹ The corps practiced the concept in a 1989 BCTP exercise, and learned about the difficulty in mounting such an attack, particularly in the aspects of command and control, staging forces, and logistics.

In a December 19, 1990 press conference, Waller mentioned inadvertently that ground forces would not be prepared to attack until possibly mid-February, followed quickly with a disclaimer that the Air Force and Navy were prepared to act immediately if need be.¹²² Waller knew that VII Corps was still in transit and would not have closed in time for a January 15 attack. Planners at the SUPCOM started developing a movement plan to stage forces west of the Wadi al-Batin and to work through the details of a transportation plan to move forces. As part of the operational deception plan, one planning constraint on the move was that no forces could stage west of the Wadi al-Batin before the start of Phase III of the campaign. The logistical demands placed on the SUPCOM required the establishment of two logistics support areas, one for each corps, as it moved into its respective attack position. Such a movement was a tortuous affair, with XVIII Airborne Corps move units hundreds of miles to their starting positions for the ground attack, while deploying VII Corps units from Dhahran to their own attack positions, further east¹²³

The two-corps attack that emerged after a series of back-and-forth sessions among Schwarzkopf, Yeosock, Arnold, and the corps commanders, had VII Corps, with the 1st Infantry Division (Mechanized), 1st Armored Division, 3d Armored Division, the 2d Armored Cavalry Regiment, and the 1st UK Armoured Division, conducting the primary attack just west of the Wadi al-Batin, hinging on the southwestern corner of Kuwait. VII Corps would attack into

¹²¹ COL(Ret) Richard Hart Sinnreich, interview by author, January 9, 2012, transcript in author's possession.

¹²² Schwarzkopf and Petre, *It Doesn't Take A Hero*, 394.

¹²³ Swain, *Lucky War*, 108, 118.

northern Iraq with the specific mission of destroying the Republican Guard. In support was XVIII Airborne Corps, consisting of the 24th Infantry Division (Mechanized), the 101st Airborne Division (Air Assault), the 82d Airborne Division, the 3d Armored Cavalry Regiment, and the 6th French Light Armored Division, with a flank security mission, partly to prevent the escape of the Republican Guard to the north, and to guard the western flank of VII Corps in the attack.¹²⁴

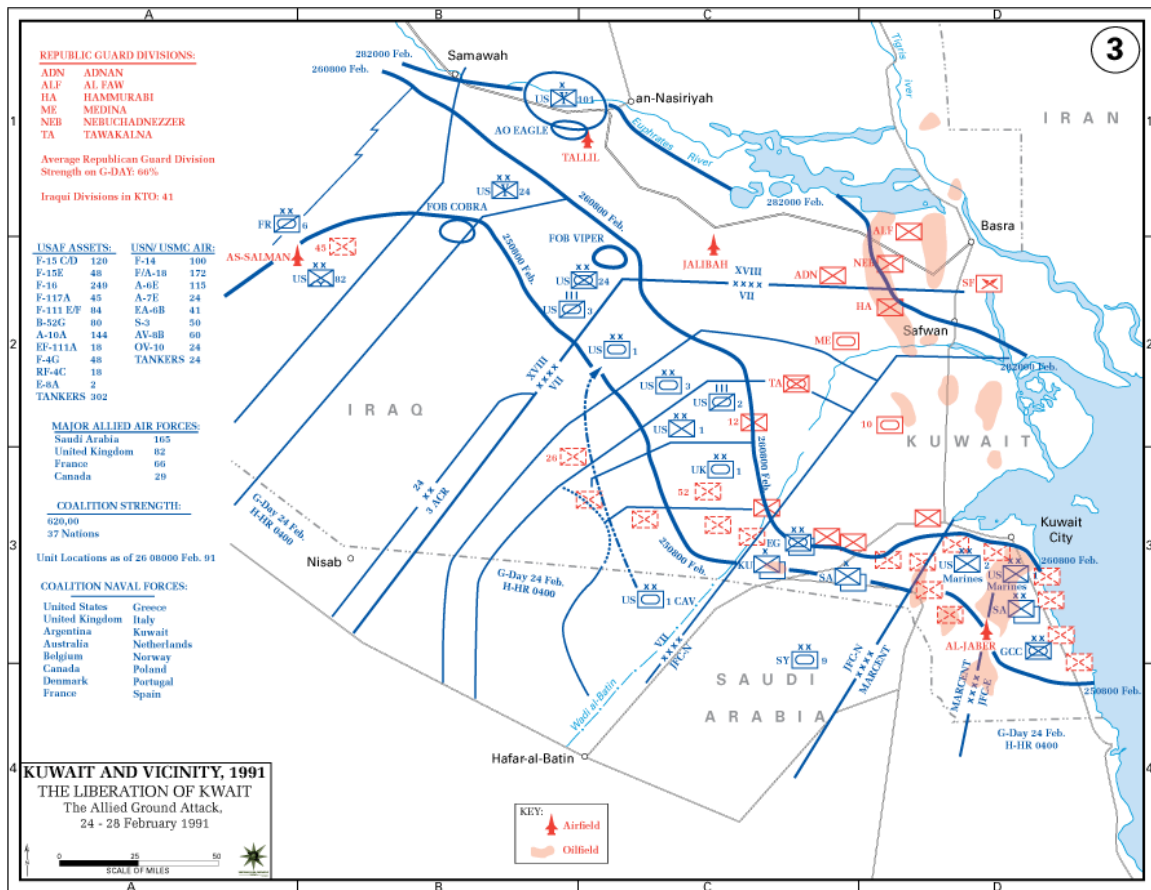


Figure 8: Operation DESERT STORM ground operations, February 24-26, 1991. Map courtesy of the Department of History, United States Military Academy¹²⁵

¹²⁴ The narrative for the development of the ARCENT concept of operations for the Phase IV attack appears in Swain, 106-127. Another discussion of the differences between the XVIII and VII Corps missions appears in *ibid.*, 206-209. In the interests of simplicity, I have mentioned only the two corps' major ground combat forces, the primary organizations charged with accomplishing their respective corps' missions.

¹²⁵ U.S. Military Academy Department of History, "Kuwait and Vicinity, 1991 - The Liberation of Kuwait, 24-26 February," *Atlases, The First Gulf War*, undated, <http://www.westpoint.edu/history/SiteAssets/SitePages/First%20Gulf%20War/GulfWarFirst03.gif> (accessed May 11, 2012).

Franks's primary consideration for his corps in the attack was to mass overwhelming force against the Republican Guard, rather than risk greater losses by attacking piecemeal. Based on his initial assessment of Iraqi forces in the defense, such a destruction mission required close synchronization within the corps in the attack to minimize expected losses from Iraqi combat action. Franks anticipated that VII Corps would face an Republican Guard mechanized infantry division, two Republican Guard armored divisions, and two Iraqi regular army armored divisions. Even if CENTAF had achieved its prewar goal of 50 percent attrition, VII Corps was still attacking into a force of equivalent size, and while Franks assessed VII Corps as being far more capable than Iraqi forces of comparable size, he wanted to minimize tactical risk while ensuring that he attacked with sufficient shock effect to destroy the Republican Guard. Schwarzkopf may have been generally dismissive about the tactical threat posed by Iraqi land forces, but in a crucial difference of opinion, Yeosock and the corps commanders did not share that assessment.¹²⁶

As a result, the notion of an operational pause, in Yeosock's words, "to determine what is where and ignore that which does not matter," became part of the attack.¹²⁷ That operational pause had most likely originated in the planners' assessments that the two corps risked culmination without an operational pause. Such a task was not unknown to VII Corps, which had practiced the task of "refueling on the move," with tactical units refueling and rearming at staggered intervals, in a corps BCTP exercise before the war. Not all of Yeosock's subordinates,

¹²⁶ Swain, *Lucky War*, 113. Tom Clancy and General Frederick M. Franks Jr., *Into the Storm: A Study in Command* (New York: Putnam, 1997), 253.

¹²⁷ Swain, *Lucky War*, 197.

however, understood the true character of an operational rather than a tactical pause.¹²⁸ Yeosock believed an operational pause, which was not defined in doctrine, did not require the two corps to stop operations. At the operational level, he saw both corps in a continuous attack. Only at the tactical level were actual units stopping to rearm and refuel, which unfolded in ways that were not part of the original plan. In VII Corps, the 1st Armored Division, which was in almost-continuous direct fire contact for over 24 hours, had to take on an emergency fuel resupply from the 3rd Armored Division, while in XVIII Airborne Corps, the corps support command asked for volunteers among the third country nationals to drive bulk fuel to a forward logistics base in Iraq to prevent the 24th Infantry Division and 3rd Armored Cavalry Regiment from running out of fuel as well.¹²⁹

Ironically, at the tactical level, the conduct of the attack was not to achieve the dislocation envisioned in AirLand Battle doctrine as much as it was attrition, borne out in Yeosock's own guidance to "take on the Republican Guard a bn [battalion] or a bde [brigade] at a time; a war of attrition to deliberately destroy it."¹³⁰ Yeosock and his corps commanders briefed Cheney on their readiness to attack on February 9, 1991, evincing a level of confidence in their ability to execute tactically that echoed the beliefs of their subordinate leaders as well.¹³¹ Many of the tactical units had been "blooded" at the NTC through the 1980s, with that

¹²⁸ COL Stan Cherrie, "Interview with Colonel Stan Cherrie, G3, VII Corps, 29 August 1991," interview by COL Richard M. Swain, August 29, 1991, 20–23, Box 2, SSG INT-013, Group Swain Papers, Gulf War Collection, U.S. Army Military History Institute.

¹²⁹ *Ibid.*, 26–27; COL(P) John G. Zierdt Jr., "XVIII Airborne Corps and U.S. Army Center of Military History Oral History Interview," interview by MAJ Robert B. Honec, June 10, 1991, DSIT AE 108, Operations Desert Shield and Desert Storm, <http://www.history.army.mil/documents/SWA/DSIT/DSIT108.htm> (accessed May 4, 2012).

¹³⁰ Swain, *Lucky War*, 197.

¹³¹ *Ibid.*, 126; Institute of Land Warfare (Association of the United States Army), *Personal Perspectives on the Gulf War*. (Arlington, Va.: Institute of Land Warfare, Association of the United States Army, 1993), 8.

experience leavening the force at large.¹³² However, the conduct of tactical operations did not involve much maneuver because the operational formations in which ARCENT heavy forces attacked gave little flexibility for such maneuver. Instead, those forces simply destroyed the Iraqi units that engaged them during the attack. The planned destruction of the Republican Guard, however, did not occur as forces escaped into Iraq escaped their planned destruction. The ground offensive of February 1991 achieved the first termination criterion for DESERT STORM, which was to force the withdrawal of all Iraqi forces from Kuwait. However, the failure to destroy the Republican Guard as an entity, as well as other termination objectives for DESERT STORM, planned or otherwise, were the focal points of controversy after the war, particularly among the different services.

DESERT STORM and the Practice of Joint Campaigning

Operation DESERT STORM, arguably the most one-sided military outcome of any conflict in the 20th century, showcased the results of the tremendous investment made in rebuilding the U.S. military after Vietnam. However, the conduct of operations in DESERT STORM brought latent rifts among the services to the surface. The rifts, which included the role of tactical air support during the conflict, the concept of functional component commanders, and the protection of service equities while executing a joint campaign, almost invariably stemmed from fundamental differences on purposes, roles, and missions. What it also hinted to was the need for a far more assertive joint force commander to control the process.

The Debate over Tactical Air Support

¹³² A particularly good account of the disparities in tactical skill appears in chapter 17 of Bourque, *Jayhawk!*, 323–348. A broader overview of the tactical performance of U.S. forces in the war appears in Robert M. Citino, *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare* (Lawrence: University Press of Kansas, 2004), 280–288. Swain’s own account in chapter 7 of *Lucky War*, a masterful history of ARCENT, is also useful.

The first major difference centered on the appropriate role and control of airpower in the conflict. The heart of that difference was a long-running debate between the Army and the Air Force over the differences between CAS, air interdiction (AI), and the hybrid that was battlefield air interdiction (BAI). That debate turned acrimonious during Phase III of the campaign, which in its original form had only specified “interdiction” as a necessary precursor to the ground offensive in Phase IV. One of the preconditions for transition to Phase IV was attrition of Iraqi ground forces to 50 percent strength. How that attrition was going to be orchestrated was a point of significant tension between ARCENT and CENTAF. It was also a confluence of a number of factors that all came to a head during DESERT STORM.

The leaders in the Army who had come through progressively more senior positions in the 1980s had grown up with Army and NATO doctrine that promised that the land commander, through BAI, would have an opportunity to specify the targets that airpower could attack. However, that doctrinal basis existed only in NATO. Instead of the hybrid of BAI, where a ground commander could directly nominate targets for attack under the control of an air commander, the arrangement only existed for a corps commander to nominate, rather than specify, targets for attack through AI to the theater army. The absence of BAI was particularly disconcerting for VII Corps, which had up to that point trained to fight as a NATO formation, under NATO doctrine.¹³³ Exacerbating that change was the placement of the fire support coordination line (FSCL) on the Saudi border with Iraq and Kuwait. In joint doctrine, a ground commander, in coordination with the appropriate tactical air commander, established a FSCL to ensure coordination of fires that he did not control but would directly affect his forces.¹³⁴

¹³³ Harold R. Winton, interview by author, March 7, 2012, notes and recording in author’s possession.

¹³⁴ One of the clearest explanations of the role of the FSCL appears in Lt Gen Merrill A. McPeak, “TACAIR Missions and The Fire Support Coordination Line,” *Air University Review* 36, no. 6 (October 1985): 65–72.

Part of the problem with the distribution of tactical air support rested in the differences in the underlying logic between Phase I and Phases III and IV of the USCENTCOM offensive campaign plan. The INSTANT THUNDER plan, true to its roots in Warden's work, emphasized attacking so-called "strategic centers of gravity," which was an attempt to disable Iraqi instruments of national power by defeating them in detail. Phases III and IV focused on the fielded military forces that Warden had seen as targets only of last resort in INSTANT THUNDER. In practice, the DESERT STORM ATO executed Phases I, II, and III almost simultaneously, reflecting Glosson's belief that the objectives of the first three phases were at least complementary, if not mutually supporting.¹³⁵

In the meantime, Army commanders had grown up with an AirLand Battle doctrine that had promised direct access to joint fires to strike the deep targets that Army forces could not attack with their own organic assets. During Phases I, II, and III, the USCENTCOM staff, in its role as the joint force land component headquarters, set the FSCL to the northern border of Saudi Arabia. Placing the FSCL that close to forces in their attack positions meant that the Army corps, and VII Corps in particular, had no way to directly shape the battlefield in the manner for which their commanders had trained. In response, VII Corps insisted on a "fair share" of CAS to enable it to attack targets out of the range of artillery, but short of the FSCL so it could retain control over the air arm.¹³⁶ What that request ignored was the allocation of air sorties to priorities other than the immediate tactical concerns of VII Corps, even if the corps was the main attack. Implicit to such an allocation was the promise that Schwarzkopf, the joint force commander, as well as his staff, would manage the overall execution of the campaign. Instead,

¹³⁵ Glosson, "DESERT STORY Oral History Interview," 57, May 29, 1991.

¹³⁶ 8th Air Support Operations Group, "8th Air Support Operations Group (ASOG) After Action Review Operation Desert Storm," November 6, 1991, 32-33, IRIS 0872573, Air Force Historical Research Activity, TF IV JFACC files 1 NOV 89 - 28 MAR 91.

Schwarzkopf delegated authority to move the FSCL down to the corps level, creating additional friction at the very time that VII Corps unsuccessfully tried to complete the destruction of the Republican Guard.¹³⁷

Management of the targeting process was also a joint force commander responsibility. However, the USCENTCOM joint targeting coordination board that was supposed to manage the process consisted only of a Marine lieutenant colonel, an Army captain, and an Air Force captain, with no ability to exercise joint oversight of the targeting process.¹³⁸ The lack of general knowledge of the ATO development process outside of the CENTAF headquarters and the absence of any substantive doctrine for air-ground operations at that time compounded that lack of oversight. In effect, Glosson's target list at CENTAF was the target list for the entire war effort. The disputes between the Air Force and the Army came to a head on February 5, when Arnold reported to Yeosock that ARCENT was getting less than twenty percent of its nominated sorties, with additional situation reports echoing the disconnect between nominated targets and their attack through AI. Only after Waller intervened, in conjunction with a temporary appointment as ARCENT commander while Yeosock underwent emergency surgery in Germany, broke the logjam.¹³⁹

One organization that existed to manage coordination between CENTAF and ARCENT was a battlefield coordination element (BCE), a liaison cell immediately subordinate to the theater army that processed requests for tactical air support, and shared the ARCENT intelligence, plans, and operations data with CENTAF. The BCE was actually resident in the Black Hole, and should have benefitted from the considerable communications links at

¹³⁷ Clancy and Franks, *Into the Storm*, 255, 427–430.

¹³⁸ Cohen, *GWAPS Volume 1, Part 1*, 171.

¹³⁹ Swain, *Lucky War*, 186–189.

Riyadh.¹⁴⁰ However, the BCE's counterpart at ARCENT, the Deep Operations Cell, was undermanned and not fully trained for their task, impeding communication with ARCENT.¹⁴¹ The absence of any substantive joint doctrine and the virtually nonexistent joint targeting board made that impotence more painful.¹⁴² Schwarzkopf's competing duties as joint force commander, in addition to his legendary rages when Franks and Yeosock tried to address the balance of AI sorties, left Waller as the only interlocutor.¹⁴³

What was missing was a single entity to speak for land power, much like the role of CENTAF for airpower. DESERT STORM marked the first incidence of a JFACC in American joint campaigning, a role that Horner at CENTAF was more than willing to embrace. He had a similar capacity in Seventh Fleet, acting as a joint force maritime component commander (JFMCC). Those organizations provided Schwarzkopf a single commander for matters pertaining to air and naval matters respectively, regardless of the actual command relationships involved.¹⁴⁴ Land power was more problematic.

The Army, Marine Corps, and a Joint Force Land Component Commander

Of the USCENTCOM subordinate commands, ARCENT arguably had the most diverse responsibilities. First, ARCENT was the senior Army headquarters in the AOR, responsible for providing Army-peculiar support from the Army's other commands in the United States, Europe, and Asia. In addition to those duties, it also exercised executive agent responsibilities for joint functions, meaning that it was responsible for providing certain services, such as theater-level communications and common-user logistics across the U.S. military forces, and eventually some

¹⁴⁰ Cohen, *GWAPS Volume 1, Part 2*, 8, 87.

¹⁴¹ LTC William G. Welch, "Notes from the BCE-Observations on Joint Combat Operations at Echelons Above Corps," *Field Artillery* (June 1992): 18.

¹⁴² Lt Col R. Kent Laughbaum, *Synchronizing Airpower and Firepower in Deep Battle* (Maxwell Air Force Base, Ala.: Air University Press, 1999), 34.

¹⁴³ Swain, *Lucky War*, 185–188.

¹⁴⁴ Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 64–66, 1997.

of the coalition forces in the AOR, a mission that the SUPCOM executed on ARCENT's behalf. Finally, ARCENT had operational responsibilities as a field army, directing the maneuver and combat operations of subordinate divisions and corps.¹⁴⁵

Although Schwarzkopf had made ARCENT the executive agent for planning the ground offensive, ARCENT was not a joint force land component commander (JFLCC). Unlike CENTAF and Seventh Fleet, Schwarzkopf had one Marine and three Army lieutenant generals serving as ground force commanders in the AOR. The last time that one service had exercised control over the other was World War II, and it had not ended well.¹⁴⁶ Schwarzkopf, in spite of heavy pressure from Washington, felt that adding a JFLCC commander would have been a needless additional layer of command in a theater that by November 1990 was already mature. Instead, Schwarzkopf requested, and received Lieutenant General Calvin A. H. Waller, at the time the commander of I Corps at Fort Lewis, Washington. Waller had been the deputy commanding general when Schwarzkopf commanded I Corps, so he was already familiar with Schwarzkopf's demeanor and command style.¹⁴⁷ Waller's professional background as an armor officer was well-suited to the anticipated battle, and he served as a buffer between Schwarzkopf's mercurial rages and the USCENTCOM staff and components. Waller could also manage direction and guidance for land power operations so that Schwarzkopf could be freed to act more in the capacity of a joint force commander than was his role alone.¹⁴⁸

One compelling reason for not having a separate JFLCC commander was that Schwarzkopf had to manage, within a parallel command structure, Arab forces under Khalid, as

¹⁴⁵ LTG John J. Yeosock, "Army Operations in the Gulf Theater," *Military Review* LXXI, no. 9 (September 1991): 4–5.

¹⁴⁶ Marine Lieutenant General Holland Smith, commanding the 5th Amphibious Corps on Saipan in 1944, relieved Army Major General Ralph Smith, commanding the 27th Infantry Division, for failing to "attack on time."

¹⁴⁷ Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 75–78, 1997.

¹⁴⁸ Calvin A. H. Waller, "Oral History: Cal Waller," *FRONTLINE: The Gulf War*, 1996, <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/waller/1.html> (accessed April 30, 2012).

well as British forces under de la Billière, both of whom retained ultimate command authority for their national forces. Schwarzkopf may have been an American joint force commander with the largest national contingent, but he was not a supreme commander by any stretch.

Service equities were another reason. Yeosock and Boomer were both USCENTCOM service component commanders. Although nothing in doctrine or statute prohibited I MEF from being subordinated to ARCENT, Boomer's responsibilities to MARCENT and I MEF made such an arrangement impractical. The other traditional Marine fear was that of an Army commander breaking up the MAGTF for its air combat element, which was anathema for Boomer, or any other MAGTF commander. Boomer had competing responsibilities between his role as Commanding General of I MEF and his other role as MARCENT Commanding General. Given a choice between the two, Boomer focused internally, electing to more closely manage the combat operations of I MEF.

The Marines did, however, bolster the capabilities of the other members of the DESERT STORM coalition, producing an arrangement that Swain called a "piano key" deployment of forces.¹⁴⁹ Placing American units adjacent to the Egyptian-led Joint Forces Command-North and the Saudi-led Joint Forces Command-East offered a way to provide ready access to some of the enablers that only American forces possessed.

Placing I MEF near the shore was also a matter of practical sense. The disposition of the 4th and 5th MEBs provided Schwarzkopf with an amphibious threat to fix Iraqi forces away from the VII Corps attack, which the Iraqis regarded as credible.¹⁵⁰ However, had those forces actually been required, they would have been placed under the operational control of the I MEF commander, so having the Marines closer to the coast made sense. That proximity paid off when

¹⁴⁹ Swain, *Lucky War*, 129.

¹⁵⁰ Brown, *With Marine Forces Afloat in Desert Shield and Desert Storm*, 196.

the 5th MEB offloaded from sealift at Ras al-Mishab and came under the operational control of I MEF on February 23, 1991 as the MEF reserve. After offloading, it completed integration and onward movement using its own vehicles and aircraft in a 28-hour period, through Kibrit to Khanjar, while 4th MEB remained at sea to continue the amphibious deception.¹⁵¹

The employment of the service components during the war was a work in progress. The personnel in those components were products of a Defense Department before Goldwater-Nichols. While the intervening years between the passage of the bill and the beginning of the war had clarified the authorities of the combatant commanders and greatly improved the quality of their staffs, not all the services had yet adapted to the changes in those equities.

The Navy's Role in a Land War

The Navy is conspicuous by its relative absence during DESERT SHIELD and DESERT STORM. Some of the rationale, of course, stems from the basis of the Navy's possible contribution to a land war, the majority of which appeared in the carrier battle group air wings. The relative contribution of the Navy, however, was underpinned by an fiercely independent streak, which colored its relations with USCENTCOM and its service components.

Previous to DESERT SHIELD, the Navy had opposed the establishment of USCENTCOM, recommending that the Rapid Deployment Joint Task Force be retained instead. What made the Navy's involvement contentious was the division of the USCENTCOM AOR, in which the entire Indian Ocean up to the Strait of Hormuz was in the U.S. Pacific Command (USPACOM) AOR, which excluded all of the sea lanes transiting the USCENTCOM AOR.

¹⁵¹ Ibid., 166–173.

Schwarzkopf had to negotiate a change in the USCENTCOM AOR so that USCENTCOM was the supported command for naval forces 48 hours out from the Strait of Hormuz.¹⁵²

At the beginning of the war, Schwarzkopf had a dedicated navy component command in name only; the NAVCENT commander was a captain who had been selected for rear admiral, but located at Pearl Harbor at the USPACOM naval component command. The junior rank and effective subordination to USPACOM meant that the Navy was largely absent from the deliberate planning process involved in revising OPLAN 1002-90. In Schwarzkopf's own words, "the Navy didn't play at all. Period. They wanted nothing to do with us."¹⁵³

With the start of DESERT SHIELD, Schwarzkopf spoke with Admiral Frank Kelso, Chief of Naval Operations, and Admiral Huntington Hardisty, USPACOM Commander in Chief, on the need for a flag officer and his staff to fill the NAVCENT role. Hardisty selected Vice Admiral Henry H. Mauz, commander of Seventh Fleet and his staff to fill that requirement. Upon his arrival in the AOR, Mauz received instructions from Schwarzkopf to take command of all naval forces in the AOR immediately.¹⁵⁴

Broadly, NAVCENT had several missions in addition to the tactical air support (in excess of fleet defense requirements), naval gunfire, and amphibious operations previously described. It was also responsible for maritime interception operations to enforce sanctions on Iraq, intratheater sealift, and ensuring freedom of navigation along the sea lines of communication in and around the AOR.¹⁵⁵ Most of those missions could be done without much involvement with the other components. Although there were combat actions at sea, and some ships damaged by

¹⁵² Cole et al., *The History of the Unified Command Plan, 1946-1999*, 77–78, 84–85. Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 48–49, 1997.

¹⁵³ Schwarzkopf, "Senior Officer Oral History Program: General H. Norman Schwarzkopf," 47–50 passim, 1997.

¹⁵⁴ Marvin Pokrant, *Desert Shield at Sea: What the Navy Really Did* (Westport, Conn.: Greenwood Press, 1999), 7–11.

¹⁵⁵ *Ibid.*, 6.

Iraqi mines in the Persian Gulf, the losses to the force were primarily tactical in scope, and did not affect the operational conduct of the war.¹⁵⁶

The same conflict between the role of a service component and as an operational commander that Boomer experienced as MARCENT commander occurred with Mauz, commanding NAVCENT. The issue at hand was between concentrating internally on fighting the component's maritime task forces, or externally as senior advisor to Schwarzkopf on the use of naval combat power. Mauz, whose peacetime responsibilities were solely to Seventh Fleet, chose to remain at sea, deploying Wright's detachment instead as NAVCENT Riyadh. Wright, unfortunately, was far junior to the other component commanders who were physically present in Riyadh and found himself on the outside of the proceedings.¹⁵⁷

The NAVCENT contribution to campaign planning was relatively minimal. Mauz's location on USS *Blue Ridge* made it difficult for his planners to make substantive contributions to campaign direction, a problem that also plagued his successor, Vice Admiral Stanley R. Arthur, who believed his proper place was in Riyadh, but was unable to transfer his flag to that location. While the Navy was opposed to CENTAF's assumption of the JFACC role, they brought no comparable system to plan or direct air operations on a theater basis. In the absence of a system like the ATO and a single air manager, fratricide was a very real possibility, which almost occurred between Navy F/A-18 and Air Force F-16 fighters on August 10, 1990, before the DESERT SHIELD ATOs went into effect.¹⁵⁸

The overall process of campaigning itself, or the notion of operational art, was mostly unknown at NAVCENT. The absence of comprehensive joint doctrine for campaigning, and the

¹⁵⁶ Among the ships damaged by mines were the USS *Tripoli*, an *Iwo Jima*-class amphibious assault ship, and USS *Princeton*, a *Ticonderoga*-class guided missile cruiser.

¹⁵⁷ Pokrant, *Desert Shield at Sea: What the Navy Really Did*, 19.

¹⁵⁸ Ramsdell, "NHC Trip Report," 4. Pokrant, *Desert Shield at Sea: What the Navy Really Did*, 70.

utter failure of all of the services to accept joint doctrine sufficiently directive to manage all the forces was problematic for the force as a whole, but even more so for the Navy. A report to the Naval Historical Center gave a dim assessment of the Navy's preparation for joint operations. One was a lack of knowledge on the operational level of war or campaigning, and a general ignorance of the joint force command structure. The cultural disdain many naval officers had for resident professional military education meant there was no intellectual cover for absences in doctrine, as those officers defaulted to the technical skills within their communities.¹⁵⁹ Those skills, mostly tactical, were useful to the immediate missions for which NAVCENT was charged. Their considerable technical expertise could not help them when faced with problems that only a broader nontechnical education in operational art and strategy could answer. Culturally, the Navy was unwilling to adapt to the joint environment after the passage of Goldwater-Nichols. The price it paid was exclusion from the proverbial table in the joint campaign.

The Campaign vs. the “Campaigns”

DESERT STORM, by any standard, was the first large joint campaign of the post-Goldwater-Nichols era. Whether it was a successful campaign or not is a matter of debate. The termination criteria for DESERT STORM, laid out in NSD-45, were certainly clear. The centerpiece of operational art during DESERT STORM was the unified employment of all the services during the campaign to achieve those objectives, the effectiveness of which varied during the campaign. The considerable friction involved in the conduct of operational art was not fatal to the Coalition's war effort, but went relatively unnoticed in the post-war celebrations of the one-sided tactical outcomes of the war.

¹⁵⁹ Ramsdell, “NHC Trip Report,” 5–6. See also Wages, “COMUSNAVCENT/AFLO End of Tour Report,” 4–7.

At the tactical level, the U.S. military dominated their Iraqi counterparts. Any doubts as to the benefits gained from the considerable effort spent on modernizing the force and the development of AirLand Battle, the professionalization of the TAF, and the institutionalization of maneuver warfare were instantly dispelled after February 22, 1991. The efforts to man, train, equip, and deploy a force capable of beating the Soviets outnumbered were readily apparent at the tactical level.

Those efforts generally split along service lines. Although a basis in training existed among some of the services sufficient to establish procedures like BAI, those procedures were not standardized across the joint force, as VII Corps found to its chagrin. The disputes over targeting and the balance of air interdiction, the locations of the FSCLs, the controversy over the use of the ATO to centralize control of airpower, and the failure to destroy the Republican Guard were all the result of attempts to synchronize the system from tactical action within their own service domains. What was missing was the direction from a joint force commander that only Schwarzkopf could impose.

The essential mechanism was coercion, vice brute force. INSTANT THUNDER rested on assumption that airpower could coerce the Iraqis into agreeing to the coalition's terms. In comparison, Horner and his Army and Marine counterparts believed that only destruction of the Republican Guard could achieve those ends since it would deny Saddam Hussein a tool of compellence, which was coercion by other means.¹⁶⁰ Those dynamics, though, were the purview of a joint force commander and his staff. The decision to fight as service components during DESERT STORM, while grounded in the realities of the various services and their cultures,

¹⁶⁰ For coercion and brute force, see Daniel Byman and Matthew C. Waxman, *The Dynamics of Coercion: American Foreign Policy and the Limits of Military Might* (New York: Cambridge University Press, 2002), 3–9. An exploration of coercion and denial as defeat mechanisms appears in Robert Anthony Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996).

meant that the only place where the linkage of the tactical, operational, and strategic levels of war inherent to operational art could occur was USCENTCOM. The components and their commanders, typically split between their component responsibilities to CENTCOM and their services, and their own responsibilities in their own tactical domains, were simply executors of that joint vision.

The terms “air campaign” and “ground campaign” to refer to the efforts of service or functional components were common usage at the time, ranging from INSTANT THUNDER to the Defense Department’s final *Conduct of the Persian Gulf War* report to Congress in April 1992.¹⁶¹ In reality, though, no such air or ground campaigns existed. Campaigning occurs to achieve that campaign’s termination criteria, which can only come from the ends that only policy and strategy could provide. Warden’s fundamental assertion on airpower notwithstanding, no one component alone was capable of achieving all of the termination criteria outlined in NSD-45 and later in Combined OPLAN DESERT STORM. Even if President Bush had authorized the use of aerial-delivered nuclear weapons or a ground march on Baghdad, neither would have delivered the desired strategic ends at an acceptable price to the United States. The combination of the strategic ends, and the circumstances governing the protracted employment of military forces over expeditionary distances meant that operational art was necessarily joint in character.

One relative void in the conduct of operational art during DESERT SHIELD and DESERT STORM was the interplay between strategic art and campaigning. The policy objectives in NSD-45 defined the strategic ends of what DESERT STORM was to accomplish. The practice of strategic art occurred primarily from Washington, adding diplomacy and economic sanctions against Iraq that reinforced the campaign that was Schwarzkopf’s

¹⁶¹ Chapter VI, VII, and VIII of *Conduct of the Persian Gulf War* are titled “The Air Campaign,” “The Maritime Campaign,” and “The Ground Campaign” respectively. That erroneous usage persists even today.

responsibility as a joint force commander. Horner was not the only one who remembered Vietnam; aside from Powell's desire for overwhelming force in the form of two Army corps and Cheney's disdain for the "high diddle diddle, straight up the middle" plans for the ground offensive, Schwarzkopf had a relatively free hand to conduct his campaign, and he did not request additional policy guidance for conflict termination. As a result, the coalition campaign occurred in a strategic environment that was relatively static. Assessments of Iraqi military capability notwithstanding, upon the commencement of offensive operations on January 17, 1991, the conduct of operational art in DESERT STORM focused heavily towards the execution of tactics through the components that actually prosecuted combat operations. The DESERT STORM plan, focused almost exclusively on ejecting Iraqi forces from Kuwait, did not closely examine the restoration of the Kuwaiti government and stabilizing the Persian Gulf region, but the full conduct of operational art warranted examination of all of the termination criteria, addressed in other plans that were to follow DESERT STORM.¹⁶²

Even Glosson, one of the most partisan airmen in the AOR, recognized his service's failures to link the tactical, operational, and strategic. In his words, "I believe we've shortchanged ourselves...we have done a fairly good job of strategic thinking, in my opinion, relative to the other services, and we have done a good job of tactical execution. But we've never dealt with how you connect the two."¹⁶³ Even the Army's much-vaunted Jedi represented but a niche capability. In the immediate aftermath of DESERT STORM, the Department of Defense and its services took strides to address what the conflict had laid bare. The disappearance of an

¹⁶² The USCENTCOM staff did prepare sequel plans addressing if Iraqi forces withdrew without fighting, as well as a post-conflict stabilization plan for a follow-on defense and reconstruction of Kuwait after Iraqi withdrawal, but did not execute those plans as part of DESERT STORM. U.S. Central Command and Joint Forces and Theater of Operations, "Combined OPLAN for Defense and Restoration of Kuwait" (U.S. Central Command, January 13, 1991), IRIS 0269607, Air Force Historical Research Activity; U.S. Central Command and Joint Forces and Theater of Operations, "Combined OPLAN for Defense of Kuwait and Saudi Arabia" (U.S. Central Command, February 22, 1991), IRIS 0870454, Air Force Historical Research Activity.

¹⁶³ Glosson, "DESERT STORY Oral History Interview," 33–34, May 29, 1991.

existential Soviet threat and the Department of Defense's subsequent fiscal retrenchment meant hard times for the theory and rhetoric of operational art after the war.

Chapter 8

The Catastrophic Success of DESERT STORM and the Peace Dividend: 1991-1997

The problem, to repeat, is that the United States has a severe strategy deficit. It is, and has long been, guilty of what is known as the “tacticization” of strategy. US military power does tactics well and tends to expect success at that level to translate automatically into strategic victory.

Colin S. Gray¹

In an ironic twist of historical contingency, Saddam Hussein’s decision to invade Kuwait could not have come at a better time for the U.S. military. The invasion’s coincidence with the evaporation of the Soviet military threat to Western Europe allowed the United States to deploy forces to southwestern Asia in such numbers that the U.S. mustered the overwhelming military force it desired before annihilating Iraqi Army and Republican Guard units in tactical combat. Those U.S. forces returned to their home bases victorious after the conflict, only to face a drastic drawdown of personnel and organizations in the early 1990s.

During those years, however, the U.S. military continued to explore the theory and practice of operational art, which had become a commonly accepted concept in the wake of DESERT STORM. One unsung development that appeared in that period was a series of joint doctrinal publications sufficiently authoritative enough to serve as a basis for the rhetoric and practice of operational art across all the services. Before that umbrella doctrine was promulgated, only service-centric and generally incomplete approaches to operational art had existed. The advent of that body of doctrine also marked the requirement, within the limits of joint consensus, for the writing of service doctrinal publications to support joint doctrine.

¹ Colin S. Gray, *The Airpower Advantage in Future Warfare: The Need for Strategy* (Maxwell Air Force Base, Ala.: Airpower Research Institute, 2007), 4.

However, the emergence of operational art as a commonly understood concept did not stop the services or the joint force from refocusing their attention predominantly on the tactical level of war, and the post-Cold War U.S. military drawdown made that tendency only worse. The perceived absence of a peer competitor like the Soviet Union lulled the U.S. military into a vision that only offered tactical solutions to strategic problems.

Strategic Context after the Cold War

The collapse of the Soviet Union marked a sea change in the strategic environment. One indicator of that change appeared in a requirement imposed by the Goldwater-Nichols Act, which mandated that the President publish a National Security Strategy report every two years.² While the reports up to 1990 had focused primarily on the Soviet Union, the end of the Cold War dictated changes in focus. The 1990 *National Security Strategy* envisioned conventional deterrence through forward presence of U.S. military forces, albeit at lower levels in Europe than had been required to deter a Soviet attack.³ The disintegration of the Soviet Union in 1991 and the outcomes of Operation DESERT STORM marked a shift so significant as to necessitate a dramatically revised *National Security Strategy* report.

The 1991 *National Security Strategy* continued to acknowledge commitments to Europe and Asia, but it introduced a bolder challenge to all of the services, one grounded in the promise of a “peace dividend” after the Cold War. That challenge appeared in a section describing “Minimum Essential Military Forces - The Base Force.” When General Colin L. Powell,

² *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, Public Law 99-433, § 60, *U.S. Statutes at Large* 100

³ President, *National Security Strategy of the United States, 1990-1991* (Washington, D.C.: G.P.O., 1990), 25–26.

Chairman of the Joint Chiefs of Staff, assumed his duties in October 1989, he had anticipated the likelihood of a greatly reduced Soviet threat with commensurately reduced defense budgets.⁴

The Base Force mentioned in the 1991 *National Security Strategy* was a direct outgrowth of Powell's vision for a recommended minimum force, predating either of the strategy documents.⁵ While some of the combatant commanders supported the Base Force, the service chiefs strongly opposed Powell's proposed budgetary cuts, believing them to be intolerable.⁶ Powell's 1992 *National Military Strategy* report detailed the proposed composition of the Base Force, which included the heavy cuts in force structure that the service chiefs feared. All of the services had to make substantial reductions in the amount of forces they could retain, with the heaviest reductions to the Army and the strategic nuclear force.⁷ That forced austerity brought the services' true priorities into plain view; rather than further developing the institutions necessary for operational art, the services turned inward—back to the tactical level of war.

Educating and Training for Operational Art in the Marine Corps after DESERT STORM

The Marine Corps entered the 1990s bearing the imprint of General Alfred M. Gray, Jr., Commandant of the Marine Corps from 1987 to 1991. The most immediate results of Gray's advocacy of maneuver warfare appeared initially in its doctrine, but more tangibly, in a completely revamped establishment for professional military education. However, consistent with its direction after other wars, the Marine Corps was always seeking to differentiate itself

⁴ Lorna S. Jaffe, *The Development of the Base Force, 1989-1992* (Washington, D.C.: Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 1993), 11–15.

⁵ *Ibid.*, 21; President, *National Security Strategy of the United States, 1991-1992* (Washington, D.C.: G.P.O., 1991), 31.

⁶ Jaffe, *The Development of the Base Force*, 21–28.

⁷ Chairman of the Joint Chiefs of Staff, *National Military Strategy of the United States, 1992* (Washington, D.C.: G.P.O., 1992), 19.

from the Army, and embraced, with the Navy, a new operational concept for the 1990s. The future direction of the Marine Corps, however, seemed to be on a different path by the end of the 1980s.

In spring 1990, Gray was a guest speaker at the U.S. Army Command and General Staff College (CGSC). In his remarks to the audience, Gray announced what he called “Big Al’s Junkyard Sale.” Gray asserted that maneuver warfare would allow the Marine Corps to dispense with the M1A1 tanks that it was slated to receive, heavy artillery, F/A-18 strike fighters, and much of its amphibious assault vehicle fleet. In Gray’s vision, a light force equipped with helicopters, AV-8B Harrier short takeoff/landing attack aircraft, wheeled light armored vehicles, medium/light artillery, and some light infantry could use maneuver warfare to defeat an enemy in detail rather than wearing down that enemy through slogging matches.⁸

Gray’s proposition echoed the thoughts of several maneuver warfare advocates. Their arguments appeared in the *Marine Corps Gazette*.⁹ In the wake of the maneuver warfare debate in the 1980s, the *Gazette* was the forum for a lively debate over lightening the force. The rationale was that lighter forces would be more agile tactically and operationally, requiring less logistical support, thus extending their operational reach. The debate focused on whether the lethality inherent in heavier combat systems was more important than the difficulties that Marines might face in trying to support those forces, whether tactically or operationally. The risk was creation of a force that lacked sufficient operational durability to accept decisive

⁸ George S. Lauer, interview by author, February 2, 2012, recording in author’s possession. Lauer, a Marine infantry officer, was a CGSC student when Gray gave his remarks. Light, medium and heavy artillery refer respectively to artillery pieces firing projectiles of 105mm, 155mm, and larger than 155mm in diameter.

⁹ Among the articles marking this trend were Capt Bruce I. Gudmundsson, “New Tanks for Old: How Marines Should Think About Armored Vehicles,” *Marine Corps Gazette* 72, no. 12 (December 1988): 51–55; MAJ Karl J. Gunzelman, “The M1A1-Too Much of a Good Thing?,” *Marine Corps Gazette* 73, no. 6 (June 1989): 32–33; William S. Lind, “Light Infantry Tactics,” *Marine Corps Gazette* 74, no. 6 (June 1990): 42–47; Col Michael D. Wyly, “The Significance of Light Infantry,” *Marine Corps Gazette* 75, no. 1 (January 1991): 53–55.

engagement in close combat, let alone the forcible entry operations and contingency response missions that the Marine Corps saw as core competencies.

Marine combat actions during operations DESERT SHIELD and DESERT STORM brought the discussion of lightening the force into question. In August 1990, in the first few weeks of force deployments into the Arabian Peninsula, one of the most credible deterrents that rolled off the Maritime Prepositioning Squadron ships at Dhahran were the 123 M60A1 tanks of the 7th Marine Expeditionary Brigade (MEB).¹⁰ The spectacular success of Marine Corps M1A1 crews during DESERT STORM proved another endorsement for the capabilities of heavy armored forces for Marine Corps missions, especially in the breaching and deliberate attack operations that occurred during the war.¹¹ Lightening the force suddenly looked less feasible in the wake of the war.

General Carl E. Mundy, Jr. succeeded Gray as Commandant in 1991. Some maneuver warfare advocates were skeptical of Mundy's appointment, believing that he would rescind the changes that Gray had enacted. None were more outspoken than William S. Lind, who had gone so far as suggesting to some junior officers which Marine generals they should trust—Mundy not among them. Lieutenant General William R. Etnyre, commanding general at Quantico, was so enraged that he banned Lind from the base.¹² Mundy reversed elements of the lightening of the force that Gray had proposed but did not rescind FMFM 1. The debate over maneuver warfare was far from over, but by 1991, it was an accepted part of the Marine Corps lexicon.¹³ Some of

¹⁰ Lauer, interview, February 2, 2012.

¹¹ Maj Stanly C. Owen, "Marine Corps M1A1 Tanks in Operation Desert Storm," *Amphibious Warfare Review* 10, no. 2 (Summer/Fall 1992): 54.

¹² Edgar F. Puryear, *Marine Corps Generalship* (Washington, D.C.: National Defense University Press, 2009), 46, 53. Gray is very diplomatic in his comments on the differences in schools of thought between him and Mundy (who served as Gray's subordinate twice as a regimental and battalion commander), although he alludes to some letters from Lind that were highly critical of Mundy on maneuver warfare. Bruce I. Gudmundsson, interview by author, March 15, 2011, notes in author's possession.

¹³ Lauer, interview, February 2, 2012.

that acceptance also owed to the changes that had occurred on Gray's watch for professional military education in the Marine Corps.

Although Gray is known by many as the Commandant that made maneuver warfare the Marine Corps' official philosophy, one legacy that may be far greater was the reform of the Marine Corps' establishment for officer professional education. Gray's tenure as Commandant marked three major initiatives at Quantico: Marine Corps University, the School of Advanced Warfighting, and the Marine Corps War College.

The path for educating Marine officers in the late 1980s went up to the Command and Staff College (CSC), which until 1988 divided its curriculum among landing force operations, command, and battle studies and strategy. Although the course focused mostly on tactics, it introduced strategy, using military history case studies for both. Operational art and campaign planning were distinctly absent from the course. Gray directed the addition of an "operational level of war" block to the course, starting in 1989.¹⁴

The other change Gray wanted to make was regarding the reputation of the course. The CSC suffered the from being a poor relation to the Amphibious Warfare School (AWS), which was considered the Marine Corps' premier education institution, and in summer 1988, Gray sent a trusted subordinate, Colonel Paul K. Van Riper, to serve as CSC director with the express purpose of fixing the school. The importance paid to AWS, taught captains combined arms warfare at the battalion/squadron level and below, spoke volumes about the Marines' culture,

¹⁴ Donald F. Bittner, *Curriculum Evolution: Marine Corps Command and Staff College, 1920-1988* (Washington, D.C.: Headquarters, U.S. Marine Corps, History and Museums Division, 1988), 67-73; Donald F. Bittner, "Marine Corps Command and Staff College," in *Professional Military Education in the United States: A Historical Dictionary*, ed. William E. Simons (Westport, Conn.: Greenwood Press, 2000), 188-189.

which was overwhelmingly tactical. Van Riper served in that capacity until August 1, 1989, after promotion to brigadier general and receipt of another assignment.¹⁵

Van Riper's next position was the presidency of the newly-activated Marine Corps University (MCU). The mission of the new organization was to improve professional military education across the entire Marine Corps. Although the MCU was not an organization specifically chartered with developing operational art, it provided a single organization to coordinate all the officer education curricula across the Marine Corps, from initial entry up to CSC, which at the time was the highest school in the Marine Corps. The MCU also provided a framework for the expansion of education in the Marine Corps to include strategy and operational art.¹⁶

In late September 1989, a group of faculty at CSC called the "New Curriculum Working Group" met to start developing proposals for two schools. The first was a proposed "School of Advanced Warfighting" (SAW), a course initially patterned on the Army's School of Advanced Military Studies (SAMS). The intent of SAW was intentionally broad, to provide "officers who are specially educated in the capabilities, limitations, and requirements of United States military institutions and who can apply that knowledge to improve the warfighting capabilities of the Nation."¹⁷ This proposal came just five months after a highly influential report published by Representative Ike Skelton's November 1988 House Armed Services Committee Report of the

¹⁵ LtGen (Ret) Paul K. Van Riper, interview by author, May 12, 2012, recording and notes in author's possession.

¹⁶ Headquarters, U.S. Marine Corps, "ALMAR 128/89: Activation of the Marine Corps University," 131952ZJUL89, Supporting Documents, Folder 2, Box 450, Marine Corps Combat Development Command files, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

¹⁷ New Curriculum Working Group, Command and Staff College, "Intent and Objectives, School of Advanced Warfighting," September 25, 1989, Correspondence, Box 19/B/1/8, School of Advanced Warfighting files, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

Panel on Military Education, which stressed the need to teach strategy and operational art, citing the Naval War College and SAMS respectively as exemplars.¹⁸

One significant difference in the employment of SAW graduates was that unlike their SAMS counterparts, they did not automatically go to Marine Expeditionary Force (MEF) staffs, the most likely place where they would have applied their education in the planning and conduct of operational art. While the primary method of teaching operational art at SAW was through the study of campaigning, the larger intent was to develop officers who were broadly educated in how the Marine Corps worked.¹⁹

One manifestation of that larger education was instruction on the Planning, Programming, and Budgeting System (PPBS) and the acquisitions system. Captain Bruce I. Gudmundsson, one of the curriculum designers, wanted to prepare SAW graduates for duties involving combat development or the institutional preparation of the Marine Corps' force structure, equipment, and training base. The first syllabus for the course explicitly tied those processes to national industrial mobilization, as well as its influences on policy decisions that would in turn affect the decisions confronting operational art practitioners.²⁰

The Marines who had graduated from SAMS brought its considerable reputation with them into the Fleet Marine Forces, and SAW graduates quickly added their own accolades to the course as they earned themselves a reputation for being able to think, write, and plan better than their counterparts who had attended CSC. More significantly, the recognized performance of SAW graduates brought a greater appreciation for operational art in the Marine Corps.²¹

¹⁸ House Armed Services Committee, *Report of the Panel on Military Education of the One Hundredth Congress*, 101st Cong., 1st Sess., April 21, 1989, 25–27.

¹⁹ Bradley J. Meyer, interview by author, May 15, 2012, recording and notes in author's possession.

²⁰ School of Advanced Warfighting, *Syllabus, Academic Year 1990-91* (Quantico, Va.: Command and Staff College, Marine Corps University, 1990), 2–24 – 2–25; Bruce I. Gudmundsson, e-mail to author, January 19, 2012.

²¹ A former chief of staff of I MEF, described Major William M. Meade, a graduate of the first SAW class, as indispensable, characterizing him as: “Billy Meade on the left, Billy Meade on the right, Billy Meade up the

The second school stemmed from long-standing difficulties in assigning and retaining qualified faculty at CSC. The solution was the Art of War Studies Program, which started on August 10, 1990 with six lieutenant colonels, all earmarked for a follow-on assignment as CSC or SAW faculty. The curriculum, drawn from the Army and Navy War Colleges, emphasized policy, strategy, and joint warfare, and filled a void in national and theater strategy in Marine Corps professional military education.²² The title of the program was deliberate, as the Marine Corps' designated top-level school was actually the Naval War College at Newport, Rhode Island. However, the Art of War Studies Program became the Marine War College (MCWAR) a year after its inception, with no change in assignment policy, and MCWAR remains the traditional source for CSC and SAW directors to the present day.²³ The changes at MCU indirectly improved the conduct of operational art in the Fleet Marine Forces. Another program established at the same time provided a more direct contribution.

After leaving I MEF, Lieutenant General Walter E. Boomer assumed command of Quantico and the Marine Corps Combat Development Command on September 27, 1991. His difficulties he faced in preparing the I MEF command element to control multiple subordinate units during DESERT SHIELD led to the creation of the Marine Staff Training Program

middle." Meyer, interview, May 15, 2012; Bruce I. Gudmundsson, e-mail to author, January 21, 2012. The Fleet Marine Forces, formally defined as "a balanced force of combined arms comprising land, air, and service elements of the US Marine Corps," more informally refers to those Marine Corps forces that conduct combat operations.

²² President, Marine Corps University, *Command Chronology for the Calendar Period 1 January 1990 through 31 December 1990*, February 25, 1991, Folder 2, Box 1827, Marine Corps Combat Development Command files, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

²³ The composition of the Naval War College student body is from Van Riper, interview, May 12, 2012. Director, Command and Staff College, "Command Chronology for the Calendar Period 1 January through 31 December 1991," February 6, 1992, Box 1828, Folder 5, Marine Corps Combat Development Command files, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

(MSTP), a program to improve staff planning skills in Marine Air-Ground Task Forces (MAGTF) and specifically at the MEF.²⁴

The genesis of MSTP was in another one of Van Riper's initiatives after assuming the MCU presidency. Having seen the success of the Army's Battle Command Training Program (BCTP) in training Army divisions and corps, Van Riper directed the establishment of a Battle Staff Training (BST) program in 1989. BST Instructors were invaluable in preparing I MEF and its subordinate commands for staff operations during Operation DESERT SHIELD and DESERT STORM, and some instructors actually augmented those staffs during the war.²⁵

In late 1991, after Boomer's arrival at Quantico, the BST was renamed the MAGTF Instruction Team (MIT), focusing specifically on the MEF. Mundy added his own emphasis to the program in Green Letter 3-92, which directed a "focus on MEF-level concepts and doctrine to help establish the roles and functions of the MEF CE (command element)." Mundy codified those roles and responsibilities to the rest of the Marine Corps in Marine Corps Order 1500.53, which formally established the MSTP on April 15, 1993.²⁶

The MSTP addressed a void in training for operational warfare in the Marine Corps. Although SAW, MCWAR and the changes to the CSC curriculum could address training, those changes had happened just as Operation DESERT SHIELD started and the Marine Corps' existing training institutions only trained forces on tactical tasks and skills. In the meantime, MEF and MEB commanders had no institutional resources beyond the education and experience of their personnel.

²⁴ Col James F. Amos, "The MEF is our mission...The MAGTF staff training program (MSTP)," *Marine Corps Gazette* 78, no. 2 (February 1994): 26.

²⁵ *Ibid.*, 236.

²⁶ A Green Letter is the Commandant's official method of correspondence for transmitting his guidance to the Marine Corps' senior leadership, whether Marine general officers or Marine civilians in the Senior Executive Service. Van Riper, interview, May 12, 2012; Amos, "The MEF is our mission...The MAGTF staff training program (MSTP)," 26.

Furthermore, the MEF existed in a cultural purgatory before DESERT STORM. Although the Marine Corps had traditionally communicated a unified service identity better than the other services, it was balkanized along the lines of its subordinate units prior to DESERT SHIELD. The MEF lacked the ability to coordinate its own intelligence, fire support, or air operations above the tactical level.²⁷ Doctrine for acting as a joint force commander's service component or for fighting as a MEF did not exist, meaning that the predominant focus of effort was almost exclusively tactical until forced otherwise.

The solution for resolving that gray zone was a doctrinal solution to a cultural problem. MSTP took on the task of developing doctrine for the MEF in 1991, resulting in a coordinating draft of Fleet Marine Force Manual (FMFM) 2, which in spite of its draft state saw wide circulation around the Marine Corps.²⁸ Among the most important of the concepts in the FMFM 2 draft was the concept of top-down planning, in which the MEF was responsible for directly coordinating the actions of its ground combat, air combat, and combat service support elements.²⁹ Top-down planning concept was the precursor for a subsequent concept called the "single battle," whereby a MAGTF commander "must always view his area of operations as an indivisible entity."³⁰

The single battle concept addressed two internal problems for the MEF. Internally, the pre-DESERT STORM practice of a Marine division commander also being the MEF commander had created a culture where the air combat element and combat service support elements were unequal partners to the ground combat element, and the MEF headquarters was seen as an

²⁷ Col Thomas X. Hammes, "DESERT SHIELD/DESERT STORM--Ten Years Later," *Marine Corps Gazette* 85, no. 5 (May 2001): 73.

²⁸ Maj Kenneth C. Watson, "Words and War: Confusion or MAGTF Doctrine?," *Marine Corps Gazette* 76, no. 10 (October 1992): 52.

²⁹ Marine Staff Training Program, *Fleet Marine Force Manual 2 (Coordinating Draft): MEF Doctrine*, 1992, 64–65.

³⁰ Headquarters, U.S. Marine Corps, *Marine Corps Doctrinal Publication 1-0: Marine Corps Operations* (Washington, D.C.: G.P.O., 2001), 6–20.

administrative entity only. Externally, the single battle concept and its notion of a sacrosanct MAGTF area of operations was a hedge to prevent the Army and Air Force from breaking up the MAGTF for its subordinate elements, which would have called into question the potential relevance of the Marine Corps. While MSTP was instrumental in teaching the single battle concept, which appeared informally in the mid-1990s, that concept did not formally appear in Marine doctrine until 2001, in Marine Corps Doctrine Publication (MCDP) 1-0, *Marine Corps Operations*, the approved MAGTF doctrine that had actually started a decade beforehand in the FMFM 2 draft.³¹ It is possible that the lengthy delay between the draft and the approved manual owed to the development of a new operational concept for the Marine Corps in the wake of DESERT STORM.

Maneuver warfare had provided a useful basis for the conduct of Marine Corps operations, but as a philosophical statement, it did not describe in detail the actual capabilities necessary for those operations. To provide that detail, the Navy and Marine Corps developed a series of concepts to guide future combat developments into the 1990s. In the case of the Department of the Navy, the disappearance of the Soviet Navy as a high seas threat led to a reassessment of maritime strategic thinking and a shift to expeditionary operations in the littorals, or operations in and around coastal waters, as expressed in ...*From the Sea: Preparing the Naval Service for the 21st Century*, a 1992 Department of the Navy white paper signed by Secretary of Navy Sean O’Keefe, Admiral Frank Kelso II, Chief of Naval Operations, and Mundy as Commandant of the Marine Corps.³² The ...*From the Sea* concept, in addition to the

³¹ Maj William F. P. Gresham, “OMFTS and the Single Battle Concept,” *Marine Corps Gazette* 80, no. 6 (June 1996): 39–40; Hammes, “DESERT SHIELD/DESERT STORM--Ten Years Later,” 78.

³² Sean O’Keefe, ADM Frank B. Kelso II, and Gen C. E. Mundy Jr., ...*From the Sea: Preparing the Naval Service for the 21st Century* (Washington, D.C.: Department of the Navy, 1992), 2–3.

concentration on littoral warfare, also proposed a shift to “maneuver from the sea, the tactical equivalent of maneuver warfare on land.”³³

The Marine Corps staked its future on a complementary paper concept called *Operational Maneuver from the Sea* (OMFTS), an application of maneuver warfare to a maritime campaign.³⁴ That paper, initially appearing in late 1992, focused on the mechanics by which a naval expeditionary force might conduct combat operations “to seamlessly and continuously project combat power ashore assuring rapid attainment of campaign objectives.”³⁵ Although OMFTS did not address the strategic context for the forcible entry capabilities it proposed, it did describe a vision for building the command and control, logistics, and maneuver capabilities necessary for achieving outcomes beyond the tactical level. Following a more detailed treatment of the Navy’s overarching concept in a 1995 paper titled *Forward...From the Sea*, the Marine Corps published a much-revised OMFTS concept in 1996.

The approved 1996 OMFTS concept was the same philosophically as the original 1992 statement, albeit with more detail on the possible scenarios calling for employment of a naval expeditionary force.³⁶ OMFTS presented a logical vehicle for improving capabilities in force flow and logistics, especially in the context of a large operation. However, OMFTS relied on naval capabilities that were not within the Marine Corps’ immediate control, especially for the sea-based logistics and fire support necessary for true maneuver, without culmination, over operational distances. Most significant, the Marine Corps, by investing in OMFTS, had placed most of its proverbial eggs in one basket and an insular one at that. While it paid the appropriate

³³ Ibid., 5–6.

³⁴ Marine Corps Combat Development Command, “Operational Maneuver from the Sea War Game: Initial Concepts,” November 1992, 1, Folder 5, Box 1832, Marine Corps Combat Development Command, Command Chronology, July-December 1992, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

³⁵ Ibid., 3.

³⁶ Headquarters, U.S. Marine Corps, *Operational Maneuver from the Sea: A Concept for the Projection of Naval Power Ashore* (Washington, D.C.: Headquarters, U.S. Marine Corps, 1996), 9–12.

lip service to joint warfare that all of the services did in the 1990s, OMFTS was internally focused, consistent with Marine doctrine of the single battle, independent of other service or functional components. Its internal focus on the conduct of tactical operations was not unique to the Marine Corps.

The Army after DESERT STORM: Looking Outward, Turning Inward

The U.S. Army, spurred by the end of the Cold War and the demands imposed by the Base Force, undertook a significant reassessment of its roles and missions. One of the byproducts of that reassessment was a revision of the Army's basic concept and doctrine for operational art. However, the attempts to reshape the Army from within stalled, and the focus of the Army's efforts defaulted to the tactical focus that had plagued the Army through the Cold War and in DESERT STORM.

The first explorations of a replacement for the AirLand Battle doctrine in the 1986 edition of Field Manual (FM) 100-5 was a concept called AirLand Battle-Future (ALB-F), which was undertaken in 1987 under General John W. Foss, commander of the Army's Training and Doctrine Command (TRADOC). The ALB-F concept actually came in two varieties, a "heavy" version specifically focused on the defense of Western Europe, and another "umbrella" concept intended for more general use. The "umbrella" version of ALB-F remained when the disappearance of the Warsaw Pact threat obviated the need for the ALB-F Heavy concept.³⁷

What was left was Foss's vision of a nonlinear tactical battlefield, in which units would cycle through different phases of combat, starting with detection of enemy forces, followed by attacking those forces with long-range fire support and attack aviation. Maneuver forces would

³⁷ John L. Romjue, *American Army Doctrine for the Post-Cold War* (Fort Monroe, Va.: Military History Office, U.S. Army Training and Doctrine Command, 1997), 23–26.

occupy so-called “dispersal areas” spread out to avoid being destroyed in a single engagement, then converge to “bring overwhelming force to bear to destroy the enemy at the time and place his forces are most vulnerable.” At the conclusion of those engagements, those maneuver forces would disperse and when necessary, reconstitute units in preparation for future combat.³⁸ The ALB-F “umbrella” concept became one of the pillars of the FM 100-5 rewrite that Foss directed in mid-1990.

Before starting the rewrite, however, Foss had to decide who would be responsible for writing the FM 100-5 revision. Proponency for FM 100-5 rested with the U.S. Army Combined Arms Command (CAC) at Fort Leavenworth with SAMS serving as the executive agent for actually writing the doctrine.³⁹ As previously described, the authors of the 1982 and 1986 editions of FM 100-5 had been at SAMS but enjoyed unparalleled access to the TRADOC commander. Such a connection mitigated the effects of geographical separation between Fort Leavenworth and TRADOC headquarters at Fort Monroe, Virginia.

On May 4, 1990, Colonel David R. Collins, assigned to the office of the Assistant Deputy Chief of Staff for Concepts, Doctrine, and Developments at TRADOC, proposed moving proponency of FM 100-5 to TRADOC.⁴⁰ Collins’s proposal hinged on the proximity of his office to Foss. The other consideration was the level at which the manual was to be written. Collins compared FM 100-5 to some of the manuals that were bound to influence its content. Those manuals ranged from the national strategic to the tactical level, but none very consistently.

³⁸ MG Stephen Silvasy Jr., “AirLand Battle Future: The Tactical Battlefield,” *Military Review* LXXI, no. 2 (February 1991): 4–9.

³⁹ The Combined Arms Command title only lasted from 1990 to 1994, when it returned to its previous name of the Combined Arms Center after a TRADOC reorganization.

⁴⁰ The DCSCDD was a short-lived (1990-1992) amalgamation of the offices of the Deputy Chief of Staff for Doctrine (DCSDOC), as well as the Deputy Chief of Staff for Combat Developments (DCSCD), which managed future force structure and materiel acquisitions.

Collins argued that FM 100-5, as the Army's capstone doctrine, should cover issues across the spectrum from tactical to strategy at the theater level.

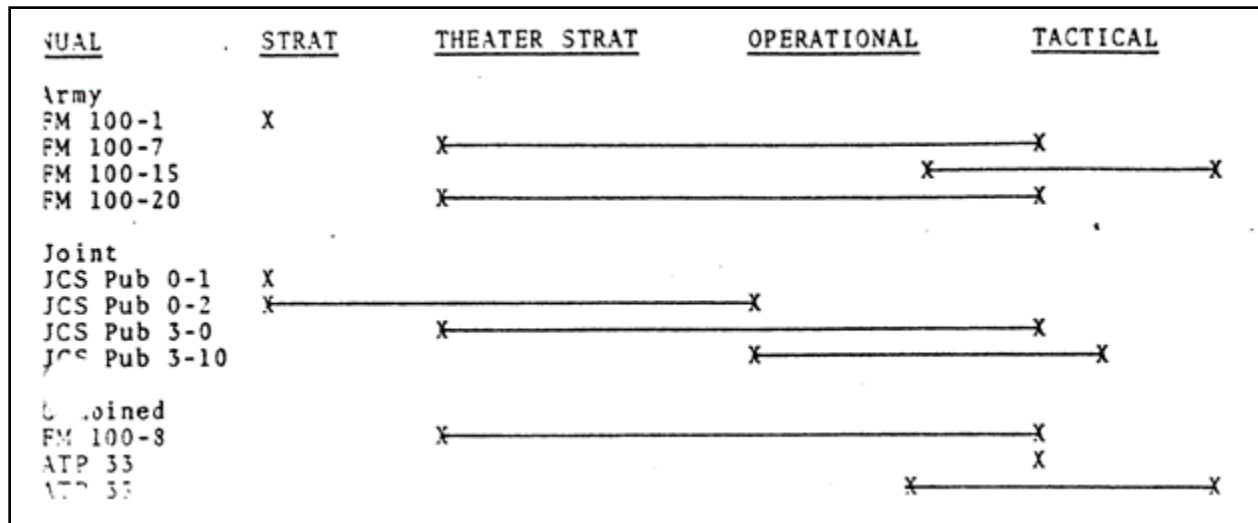


Figure 9: Analysis of Army, Joint, and Combined doctrine in Collins' proposal to move FM 100-5 proponentry to TRADOC. ATP-33 and ATP-35 are NATO doctrine.⁴¹

Notably, Collins noted that the FM 100-5 rewrite, which now had to account for joint doctrine that was virtually nonexistent in 1986 and a dramatic change in the operational authorities in the wake of the Goldwater-Nichols Act, would “require extensive coordination - far beyond what is normally required of an Army FM.” Foss, while acknowledging Collins' proposal, ruled that proponentry would remain at CAC. He was reluctant to make such a dramatic change in the process from the two previous editions, which were seen as highly successful.⁴²

Foss's decision left FM 100-5 in a void. CAC had responsibility for division and corps doctrine (which was primarily tactical) while TRADOC had responsibility for echelons above

⁴¹ COL David R. Collins, “Transmittal Action and Control Sheet, Subj: FM 100-5, Operations” (Headquarters, TRADOC, May 4, 1990), Annual Command History 1990, Supporting Documents, I-34, TRADOC History Office.

⁴² Ibid. Foss's handwritten comments, dated June 22, 1990, read “All this is true. Manual should be written primarily at CAC. Cdr TRADOC must be the driver. Will continue as we did for '82 and '86 version of 100-5.”

corps (EAC) doctrine. As a capstone manual, FM 100-5 was supposed to transcend EAC doctrine, but even the vaunted 1986 edition that introduced “operational art” into the lexicon still had some discussion of tactics, a legacy of its earlier roots in the 1982 manual. The actual mechanics of execution at the operational level were intended for publication in two manuals, FM 100-7, *Doctrine for EAC Operations and Support*, and FM 100-8, *Combined Army Operations*, neither of which existed in 1990. The FM 100-5 revision and the work on FM 100-7 and FM 100-8 stalled in 1991 as doctrine writers sought to incorporate observations from Operations DESERT SHIELD and DESERT STORM.⁴³

In August 1991, TRADOC and the U.S. Air Force’s Tactical Air Command (TAC) published a formally approved revision of ALB-F in the form of TRADOC Pamphlet 525-5, *AirLand Operations*, which formally replaced the 1981 edition titled *AirLand Battle and Corps 86*. Partly informed by the Army’s experiences in Operation DESERT SHIELD and DESERT STORM, the pamphlet envisaged the “major focus of land operations (as) defeating the enemy through joint warfighting in the joint battle area.”⁴⁴ The basis of that jargon was the same decentralized dispersal and concentration of forces on a conventional battlefield to defeat an enemy force as in ALB-F, making AirLand Operations still fundamentally a tactical concept. The AirLand Operations concept was Foss’s final contribution to the dormant FM 100-5 rewrite, which formally restarted that same month when Foss passed command of TRADOC to General

⁴³ John L. Romjue et al., *U.S. Army Training and Doctrine Command Annual History, 1 January to 31 December 1992*, ed. Henry O. Malone Jr. (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1993), 31–32, 36–37.

⁴⁴ U.S. Army Training and Doctrine Command and U.S. Air Force Tactical Air Command, *TRADOC Pamphlet 525-5: AirLand Operations: A Concept for the Evolution of AirLand Battle for the Strategic Army of the 1990s and Beyond* (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1991), 12.

Frederick M. Franks, Jr.⁴⁵ In the meantime, however, the Army was looking beyond doctrine at how to prepare better for the next conflict.

During the Cold War, the Army, pursuant to its obligations under Title 10, U.S. Code to man, train, and equip forces for employment by a combatant commander, had implemented a process called the Concepts-Based Requirements System (CBRS). The CBRS formalized the methods that had emerged at the Training and Doctrine Command (TRADOC) and the Army Staff to guide the development of the future force. The first of those concepts was Active Defense, in the 1976 edition of Field Manual (FM) 100-5. TRADOC later formalized those concepts, starting with the 1981 edition of TRADOC Pamphlet 525-5, *The AirLand Battle and Corps 86*. The CBRS was one of the processes by which the Army participated in the Department of Defense's PPBS budgeting system, but General Gordon R. Sullivan, Chief of Staff of the Army (CSA), believed CBRS too unwieldy to produce the kind of revolutionary change that he believed necessary in the post-Cold War Army.⁴⁶

In a March 1992 message to all of the senior leaders in the Army, Sullivan envisioned an alternate process that he called the Louisiana Maneuvers (LAM), a homage to the Louisiana Maneuvers of 1940 and 1941. Much like those earlier exercises, Sullivan envisioned the new LAM as a way to force the Army to understand the roles, missions, necessary capabilities, and future direction into the 21st century.⁴⁷

The vehicle for testing some of the new LAM products was an exercise titled the General Headquarters Exercise (GHQx), an allusion to the Army's General Headquarters that had

⁴⁵ John L. Romjue et al., *U.S. Army Training and Doctrine Command Annual History, 1 January to 31 December 1993*, ed. Henry O. Malone Jr. (Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1994), 23.

⁴⁶ James L. Yarrison, *The Modern Louisiana Maneuvers* (Washington, D.C.: U.S. Army Center of Military History, 1999), 9–10.

⁴⁷ GEN Gordon R. Sullivan, "Louisiana Maneuvers 1994," Defense Messaging System message, March 9, 1992, LAM Mission Backup, February 1992, Louisiana Maneuvers Collection, TRADOC History Office.

overseen the original Louisiana Maneuvers. The GHQx was designed to stress the Army staff and to examine the Army's ability to perform its Title 10 responsibilities in support of the likely wartime contingencies anticipated in the *National Military Strategy*.⁴⁸ What made the GHQx a unique effort for training staffs in the national-level functions required of operational art was its linkage to ULCHI FOCUS LENS and FUERTES DE DEFENSAS, two combatant commander-level exercises that involved deployment and command of actual units.⁴⁹ In its second year, the exercise tied into a larger number of agencies, including PRAIRIE WARRIOR, a tactical-level command post exercise that was part of the CGSC curriculum at Fort Leavenworth. However, the Army did not involve much Joint Chiefs of Staff (JCS) participation in the GHQx because its focus took precedence over any incidental benefit to training joint interoperability.⁵⁰

Although Sullivan had initially envisioned an ambitious schedule of reforms for changing the Army's force structure in two years, rather than the five years or more that such changes usually required, he quickly put those reforms on hold. Sullivan learned in 1991 that Powell was about to publish a new *National Military Strategy* report, and he did not want to be seen as introducing change before the Chairman set forth his ideas. In early 1993, Secretary of Defense Les Aspin initiated the Bottom-Up Review, a department-wide review of defense strategy, force structure, modernization, and infrastructure in a post-Cold War environment. In turn, Sullivan decided the changes in the security environment warranted a reexamination of the Army's capstone operational doctrine for the post-Cold War era.⁵¹

⁴⁸ Office of the Chief of Staff, Army, *Louisiana Maneuvers: The First Year* (Washington, D.C.: Headquarters, Department of the Army, March 1, 1994), 20.

⁴⁹ ULCHI FOCUS LENS is a U.S. Pacific Command exercise held in Korea, while FUERTES DE DEFENSAS is a U.S. Southern Command exercise held in South America.

⁵⁰ Yarrison, *The Modern Louisiana Maneuvers*, 44–45.

⁵¹ *Ibid.*, 12. The normal timeframe for the Total Army Analysis process that developed and implemented new Army force structure was five years, reflecting its ties to the PPBS process that provided the fiscal authorizations for that force structure.

Sullivan, who had been the Vice Chief of Staff of the Army prior to becoming the CSA, was already aware of the work on AirLand Operations that had been ongoing at TRADOC, and made it one of the instruments of that reexamination. He saw FM 100-5, and doctrine more generally, as an “engine of change,” a charter he passed to Franks, who also acknowledged the need to lead the Army intellectually through the dramatic changes that had transpired in the years since the 1986 doctrine.⁵²

The centerpiece of Sullivan’s vision was a notion of “decisive victory,” which he defined in testimony to the House Armed Services Committee on March 6, 1992:

I define decisive victory as the result of our ability to control the battlefield dimensions of speed, space, and time. We then apply overwhelming combat power at the critical point on the battlefield, ending conflict on our terms. We achieve this result with the minimum expenditure of lives and national resources.

Sullivan qualified that definition, stating that “we must be careful not to create unreasonable expectations based on JUST CAUSE and DESERT STORM.”⁵³ His definition implied heavily that the Army could achieve strategic actions through the short-term overwhelming tactical success. That vision also understated, if not outright ignored, the possibility that those tactical actions might not achieve the strategic objectives that would actually make such military action truly decisive. Sullivan’s rhetoric about conflict termination was still couched in the language of tactical action, not strategic art—a bias that was pervasive within the Army’s culture.

At the outset of the FM 100-5 rewrite, the Army’s division and corps commanders had viewed the new AirLand Operations with some suspicion, believing that it would shift the Army’s doctrine away from their organizations that were the core of the Army’s operating

⁵² GEN Gordon R. Sullivan, “Senior Officer Oral History Program: General Gordon R. Sullivan,” interview by COL David Ellis, 2002, 214, U.S. Army Military History Institute, Senior Officer Oral History Program; GEN Frederick M. Franks Jr., “Oral History Interview,” interview by John L. Romjue, November 17, 1994, 1–2, FM 100-5 files, Combined Arms Research Library.

⁵³ LTC Anthony Cerri, “CSA Comments/Key Copy Points,” email, March 20, 1992, LAM Mission Backup, February 1992, Louisiana Maneuvers Collection, TRADOC History Office.

forces. Although Foss and General Carl E. Vuono, the previous CSA, had pioneered the AirLand Operations concept, Franks and Sullivan elected to go in a different direction. They charged Colonel James R. McDonough, the newly-arrived director of SAMS, with writing the revision. With Sullivan's support, McDonough organized a writing team which he termed the "Campaign Operations Group", and he designated Lieutenant Colonel Ricky Rowlett the team leader. Their draft largely ignored the AirLand Operations concept in the 1991 TRADOC Pamphlet 525-5, setting a different direction for the new manual.⁵⁴

Franks laid out three major areas to address in the new FM 100-5: mobilization and deployment; the strategic, operational, and tactical conduct of war; and a new area called "operations other than war," drawn from the 1991 edition of Joint Publication (JP) 1.⁵⁵ Franks recognized that AirLand Battle had tied tactics to operational art. What he envisaged for the FM 100-5 rewrite was to connect operational art to strategy.⁵⁶ To that end, the new manual greatly expanded the scope of what "operations" actually meant. That discussion of operational art and strategy came at the expense of previous discussions of tactics. In comparison to earlier editions of FM 100-5, the discussions of tactics in the 1993 manual were purely conceptual, reflecting the guidance to discard lower-level tactics, techniques, and procedures. Rather than the predominant focus on mechanized forces in traditional combat operations against a Soviet-style adversary that had been the hallmark of the 1982 and 1986 manuals, the rewrite addressed a full continuum of

⁵⁴ Romjue, *American Army Doctrine for the Post-Cold War*, 40–41; Kevin C. M. Benson, "Educating the Army's Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994" (PhD dissertation, Lawrence: University of Kansas, 2010), 265–268.

⁵⁵ Franks, "Oral History Interview, November 17, 1994," 12, November 17, 1994.

⁵⁶ Romjue, *American Army Doctrine for the Post-Cold War*, 47.

Army operations in war, hostilities short of war (defined as post-conflict activity after a war) and in peacetime—all in a joint context.⁵⁷

STATES OF THE ENVIRONMENT	GOAL	MILITARY OPERATIONS	EXAMPLES
WAR	Fight and Win	WAR	<ul style="list-style-type: none"> • Large-scale combat operations . . . • Attack • Defend
CONFLICT	Deter War and Resolve Conflict	OTHER THAN WAR	<ul style="list-style-type: none"> • Strikes and raids • Peace enforcement • Support to insurgency • Antiterrorism • Peacekeeping • NEO
PEACETIME	Promote Peace	OTHER THAN WAR	<ul style="list-style-type: none"> • Counterdrug • Disaster relief • Civil support • Peace building • Nation assistance

COMBAT

NONCOMBAT

The states of peacetime, conflict, and war could all exist at once in the theater commander's strategic environment. He can respond to requirements with a wide range of military operations. Noncombat operations might occur during war, just as some operations other than war might require combat.

Figure 10: Range of Military Operations in the Theater Strategic Environment as approved for FM 100 5, 1993 edition⁵⁸

The inclusion of operations other than war was an attempt to reconcile the differences between the 1986 FM 100-5 and FM 100-20, *Military Operations in Low Intensity Conflict*, which first appeared in 1981 and in revised form in 1990.⁵⁹ Although FM 100-5 was a capstone manual, its omission of much necessary detail on low-intensity conflict led to the perception of FM 100-20 as a manual of similar echelon, although it was not designated as capstone doctrine. Rather than “low-intensity conflict,” the authors of the ALB-F umbrella revision of FM 100-5 used the term “deterrence operations,” which covered “operations short of war designed to

⁵⁷ U.S. Army Combined Arms Command, School of Advanced Military Studies, “FM 100-5 Doctrine Writers’ Conference,” presentation slides, June 29, 1992, FM 100-5 Working Group folder, 2 JULY 92, FM 100-5 Working Notes, Combined Arms Research Library.

⁵⁸ Department of the Army, *Field Manual 100-5, Operations* (Washington, D.C.: G.P.O., 1993), 2–1.

⁵⁹ The manual defines low intensity conflict as “a political-military confrontation between contending states or groups below conventional war and above the routine, peaceful competition among states.” Although the manual was published under the imprimatur of the Army and Air Force, most references to the manual only cited its Army designation. Department of the Army and Department of the Air Force, *Field Manual 100-20/Air Force Pamphlet 3-20, Military Operations in Low Intensity Conflict* (Washington, D.C.: G.P.O., 1990), 1–1.

promote security and stability, reduce the potential for or the escalation of hostilities, and/or to gain control of a situation.”⁶⁰ Franks viewed those concepts (along with “mid-intensity conflict” and “high-intensity conflict”) as false distinctions, and the term “hostilities short of war” came into use with the Campaign Operations Group draft. It eventually migrated to “operations other than war” in 1993 to maintain consistency with the Joint Staff’s upcoming release of JP 3-0.⁶¹

The 1993 FM 100-5 expanded on its predecessor edition’s coverage of operational art. Of particular note was the addition of “conflict termination,” the first time that term had appeared in Army doctrine. The notion of campaigning to achieve the strategic objectives (or termination criteria) necessary to end a war on favorable terms was not new, but a discussion of harmonizing policy, strategy and operations for the political leverage necessary to achieve those strategic objectives was a novel idea for Army doctrine.⁶²

The Army’s reaction to the 1993 FM 100-5 was tepid. Major Michael McCormick, in a SAMS student monograph, noted the absence in 1993 of any healthy discourse about the new capstone manual, compared to the spirited reception and commentary that had accompanied the 1976, 1982, and 1986 editions of FM 100-5. One factor McCormick cited was that the extensive staffing that Franks and Sullivan had directed across the Army. That effort had resulted in the new doctrine already being accepted among the senior leadership of the Army.⁶³ However, the

⁶⁰ John L. Romjue, “Memorandum for Record, FM 100-5 Working Conference, 23-24 October 1990, Fort Leavenworth, Kan.” (Headquarters, TRADOC, October 30, 1990), 3, Annual Command History 1990, Supporting Documents, I-42, TRADOC History Office.

⁶¹ COL (Ret) Peter F. Herrly, interview by author, June 4, 2012, recording and notes in author’s possession; Romjue, “FM 100-5 Working Conference MFR,” 2; Franks, “Oral History Interview, November 17, 1994,” 18, November 17, 1994.

⁶² It also included a more substantive discussion of the linkages between operational art, strategy, and policy, with a brief overview of the *National Military Strategy* and the relationships of tactical and operational execution to strategic ends. Department of the Army, *FM 100-5 (1993)*, 6–23, 1–3–1–4.

⁶³ MAJ Michael McCormick, “The New FM 100-5: A Return to Operational Art” (Monograph, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1997), 11.

1986 manual had seen equally extensive staffing through CAC, TRADOC, and Headquarters, Department of the Army (HQDA), as well as through the rest of the Army.

More prosaically, the Army may not have been prepared for a capstone manual that repudiated the how-to-fight approach to tactics from previous editions in favor of a much more abstract treatment of operational art and strategy. The detail on tactical-level operations available in previous editions of FM 100-5 simply disappeared, leaving a void that the Army did not fill until CGSC published Student Text 100-40, *Tactics*, in 1999.⁶⁴ Indeed, one of McDonough's recollections of the revision was the opposition of many of the service school branch chiefs and tactical commanders to the inclusion of operations other than war into the manual.⁶⁵ In spite of a prophetic sentence that stressed that "the Army represents the nation's only military force capable of prolonged land combat" and that "the Army has strategic staying power," the Army developed a new operational concept that tried to obviate the need for that strategic staying power through the siren song of tactical "decisive victory."⁶⁶

On March 5, 1994, Sullivan announced Force XXI, a new effort intended to redesign the Army for the 21st century. Force XXI was an initiative that sought to make the Army into an "Information-Age force," with smaller, more agile units networked through computers and digital communications. That effort, beyond the so-called "digitization" of the battlefield, also included the redesign of the Army's force structure that Sullivan had desired and then deferred in

⁶⁴ Student Text 100-40 became the basis for a draft of Field Manual 100-40, *Tactics*, which was approved as the Army's keystone tactics manual in 2001 as FM 3-90.

⁶⁵ McCormick, "The New FM 100-5: A Return to Operational Art," 41.

⁶⁶ Department of the Army, *FM 100-5 (1993)*, 1-4 – 1-5.

1991.⁶⁷ The Force XXI effort was an outgrowth of the larger institutional change that the LAM was intended to create, but by late 1994, Force XXI had completely superseded its parent.⁶⁸

Force XXI, while intended to embrace both the Army's deploying combat forces and its institutional support base, reverted over time to the tactical force, leaving operational art to salutary neglect. The expense and complexity of the digital command and control systems required for the effort meant that the first several Force XXI experiments from 1992 to 1997 involved small units ranging from platoon, company, battalion task force, up to a brigade combat team.⁶⁹ The only preparation the Army undertook in Force XXI for operational art was a much-expanded PRAIRIE WARRIOR exercise in 1996. That exercise featured CGSC and SAMS students using networked command and control systems that simulated a combined/joint task force (CJTF) and a combined force land component commander (CFLCC) with its subordinate corps and divisions. However, the majority of the exercise, consistent with its ownership by CGSC, focused on teaching corps and division operations to CGSC students.⁷⁰ Responsibility for campaigning rested with students of the SAMS Advanced Operational Art Studies Fellowship, a war college-level program. The senior SAMS students' education in strategy and operational art theory gave them the necessary background to write the scenario and the joint

⁶⁷ GEN Gordon R. Sullivan, *The Collected Works of the Thirty-Second Chief of Staff, United States Army: June 1991-June 1995* (Washington, D.C.: Department of the Army, 1996), 316–321.

⁶⁸ Yarrison, *The Modern Louisiana Maneuvers*, 65–66. General Dennis J. Reimer, Sullivan's successor as CSA, disbanded the LAM Task Force in 1996.

⁶⁹ The units in question were a platoon and later a company from the 3d Battalion, 8th Cavalry of the 1st Cavalry Division in 1992-1993, the 1st Battalion, 70th Armor of the 194th Separate Armored Brigade in 1994, and the 1st Brigade, 2d Armored Division, which was reflagged as the 1st Brigade, 4th Infantry Division in 1995. Some experimentation also occurred with the 10th Mountain Division in 1995. Stephen L. Y. Gammons and William M. Donnelly, *Department of the Army Historical Summary, Fiscal Year 1995* (Washington, D.C.: U.S. Army Center of Military History, 2004), 39–40.

⁷⁰ LTG Leonard D. Holder and COL Rolland A. Dessert Jr., "PRAIRIE WARRIOR: A Joint and Combined Exercise," *Military Review* LXXVI, no. 4 (July-August 1996): 5–10. A theater support command at Fort Lee, Virginia also participated remotely.

theater strategic campaign plan upon which the exercise hinged.⁷¹ Such a task would have been beyond the expected abilities of the other students in the exercise.

The Army War College is curiously absent during the entire LAM and Force XXI effort. The lines of responsibility for the Force XXI effort, especially at its outset, followed the LAM Task Force and its two connections to Sullivan and Franks. The War College, a field operating agency of the Army Staff rather than a TRADOC school, had traditionally emphasized on strategic studies and the interactions of the Army with its political masters.⁷² It provided work spaces and a place to put the personnel authorizations for the LAM Task Force, but little in the way of intellectual influence on the efforts. Although Major General William A. Stofft, commandant of the War College, had been one of Sullivan's classmates at the Armor Officer Advanced Course in 1964-1965, and provided advice directly to Sullivan, which stemmed from their long friendship and parallel career paths in Armor Branch. Sullivan did make the War College Commandant a member of the LAM Board of Directors, giving the War College a literal seat at the table, but the War College is virtually invisible in the LAM process, and does not appear at all in Force XXI.⁷³

Although CGSC conducted PRAIRIE WARRIOR from 1992 through 2003, the exercise was normally a division and corps-level exercise to teach tactical command and control. Only in 1996 and 1997 did the exercise truly span operational art, and the Army returned to tactical experimentation for Force XXI.⁷⁴ The potential for improving the state of campaigning and

⁷¹ LTC Michael D. Heredia, "Campaign Planning for PRAIRIE WARRIOR 96," *Military Review* LXXVI, no. 4 (July-August 1996): 23-24.

⁷² COL (Ret) Richard H. Sinnreich, "Senior Officer Oral History Program: Colonel (Ret) Richard Sinnreich," interview by Steven G. Fox, 2001, 55, U.S. Army Military History Institute, Senior Officer Oral History Program.

⁷³ Yarrison, *The Modern Louisiana Maneuvers*, 14.

⁷⁴ The first BG Volney J. Warner and James H. Willbanks, "Preparing Field Grade Leaders for Today and Tomorrow," *Military Review* LXXXVI, no. 1 (January-February 2006): 111. Also discussions with Steven Davis and Mark Russell of the CGSC Digital Leader Development Center, June 1, 2012. Davis was part of the exercise

operational art that had started with the revision of FM 100-5, with the exception of the short-lived GHQx and PRAIRIE WARRIOR exercises, remained unfulfilled. SAMS remained the only insurance policy for teaching the theory and practice of operational art in the Army. The rest of the Army, by turning back to the tactical level of war, sought to understand the conduct of land campaigning but not its grammar.

Unification of the Air Force

Unlike the Marine Corps and Army, the Air Force had traditionally seen theater-level warfare as the most appropriate venue for the conduct of air operations. Skewing that perspective was the divide between its tactical and strategic air forces, which changed dramatically when the Air Force undertook a massive reorganization in 1992. That reorganization coincided with several significant initiatives in education and doctrine that ostensibly should have left the Air Force well-equipped for operational art, were it not for cultural factors that had far deeper roots than could be fixed in the years immediately after DESERT STORM.

In June 1990, Donald B. Rice, Secretary of the Air Force, published a white paper titled *Global Reach, Global Power*, a vision for air power in the post-Cold War national security environment. Written primarily by Lieutenant Colonel David A. Deptula, who was assigned to Rice's office, the white paper argued for power projection primarily at the theater level through the deployment of land-based airpower. *Global Reach, Global Power* formed the conceptual basis for a far more ambitious proposal to restructure the Air Force.

support staff for the 1996 PRAIRIE WARRIOR exercise and Russell was responsible for exercise support for PRAIRIE WARRIOR from the late 1990s through its conclusion.

Rice's proposal was a white paper called *Air Force Restructure: Impetus for Change*, published in September 1991. He echoed its points in *Reshaping for the Future*, his remarks to the House Armed Services Committee on February 20, 1992 to support the Air Force's budget proposal. The disappearance of the Soviet threat, combined with the spectacular tactical success the Air Force enjoyed during Operation DESERT STORM, had highlighted an "old, artificial distinction between tactical and strategic weapons and organizations."⁷⁵ Instead, an "integrated vision of airpower" mandated a major restructuring of the Air Force's major commands.

The Air Force disestablished TAC, Strategic Air Command (SAC), and Military Airlift Command (MAC), to create Air Combat Command (ACC), a new major command that combined fighters, bombers, and nuclear missile forces based in the conterminous United States, including some of the tankers, tactical airlift, reconnaissance, and command and control assets to enable their employment as a unified whole. The remainder of the strategic airlift, tankers, and the forces necessary to sustain them moved to Air Mobility Command (AMC), the successor organization to MAC. Similar changes occurred in U.S. Air Forces Europe (USAFE) and Pacific Air Forces (PACAF), where they became single air commanders for all Air Force units in their respective combatant command areas of responsibility. Below the major command level, the Air Force also reorganized its air wings along a similar model, creating composite wings under a single commander that were capable of fighting as self-contained aviation task forces.⁷⁶

That reorganization addressed a major doctrinal schism within the Air Force. Unlike the Army and Marine Corps, the Air Force had no authority for its doctrine short of the Air Staff

⁷⁵ Office of the Secretary of the Air Force, "Air Force White Paper: Air Force Restructure: Impetus for Change," in *History of Tactical Air Command, 1 January - 31 December 1991*, 1991, A-6: 5-7; Donald B. Rice, "Reshaping for the Future: The Strength and Durability of the U.S. Air Force, a speech delivered to the House Armed Services Committee, February 20, 1992," *Vital Speeches of the Day*, April 1, 1992, 356.

⁷⁶ Office of the Secretary of the Air Force, "Air Force White Paper: Air Force Restructure: Impetus for Change," 8; Rice, "Reshaping for the Future," 356.

Doctrine Division. However, the vicissitudes of Pentagon staff work meant that in practice, only Air Force basic doctrine—analogueous to the Army’s FM 100-1 or the Marine Corps’ FMFM 1—emerged from the Air Staff. Anything below that, to include operational doctrine, was left to the major commands to address. Operational doctrine did not exist in SAC and in the absence of any real authority, TAC published its own air operations doctrine in 1978 as TAC Manual (TACM) 2-1, *Tactical Air Operations*, while collaborating with TRADOC on multi-service doctrine. Such doctrine was disingenuous given that TRADOC had the authority to speak on behalf of the Army, but TAC did not. The newly-formed ACC, was still not empowered to speak on behalf of the entire Air Force for doctrine, requiring a solution.

Operation DESERT STORM provided the impetus for moving the work of developing Air Force doctrine outside of the Pentagon. The successes and difficulties in that conflict, combined with a postwar emphasis on increased “jointness” and the emergence of a new joint doctrine system, resulted in the creation of the Air Force Doctrine Center (AFDC) at Langley Air Force Base (AFB), Virginia on July 21, 1993, unifying the Air Force’s doctrinal direction under a single organization. Members of the Air Staff laid much of the groundwork for AFDC, having recognized the limitations of trying to develop doctrine from within the Pentagon.⁷⁷ While AFDC was on the same base as the ACC headquarters and enjoyed a close relationship and support from General Michael Loh, commander of ACC, it was an Air Staff field operating agency and thus answered to the Chief of Staff of the Air Force.⁷⁸ As a venue for unifying the

⁷⁷ One initial exception to this was space doctrine, but responsibility for Air Force space doctrine eventually passed to AFDC in the late 1990s. Headquarters, Air Force Doctrine Center, *Air Force Doctrine Center History* (Maxwell Air Force Base, Ala.: Air Force Doctrine Center, 2004), 2–3.

⁷⁸ Loh was a strong advocate for the AFDC, but General Merrill A. McPeak’s decision as Chief of Staff of the Air Force to establish AFDC at Langley owed to a desire to disassociate ACC from discussions of doctrine. Col Robert D. Coffman, Commander, Air Force Doctrine Center, interview by Thomas W. Crouch, February 7, 1997, in Thomas W. Crouch, ed., *Air Force Doctrine Center Oral History Interviews Covering the Period July 1993-February 1997* (Maxwell Air Force Base, Ala.: Air Force Doctrine Center, 1997), 8.

Air Force, the AFDC was a start. In the meantime, an equally important step in unifying the Air Force's doctrinal direction had already come to fruition.

The Air Force's basic doctrine had already been gestating for several years when DESERT STORM occurred. In December 1987, a group of authors under the direction of Colonel Dennis M. Drew at the Center for Aerospace Doctrine, Research, and Education's (CADRE) Airpower Research Institute began writing a new version of Air Force Manual (AFM) 1-1, the Air Force's basic doctrine as an education tool first, rather than as a justification for the interservice battles over roles, missions, and the budget, which Drew, tongue-in-cheek, later called "Pentagon wars." Drew's rationale was that a well-articulated basic doctrine would serve as an intellectual rudder for the rest of the Air Force first, while also providing a useful springboard for the members of the Air Staff engaged in fights with other services over the budget.⁷⁹

In the meantime, Colonel David Tretler had developed an Air Staff revision of AFM 1-1, reflecting much of the thought of Colonel John A. Warden, III (for whom Tretler worked) as expressed in Warden's book *The Air Campaign*. Lieutenant General Michael J. Dugan, the Air Force Deputy Chief of Staff for Plans and Operations, and Lieutenant General Truman Spangrud, Air University commander, had agreed to allow CADRE to continue developing its version while the Air Staff did its own as a potential interim, but Lieutenant General Jimmie V. Adams, who succeeded Dugan in summer 1989, directed that the Air Staff stop working on its

⁷⁹ Dennis M. Drew, "Inventing A Doctrine Process," *Airpower Journal* 9, no. 4 (Winter 1995): 47-51. Colonel Dennis M. Drew, trip report, March 7, 1988, in Center for Aerospace Doctrine, Research, and Education, *History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1988, volume 2* (Air University, 1990), SD-70, IRIS 1098954, Air Force Historical Research Activity. It is to those "Pentagon wars" that James Burton's 1993 book *The Pentagon Wars: Reformers Challenge the Old Guard*, about the development of the Army's Bradley Fighting Vehicle, also refers.

revision, leaving CADRE's as the source for the final draft.⁸⁰ The conceptual differences between the CADRE and Air Staff revisions were significant enough that the two different drafts being published close to each other would likely have caused the Air Force to reject both.

By January 1990, the writers at CADRE had completed a draft of AFM 1-1 for comment by the rest of the Air Force. The draft's tone, content, and format significantly differed from its forebears. Rather than expressing generalizations to justify PPBS acquisitions programs, the 1990 draft of AFM 1-1 was the most intellectually rigorous basic doctrine produced in the Air Force. The source of that rigor, and what distinguished the draft from its predecessors or comparable manuals in every other service was its second volume, which was a set of essays as "documentation" to support the assertions in the first volume. The draft was held up because of bureaucratic infighting, but General Merrill A. McPeak, Chief of Staff of the Air Force, approved the manual with minor changes in March 1992. Among those changes was a discussion of aerospace operational art that specifically supported propositions of airpower as a strategically decisive arm in isolation.⁸¹ Those editorial changes undoubtedly reflected the budgetary pressures of the Base Force and Bottom-Up Review, as well as the infighting over service equities that ensued as part of both processes. Nonetheless, the approved AFM 1-1 marked the first formal recognition of operational art in the Air Force.⁸²

⁸⁰ Letter from Lt Gen Michael J. Dugan to Lt Gen Truman Spangrud dated April 25, 1988, in Center for Aerospace Doctrine, Research, and Education, *History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1988, volume 1* (Air University, 1990), SD-59, IRIS 1098953, Air Force Historical Research Activity. Andrew David Dembosky, "Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992" (Master's thesis, Raleigh: North Carolina State University, 1993), 99-102.

⁸¹ The 1990 draft for comment is a supporting document in the Center for Aerospace Doctrine, Research, and Education, *History of the Center for Aerospace Doctrine, Research, and Education (CADRE): 1 January-31 December 1989, volume 1* (Air University, 1990), SD-4 and SD-5, IRIS 1099605, Air Force Historical Research Activity. Department of the Air Force, *Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force* (Washington, D.C.: G.P.O., 1992), 7, 9.

⁸² Department of the Air Force, *AFM 1-1 (1992)*, 10.

Regrettably, the 1992 edition of AFM 1-1 was a one-time artifact. Drew's "documented" manual with rigorous proofs for its assertions gained very little traction in the force. Although CADRE had asked the Air Force's major commands to submit revisions to the essays in the second volume of AFM 1-1, the Air Force as a whole, had been generally indifferent to doctrine and did not take to the intellectual rigor within AFM 1-1.⁸³ The institutional culture did not encourage officers to comment on doctrinal matters in print, and those that did, such as Drew and Warden, were seen as anomalies within a culture that valued tactical flying skills above all other military virtues. Responsibility for the new AFM 1-1 passed to the newly-formed AFDC, which had a shadow of the manpower and intellectual resources that was available to the authors at CADRE, whose sole responsibility had been writing the 1992 AFM 1-1.⁸⁴ The Air Force never wrote another manual of that format, and its replacement, Air Force Doctrine Document (AFDD) 1, published in September 1997, was a far less intellectually rigorous text, reflecting the influence of joint concepts that had become fashionable in the mid-1990s.⁸⁵

One mechanism for building intellectual rigor in the force started on May 13, 1988 with Spangrud's directive to CADRE to examine the possibility of sending selected Air Command and Staff College (ACSC) graduates to a second year program, similar to SAMS.⁸⁶ The program, which started as the Advanced Defense Studies Course, was to be a strategic studies course to educate "strategists" and strategic thinkers. After several meetings, the working group for the course, under the direction of Colonel George Tiller of CADRE, retitled the proposed

⁸³ Wayne Williamson, Oral History Interview by Thomas W. Crouch, January 24, 1997, in Thomas W. Crouch, ed., *Oral History on Establishment, Operation, and Re-Organization of the Air Force Doctrine Center* (Langley Air Force Base, Va.: Air Force Doctrine Center, 1997), 74.

⁸⁴ Dennis M. Drew, interview by author, March 6, 2012, notes and recording in author's possession; Dembosky, "Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992," 127; Drew, "Inventing A Doctrine Process," 51.

⁸⁵ Department of the Air Force, *Air Force Doctrine Document 1: Air Force Basic Doctrine* (Washington, D.C.: G.P.O., 1997), 36-44.

⁸⁶ Advanced Defense Studies Course Study Group Memo 1 dated July 13, 1988, in Center for Aerospace Doctrine, Research, and Education, "CADRE History 1988, volume 1," SD-16.

course as the School of Advanced Airpower Studies (SAAS). The change in name stemmed from two sources—the first being that the National War College in Washington, D.C. might take exception to the Air Force teaching grand strategy at the national level as its primary discipline, and that educating primarily for grand strategy usually required more experience than could be expected from a staff college graduate.⁸⁷

In a December 6, 1988 briefing to Lieutenant General Thomas J. Hickey, the Air Force's Deputy Chief of Staff for Personnel, Tiller's group described what the course was supposed to produce, namely future four star generals, the officers who will lead campaigns in the future, as well as the place where SAAS graduates should serve, at air component commands and combatant commands. The curriculum at SAAS centered on air campaigns, and specifically on their planning, execution, and leadership. Tiller's group also identified operational art as a focus of the course, citing the Skelton report, which recommended that joint education for field grade officers (typically majors and lieutenant commanders) "should focus on operational art, or theater-level warfare."⁸⁸

Although the stated task of SAAS was to teach operational art, the nuances of its delivery were a reflection of its parent service. Unlike the other second-year programs at Leavenworth and Quantico, SAAS focused primarily on strategy, using historical case studies and exercises to teach air operational art. However, what was largely missing from the curriculum was actual instruction on the conduct of air operations within a campaign. The absence of prescriptive Air Force doctrine on guidance for the conduct of air campaigns was certainly a factor, but the Air

⁸⁷ Tiller's observation was that "one of our findings is that the development of grand strategists should be at a higher level than our course." Col George Tiller, School of Advanced Airpower Studies Study Group Memo Number 8, September 20, 1988; Col George Tiller, Study Plan Briefing, Advanced Defense Studies Course, August 29, 1988; Advanced Defense Studies Course Study Group Memo 6 dated August 30, 1988, in Center for Aerospace Doctrine, Research, and Education, *CADRE History 1988, volume 1*, SD-17 through SD-19.

⁸⁸ Col George Tiller, "Study Group Briefing to Lt Gen Hickey, USAF/DP, on proposed School of Advanced Airpower Studies," memorandum for record and briefing slides, December 6, 1988 in *ibid.*, SD-20 – SD-21.

Force, unlike its Army or Marine counterparts, focused on the theater level as a matter of course. SAAS concentrated on the relationship of strategy to theater warfare far more so than the mechanics of planning operations for corps and divisions at SAMS, which was actually below the theater level, and did not educate combat developers as was the case at SAW.

Lieutenant General Charles G. Boyd, who assumed command of Air University in January 1990, transferred responsibility for the school from Tiller's group to ACSC on June 7, 1990, with its first class starting in July 1991 after the faculty and gaining accreditation to award master's degrees. SAAS graduated its first class in June 1992, but its numbers were too small to make a difference in the force for several years.⁸⁹ Other initiatives for improving the practice of operational art occurred elsewhere at Air University.

Warden, after completing his tour at the Air Staff, became the commandant of ACSC in summer 1992. Before his arrival, ACSC was a gentleman's course, where selection for the course was considered more important than the education gained. Warden's arrival marked an exponential increase in the academic workload placed on the students, who were considered to the top twenty percent of that year's group of officers. Warden initiated sweeping changes in the curriculum, partly to meet the joint professional military education requirements that had emerged from the Skelton report, but also from Warden's experiences at the Air Staff and in developing the INSTANT THUNDER plan for DESERT STORM.

Warden's initial briefing to his faculty centered on improving air campaign planning skills at the operational and strategic levels of war. The changes to the curriculum included a campaign concepts course that required students to translate national strategic guidance into campaign courses of action, as well as the mechanics of campaign planning, using the process

⁸⁹ Drew, interview, March 6, 2012. Drew, a former dean of SAAS, became a professor upon his retirement from active duty and retired from civilian service at the school in 2008 as a professor emeritus.

that had emerged in the Black Hole during DESERT STORM. Warden wanted ACSC graduates to be able to put together effective campaign plans against enemies they might not have anticipated, and wanted to change the school to teach the intellectual and organizational skills required of that task.

Warden's ambitious changes to the curriculum did not match the skills or depth of ACSC faculty, generating substantial frustration and requiring a curriculum redesign the following year.⁹⁰ However, the changes resulted in a unified overview of strategy, campaign planning, joint force structure and capabilities, and joint and air doctrine to a degree not found in any other course. Most notably, it was also the only course specifically addressing the concept of conflict termination as an integral element of campaign planning.⁹¹ While the school taught doctrine, it did so in the larger context of campaign planning.

In spite of its teething troubles, Warden's revised ACSC curriculum became the closest thing to a practical campaign planning course that existed in the Department of Defense professional military education establishment. It outstripped crash courses such as CADRE's defunct Combined Air Warfare Course or even the second year programs like SAMS, SAW, or SAAS. However, the adoption of any curriculum represented necessary tradeoffs, and the amount of campaign planning instruction at ACSC came at the expense of broader tactical instruction that neither the Army nor Marine Corps could forego. The Air Force did not have the same requirement for teaching such tactical knowledge, which resided with training for individual Air Force specialties. The changes to the ACSC curriculum, however, were not the

⁹⁰ Col (Ret) John A. Warden III, interview by author, March 6, 2012, notes and recording in author's possession. Air Command and Staff College, "AY93 Faculty Challenge" dated October 15, 1993, in Air Command and Staff College, *Air Command and Staff College: 1 July 1993-30 June 1994, Volume 1 - Narrative* (Air University, 1994), SD-26, IRIS 1115478, Air Force Historical Research Activity.

⁹¹ Air Command and Staff College, *Air Command and Staff College: 1 July 1994-30 June 1995* (Air University, 1995), 5-11, IRIS 1121217, Air Force Historical Research Activity; Air Command and Staff College, *ACSC History 1993-1994, volume 1*, 9.

Air Force's only intellectual reaction to DESERT STORM. An equally dramatic change regarding doctrine was gestating.

The concept of the joint force air component commander (JFACC) represented the "holy grail" of what the Air Force had tried to achieve before DESERT STORM. The Air Force's effort to enshrine the JFACC in joint doctrine after the war was largely successful.⁹² It represented the Air Force's most concrete practice of operational art since it was an attempt to exercise the concept of centralized control and decentralized execution at the theater level, which the Air Force saw as sacrosanct.

The formal JFACC concept progressed rapidly through several iterations as a consequence of DESERT STORM. The Air Force had recognized the limitations of the JFACC definition in JCS Publication 3-01.2, but the Air Staff's initial attempt in 1990 at a white paper on the JFACC concept gained little traction within or outside the Air Force. An updated white paper, incorporating arguments from DESERT STORM, appeared in draft form in May 1991.⁹³ An Air Staff product published in August 1992 was the first officially-sanctioned text describing the JFACC. The aptly-named *JFACC Primer*, published under the authority of Lieutenant General Buster C. Glosson, the chief of air campaign plans in DESERT STORM and Adams' successor, unequivocally placed the JFACC's responsibility between strategy and tactics, outlining its responsibilities in air campaign planning. The Air Staff published an updated *JFACC Primer* in 1994 in line with changes in joint doctrine.

⁹² Harold R. Winton, interview by author, March 2, 2012, notes and recording in author's possession.

⁹³ Wayne R. Williamson and Woody W. Parramore, interview by author, March 8, 2012, notes in author's possession. Williamson, at the time a lieutenant colonel assigned to the Air Staff, was the author of the white paper. Deputy Chief of Staff for Plans and Operations, "The Air Force Role as the Joint Force Air Component Commander: A White Paper," May 1991, IRIS 0872573, Air Force Historical Research Activity, TF IV JFACC files 1 NOV 89 - 28 MAR 91.

The *JFACC Primer* codified the procedures that Glosson, Deptula, and others had developed during DESERT SHIELD and DESERT STORM for translating theater strategy into tactical direction for air operations in support of a joint force commander.⁹⁴ While the *JFACC Primer* did not use the term, its content was operational art in all but name. Its assertions on centralized control of airpower, however, remained contentious among different services, and the Navy and Marine Corps remained unwilling to relinquish command authority to an Air Force commander.

That logjam remained until the 1994 approval of JP 3-56.1, *Command and Control in Joint Air Operations*, which took much of the content in the *JFACC Primer* and published it as joint doctrine, which was authoritative over any service doctrine. The text resolved much of the ambiguity that had existed in earlier doctrine such as Joint Chiefs of Staff Publication 3-01.2, where the first definition of a JFACC had appeared. Among the changes the Navy and Marine Corps had long opposed was the command authority the JFACC exerted over airpower assets of contributing services.⁹⁵

The approval of JP 3-56.1 had been held up until the friendly fire shoot down of two Army Black Hawk helicopters in northern Iraq by two Air Force F-15 fighters on April 14, 1994. General John M. Shalikashvili, an Army general serving as Chairman of the Joint Chiefs of Staff, had experimented in the past with placing Army helicopters on the air tasking order (ATO), in

⁹⁴ Deputy Chief of Staff for Plans and Operations, *JFACC Primer* (Washington, D.C.: Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, 1992), 16. The changes in the second version included greater detail on the mechanics of campaign planning and airspace command and control. Deputy Chief of Staff for Plans and Operations, *JFACC Primer* (Washington, D.C.: Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, 1994), 14–26.

⁹⁵ Joint Chiefs of Staff, *Joint Publication 3-56.1: Command and Control for Joint Air Operations* (Washington, D.C.: G.P.O., 1994), II–2.

spite of the objections of doctrine writers at Fort Leavenworth.⁹⁶ After learning of the Black Hawk shoot down, Shalikashvili directed the rapid consolidation of comments on JP 3-56.1 prior to approving it in November 1994.⁹⁷ The Air Force had won its fight to institutionalize the JFACC in joint doctrine, but that effort also brought the Air Force's moribund operational doctrine back into the spotlight.

A true implementation manual for the conduct of operational warfare in the Air Force would have to wait. The creation of ACC, while timely, created one unintentional casualty in TACM 2-1. Doctrine writers at TAC, seeking to incorporate lessons from Operations DESERT SHIELD and DESERT STORM, had written a new draft of TACM 2-1 through the end of 1991 that provided a comprehensive overview on how to conduct operations as a JFACC, to include the air tasking order (ATO) generation process. The new draft accounted for the changes mandated by the Goldwater-Nichols Act, and the coordination between TAC and TRADOC showed in a short section on TRADOC's short-lived AirLand Operations concept, as well as the inclusion of the composite air wing concept into the doctrine.⁹⁸ The TACM 2-1 draft disappeared without a trace at the establishment of ACC, leaving the long-obsolete 1968 edition of AFM 2-1 as the only approved Air Force doctrine for air operational warfare.⁹⁹

On April 1, 1997, the Air Force published *Presentation of USAF Forces*, a small pamphlet that specified the operational-level organization and command arrangements for

⁹⁶ GEN John M. Shalikashvili, "Senior Officer Oral History Program: An oral history of General John M. Shalikashvili," interview by COL Frank J. Siltman, 2006, 21, U.S. Army Military History Institute, Senior Officer Oral History Program.

⁹⁷ Michael "Dutch" Dietvorst, interview by author, March 9, 2012, notes in author's possession. Dietvorst had worked on JFACC implementation in USAFE shortly after DESERT STORM, and is a current doctrine developer at the LeMay Center for Doctrine and Education at Maxwell AFB, Alabama.

⁹⁸ Department of the Air Force, Tactical Air Command, *Tactical Air Command Manual 2-1: Tactical Air Operations (Draft)* (Langley Air Force Base, Va.: Tactical Air Command, 1992), 2-1 – 4-13.

⁹⁹ Discussion with Mike Dugre, deputy command historian, Air Combat Command, May 17, 2012. The official histories of TAC and ACC from 1991-1992 have no mention of TACM 2-1, but researchers for the Gulf War Air Power Study team received a copy of a 1992 draft of TACM 2-1 as part of their files, filed next to the 1978 edition of TACM 2-1. The utter absence of any mention of the 1992 TACM 2-1 in any Air Force professional journal (to include *Airpower Journal*) is testament to the fleeting existence of that draft.

airpower, centered on a single air component commander and single air operations center for an entire combatant command. The small pamphlet, with dark red text and graphics on the cover, perhaps inevitably led to the nickname of “Little Red Book,” implying that the contents of the manual might be a revolutionary development within the Air Force. Eighteen months later, AFDD 2, *Organization and Employment of Aerospace Power* replaced the Little Red Book, enshrining its concepts within a capstone Air Force doctrine manual.¹⁰⁰ Much like the 1993 FM 100-5, AFDD 2 did not provide definitive guidance to commanders who actually had to conduct operations. That guidance came in AFDD 2-1, *Air Warfare*, which did not see publication until 1999.¹⁰¹ The 1968 AFM 2-1, obsolete almost as soon as it had been approved, finally had a successor after three decades.

In spite of the emergence of Air Force operational doctrine and the changes in its mid-grade officer educational programs, the Air Force’s culture remained resolutely split between the tactical, where flying skills were paramount, and the strategic, where airpower remained a decisive arm in its own right independent of land and sea forces. The cultural bias towards repetitive tactical leadership tours, punctuated by Air Staff tours for the rising stars in the ranks, maintained the intellectual and institutional void at the operational level.¹⁰²

Joint Doctrine Comes of Age

¹⁰⁰ Richard G. Davis, *Anatomy of a Reform: The Expeditionary Aerospace Force* (Washington, D.C.: Air Force History and Museums Program, 2003), 39.

¹⁰¹ Department of the Air Force, *Air Force Doctrine Document 2-1: Air Warfare* (Washington, D.C.: G.P.O., 1999), 35–59. For the influences on AFDD 2, see Airpower Research Institute, “Proposal for AFDD-2” (Center for Aerospace Doctrine, Research, and Education, September 17, 1997), IRIS 1118904, Air Force Historical Research Activity.

¹⁰² Williamson and Parramore, interview, March 8, 2012. I am also indebted to Lieutenant Colonel David “Sugar” Lyle, director of operations at the 505th Command and Control Wing at Hurlburt Field, Florida and a graduate of the School of Advanced Air and Space Studies, for his observations concerning the Air Force’s long-running marginalization of those with experience in Air Force units with theater-level responsibilities.

The advocacy of joint and combined operations was a fashionable trend in the early 1990s, in spite of some residual opposition by those who felt the Goldwater-Nichols Act was an attempt to usurp authority away from the service chiefs.¹⁰³ The end of the Cold War, however, marked an upcoming fight over roles, missions, and budgets that colored the development of operational art. It also coincided with the appearance of a truly authoritative joint doctrine that formed the first glimmers of hope in addressing the service parochialism and attendant focus on tactics that had hampered earlier attempts at developing operational art. Unfortunately, the vision for the future that emerged from the early 1990s reflected an intellectually wayward U.S. military that stood out in stark contrast to the intellectual ferment before the war.

The state of joint doctrine had been moribund at best before the Goldwater-Nichols Act, when the services ran the Pentagon and used joint processes as a gambit against the other services. Goldwater-Nichols, in a single line, delegated responsibility for joint doctrine specifically to the Chairman of the Joint Chiefs of Staff. The effort to write joint doctrine begun by the first Chairman, Admiral William Crowe, took on new energy after the war. Although the responsibility for publishing joint doctrine rested with the Joint Staff J-7 Joint Training and Doctrine directorate, the actual production of joint doctrine was normally the responsibility of a service, and the resultant doctrine often reflected the interests of the service charged with its production. Since joint doctrine was authoritative over service doctrine, consensus among the services was required prior to the Chairman of the Joint Chiefs of Staff approving the final product. The consequence of that process was that joint doctrine rarely ushered in bold changes.

¹⁰³As an example, the May 1993 issue of the *Proceedings* of the U.S. Naval Institute was dedicated to joint warfare, with articles from GEN Frederick M. Franks and COL Gary B. Griffin, "The Army's View of Joint," *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 54–60 and ADM Frank B. Kelso II and Gen Carl E. Mundy Jr., "Naval Service is Joint," *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 44–46. A future admiral published his view of interagency work in CAPT James G. Stavridis, "Beyond Joint: The Interagency Action," *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 35–39. A dissenting view from William J. Holland, a retired rear admiral, appears in the same issue William J. Holland, "Jointness Has Its Limits," *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 38–42.

The only joint operational doctrine that existed was the 1986 edition of JCS Publication 0-2, *Unified Action Armed Forces*, but its scope was limited to some broad principles of employment, as well as the nominal authorities of the service chiefs and combatant commanders, to include command and control relationships. It contained no information at all on how to employ joint forces in a conflict.

The first attempt to address this gap in joint doctrine was the November 17, 1989 initial draft of a new manual designated JCS Publication 0-1, *Basic National Defense Doctrine*. Written primarily by James E. Toth, a retired Marine colonel teaching at the Industrial College of the Armed Forces, it was a strategic doctrine that was a detailed description of strategic art and national security processes at the national level. As strategic doctrine, it did not describe campaigning or employment of military forces by a joint force commander. Delayed by combat operations in Panama and Southwest Asia, the Joint Staff prepared a proposed final draft of JCS Pub 0-1 on May 7, 1991 that retained the strategic viewpoint and details.¹⁰⁴ Powell, upon seeing the JCS Pub 0-1 final draft, rejected it as too large and unwieldy to communicate the vision he wanted. Powell believed that instilling a genuinely joint perspective in the U.S. Armed Forces would require at least ten to fifteen years, and a procedurally dense manual like JCS Pub 0-1 was not the vehicle to instill that perspective.¹⁰⁵

Instead, he proposed a completely new joint capstone doctrine manual, which became Joint Publication (JP) 1, *Joint Warfare of the U.S. Armed Forces*, dated November 11, 1991. In April 1991, Powell, taking advantage of institutional and cultural momentum for joint doctrine

¹⁰⁴ Joint Chiefs of Staff, *JCS Publication 0-1 (Initial Draft): Basic National Defense Doctrine* (Washington, D.C.: Joint Staff J-7 Doctrine Division, November 17, 1989), Drafter's Notes, Military Publications, U.S. Army Military History Institute; Joint Chiefs of Staff, *JCS Publication 0-1 (Proposed Final Draft): Basic National Defense Doctrine* (Washington, D.C.: Joint Staff J-7 Doctrine Division, May 7, 1991), Military Publications, U.S. Army Military History Institute.

¹⁰⁵ Herrly, interview, June 4, 2012.

at the end of DESERT STORM, charged the Joint Staff with developing a doctrine that went beyond the air and land domains that FM 100-5 had described, and he set an ambitious six-month timeline for its completion.¹⁰⁶ Such a change in perspective had to occur without compromising the experience that each service brought to its respective domain. Rather than numbering the manual as JP 0-1, he likely elected to take a similar approach to the one that the Marine Corps had taken with FMFM 1, and designated it JP 1 to communicate its central position in the doctrine hierarchy.

The approved version contained numerous platitudes regarding the necessity for teamwork, but it also introduced four precedents that were critically important for future doctrine. First, it expressly acknowledged the likelihood that friction, chance, and uncertainty would exist on the battlefield regardless of technological capabilities, quoting Carl von Clausewitz's *On War* to underscore that assertion.¹⁰⁷ Of particular relevance to operational art, JP 1 described campaigns as inherently joint, serving as a "unifying focus for our conduct of warfare."¹⁰⁸ As part of that unifying focus, it described a task titled "direct attack of enemy strategic centers of gravity," rather than the term "strategic attack" that had appeared in Air Force doctrine.¹⁰⁹ In doing so, such attacks were subordinated to the ends that a joint theater campaign was supposed to achieve. Similarly, its discussion of "leverage among the forces" included a brief discussion of support, describing a set of command relationships different from the control relationships that had been more traditional.¹¹⁰ Finally, in spite of the extensive efforts of all of the services to introduce those terms while staffing the manual, JP 1 made no

¹⁰⁶ COL (Ret) Peter F. Herrly, "The Plight of Joint Doctrine after Kosovo," *Joint Forces Quarterly*, no. 22 (Summer 1999): 100.

¹⁰⁷ Joint Chiefs of Staff, *Joint Publication 1, Joint Warfare of the Armed Forces of the United States* (Washington, D.C.: G.P.O., 1991), 4.

¹⁰⁸ *Ibid.*, 45.

¹⁰⁹ *Ibid.*, 56.

¹¹⁰ *Ibid.*, 57.

mention of ground, air, or maritime campaigns—there was only a joint force commander’s campaign.¹¹¹

That service advocacy contributed to the difficulties that the Joint Staff faced in trying to develop JCS Publication 3-0 (Test), the development of which had started in December 1987 with a message from Admiral William J. Crowe, Jr., Powell’s predecessor as Chairman, directing the development of a new manual that directly addressed joint requirements for the conduct of operational art:

- translation of national strategy into assigned missions and military capabilities; capabilities and concepts for employment of component forces in joint operations;
- principles of command organization for all aspects of joint force operations;
- concepts for developing the commander's estimate;
- concepts for discharging warfighting responsibilities; and,
- concepts for planning and executing campaigns employing joint forces across the spectrum of conflict.¹¹²

The Army lobbied successfully to get responsibility for JCS Publication 3-0, seeing it as a lever to shape joint doctrine in the Army’s image. The Army delegated responsibility for writing the new manual to TRADOC, which produced a first draft in December 1988 for initial staffing.

One of the early drafts of the doctrine borrowed liberally from AirLand Battle, even going as far as to have Fundamentals of Unified Operations that sounded surprisingly similar to the tenets of AirLand Battle.¹¹³ The manual went through two more revisions, with a more definitive draft publishing by January 1990, but did not publish in approved form until September 9, 1993 as JP

¹¹¹ Herry, “The Plight of Joint Doctrine after Kosovo,” 100.

¹¹² COL Paul Tiberi, LTC Robert Moberly, and LTC John Murphy, “Force Projection: Seeds for a New Doctrine” (U.S. Army War College Research Project, Merston Center, The Ohio State University, 1991), 19.

¹¹³ The JCS Pub 3-0 draft posited fundamentals of unified operations, of synchronization, agility, depth, initiative, and robustness (the last referring to the adequacy of a joint force to conduct its assigned missions), while the 1986 AirLand Battle used similar language for initiative, agility, depth, and synchronization. Joint Chiefs of Staff, *JCS Publication 3-0 (Draft): Doctrine for Joint Operations* (Washington, D.C.: Joint Staff J-7 Doctrine Division, n.d.), IV–6 – IV–9, U.S. Army Military History Institute, Military Publications.

3-0, *Doctrine for Joint Operations*, after the Joint Staff had taken back responsibility for writing the manual, under Colonel Peter F. Herrly, an Army officer, as the lead author.¹¹⁴

Like any overarching doctrine, JP 3-0 led to several points of controversy among the services. Powell recognized that some issues were too contentious to address in JP 1 and after a preliminary treatment in a 1992 pamphlet titled “A Doctrinal Statement of Selected Joint Operational Concepts,” addressed them more comprehensively in JP 3-0.¹¹⁵ The first issue was deep operations, which after over a decade of experimentation and debate still remained unresolved. The accusations the Army and Air Force made at each other in the wake of DESERT STORM made resolving it a priority.¹¹⁶ Related to the deep battle debate was the role of the JFACC, as well as support relationships, in an expansion from the introductory treatment in JP 1. Rather than exercising traditional relationships such as operational control or tactical control, the provocative implication support relationships was that a JFACC could be a supported commander, rather than just a support arm in a joint campaign.¹¹⁷

The fifth chapter of JP 3-0 introduced the concept of “operations other than war” into joint doctrine, replacing a short-lived construct of “military operations short of war” in the 1991 JP 1 and in Powell’s “Doctrinal Statement” that had replaced the term “low-intensity conflict” from the 1980s.¹¹⁸ While insurgencies fell under the “low-intensity conflict” term, the often lethal consequences of those activities were hardly low-intensity to the people affected.

¹¹⁴ Herrly, interview, June 4, 2012.

¹¹⁵ Romjue et al., *U.S. Army Training and Doctrine Command Annual History, 1 January to 31 December 1992*, 39–40. Powell’s interim pamphlet is available in edited form in Colin A. Powell, *A Doctrinal Statement of Selected Joint Operational Concepts* (Washington, D.C.: Joint Chiefs of Staff, 1992), Research Publications, Joint Electronic Library, <http://www.dtic.mil/doctrine/doctrine/research/p146.pdf> (accessed June 13, 2012).

¹¹⁶ Joint Chiefs of Staff, *Joint Publication 3-0: Doctrine for Joint Operations* (Washington, D.C.: G.P.O., 1993), IV–16 – IV–24.

¹¹⁷ The specific reference to air as a supported commander appears in paragraph 3, Sustained Combat Operations, in *Ibid.*, IV–10.

¹¹⁸ Lt Col Ann E. Story and Maj Aryea Gottlieb, “Beyond the Range of Military Operations,” *Joint Forces Quarterly*, no. 9 (Autumn 1995): 100–101.

However, a clean distinction between peacetime and war carried with it significant legal consequences, and the Army's term of "deterrence operations" brought tremendous friction from the Air Force, who saw "deterrence" solely in nuclear terms. Powell refused to address either counterinsurgency or low-intensity conflict as terms in JP 3-0, and Herrly developed "operations other than war" as a compromise, a construct that later entered Army doctrine through FM 100-5.¹¹⁹

JP 3-0 was the first manual to introduce a joint definition of operational art. Although the first draft did not mention the term, subsequent drafts offered a detailed discussion of the relationship between operational art and strategy, as well as the responsibilities of a joint force commander and his subordinates in the conduct of operational art.¹²⁰ That description of operational art and its relationship to theater campaign planning disappeared in the compromises necessary to gain approval of the final manual. In its place was a muddled definition of operational art that attempted to be something for everyone:

The employment of military forces to attain strategic and/or operational objectives through the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art translates the joint force commander's strategy into operational design, and, ultimately, tactical action, by integrating the key activities of all levels of war.¹²¹

Such a definition attempted to encompass both the formulation of "strategies" and the conduct of tactical actions through "battles." By including "strategies," the definition included the coordinated employment of all the instruments of national power inherent to strategic art (although that term did not exist at the time). The inclusion of "battles" implied that operational art also included the design and execution of tactics, rather than leaving the business of tactics to those tactical-level commands and their leaders.

¹¹⁹ Herrly, interview, June 4, 2012.

¹²⁰ Joint Chiefs of Staff, *JCS Pub 3-0 (test) (n.d.)*, V-1 – V-5.

¹²¹ Joint Chiefs of Staff, *JP 3-0 (1993)*, GL-12.

The Army's influence on JP 3-0 became evident in the discussion of the elements that characterized operational art. Among those concepts were synergy (analogous to the Army's view of combined arms warfare), simultaneity and depth, anticipation, leverage, timing and tempo. A 1995 revision of JP 3-0 that made only small refinements to the text titled those elements as "facets of operational art."¹²² Those facets of operational art also included operational reach, a topic spanning not only JP 3-0, but also JP 4-0, *Doctrine for Logistic Support of Joint Operations*.¹²³

The expanded discussion of logistics that had started when the Army revised AirLand Battle in 1986 also bore fruit in JP 4-0, which covered theater logistics at the strategic and operational level across all the services. While logistics was occasionally an afterthought to tactical combat operations, logistics at the theater level was vitally important because failures of strategic or operational logistics could have catastrophic consequences for a campaign.¹²⁴ Tactical success could not make up for failures in force flow or strategic logistics from the United States to a combatant commander's area of responsibility, nor could it address failures of operational logistics to sustain combat forces in their area of operations. Fortunately, the herculean effort involved in sorting out the planning, deployment, and command and control during DESERT SHIELD and DESERT STORM bore fruit in doctrine after the war. The first approved doctrinal manuals that addressed many of those processes had started prior to the war but saw publication only in 1995.

The first doctrine for the Joint Operation Planning and Execution System (JOPES) finally appeared in 1993, in the form of JP 5-03.1, *JOPES Volume I: Planning Policies and Procedures*,

¹²² Joint Chiefs of Staff, *Joint Publication 3-0: Doctrine for Joint Operations* (Washington, D.C.: G.P.O., 1995), III-10.

¹²³ Joint Chiefs of Staff, *JP 3-0 (1993)*, III-13 – III-22.

¹²⁴ Joint Chiefs of Staff, *Joint Publication 4-0: Doctrine for Logistic Support of Joint Operations* (Washington, D.C.: G.P.O., 1995), III-1 – III-5.

which codified the procedural guidance for executing such planning at the national and combatant command level. The broader doctrinal principles underlying the procedures in JOPES for strategic war planning at the national level appeared in JP 5-0, *Doctrine for Planning Joint Operations*, which had begun as a test document for staffing in 1990 as an attempt to capture lessons from the planning leading up to Operation JUST CAUSE. Operations DESERT SHIELD and DESERT STORM added another delay to incorporate procedures refined during that conflict, and the manual was finally published in 1995.¹²⁵ The advent of joint doctrine for planning meant that a separate system existed for planning and no one service could claim primacy in the joint arena for “their” method of planning, which was a way to bridge the wildly different processes that existed between the Army and the Air Force for communicating tactical direction to subordinate forces. Similarly, JP 0-2, *Unified Action Armed Forces* finally appeared in revised form in 1995, adding text on the authorities of combatant commanders exclusive from those of service chiefs.¹²⁶ That distinction was conspicuous by their absence nine years prior and provided a doctrinal anchor for joint force commanders to prevent the services from directly influencing the planning and conduct of operations.

While the appearance of joint doctrine for operations, logistics, planning, and command was important, it was only a start. The runaway tactical success in DESERT STORM occurred in spite of deep-rooted cultural differences among the services.¹²⁷ During the war, the fight over the role of the JFACC among the Air Force, Navy, and Marine Corps, as well as the presence of two land armies in the form of Army and Marine components, required personal involvement by

¹²⁵ Joint Chiefs of Staff, *JCS Publication 5-0 (Final Draft): Doctrine for Planning Joint Operations* (Washington, D.C.: Joint Staff J-7 Doctrine Division, 1990), Military Publications, U.S. Army Military History Institute; Joint Chiefs of Staff, *Joint Publication 5-0: Doctrine for Planning Joint Operations* (Washington, D.C.: G.P.O., 1995).

¹²⁶ Joint Chiefs of Staff, *Joint Publication 0-2: Unified Action Armed Forces* (Washington, D.C.: G.P.O., 1995), II-12 – II-16.

¹²⁷ Herrly, “The Plight of Joint Doctrine after Kosovo,” 100.

very senior commanders to smooth over, but those changes were on an *ad hoc* basis and a better solution was required. Such change did not start occurring until after DESERT STORM, and were generally isolated cases, such as the full inclusion of the JFACC into joint doctrine.

Another much-delayed change occurred at U.S. Transportation Command (USTRANSCOM), which in 1990 had only wartime command of its Transportation Operating Agencies (TOAs).¹²⁸ That wartime-only relationship caused havoc during the mobilization for DESERT SHIELD. The recommendation made in the wake of the 1978 NIFTY NUGGET exercise for a single manager for all transportation functions did not become reality until the publication of Department of Defense Directive 5158.4 on January 8, 1993. The directive gave the USTRANCOM commander the same command and control authority in peacetime that he had exercised in wartime, and granted command authority over the TOAs as USTRANSCOM's service components.¹²⁹ Although the services still exercised administrative control over their respective components, that authority was secondary to a combatant commander's authorities.¹³⁰ That change in authorities marked a further subordination of service equities to the needs of the joint force.

The conflict between the Army and Marines over the role of a joint force land component commander (JFLCC) was another contentious debate that had to be smoothed out in practice.

The Marines' persistent fear that an Army commander would break up a MAGTF for its

¹²⁸ The TOAs were the Army's Military Traffic Management Command, the Air Force's Air Mobility Command, and the Navy's Military Sealift Command.

¹²⁹ Office of the Undersecretary of Defense for Acquisition, "Department of Defense Directive 5158.4, U.S. Transportation Command," January 8, 1993, 1-4.

¹³⁰ JP 0-2, at the time, defined administrative control as "the direction or exercise of authority over subordinate or other organizations in respect to administration and support including organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, and discipline and other matters not included in the operational missions of the subordinate or other organizations. ADCON is synonymous with administration and support responsibilities identified in Title 10, US Code. This is the authority necessary to fulfill Military Department statutory responsibilities for administration and support." This definition remains virtually unchanged to the present day. Joint Chiefs of Staff, *JP 0-2 (1995)*, III-12.

component parts was the most pressing reason, especially given Army leaders' dissatisfaction with an Air Force JFACC's management of tactical air operations during the war and the presence of a Marine air wing in the MAGTF. The path to a single JFLCC started in 1995 when General J. Binford Peay, an Army officer commanding USCENTCOM, formally assumed the JFLCC role, but designated Lieutenant General Steven L. Arnold, now commanding U.S. Army Central (ARCENT), as deputy JFLCC commander. What made such an arrangement palatable to the U.S. Marine Forces Central was the presence of Lieutenant General Anthony Zinni, a Marine serving as Peay's deputy, giving the Marines recourse to appeal if necessary. In 1998, Zinni, now commanding USCENTCOM, delegated all JFLCC responsibilities to ARCENT, without dispute from the Marines. The openness to accommodation of the senior leaders laid the foundations for cultural change.¹³¹ That understanding, however, was singularly lacking in Washington as the Department of Defense explored future visions for joint warfare.

A Tactical Vision for a Future Strategy

The universal rejection of the strategic doctrine that was the essence of JCS Pub 0-1 did not obviate the need for a view of the future, one that had started with the Base Force and in the *National Military Strategy*. The brutal competition for budget share in the early 1990s produced a legacy of focus on weapons systems and force structure at the tactical level at the expense of almost everything else.¹³² The centerpiece of this tactical focus arrived in the form of

¹³¹ Stephen Kidder, e-mail to author, August 26, 2008. Kidder was Zinni's J-5 (strategic plans and policy) plans chief; OPLAN 1003 replaced OPLAN 1002 as the primary war plan for Iraq after DESERT STORM. Joint Chiefs of Staff, *Joint Publication 3-31: Command and Control for Joint Land Operations* (Washington, D.C.: G.P.O., 2010), I-2. A formalized arrangement would not come until the publication of JP 3-31, *Command and Control for Joint Land Operations* in 2004.

¹³² One casualty included a 1992 attempt to formalize Army and Air Force involvement in each others' BLUE FLAG and BCTP Warfighter exercises, which had occurred only on an informal basis, but it did come to pass due to budgetary shortfalls. John W. Drain, e-mail to author, March 16, 2012. Another was the elimination of open

“transformation,” a direct outgrowth of the role that technology had played in DESERT STORM.

The concept of transformation itself owed to the Soviet Union and its concept of a “military-technical revolution.” Andrew W. Marshall, director of the Department of Defense Office of Net Assessment, emphasized the role of information technology in reshaping new concepts and organizations, postulating that “long-range precision-strike weapons coupled to very effective sensors and command and control systems will come to dominate much of warfare,” and that “the information dimension or aspect of warfare may be coming increasingly central to the outcome of battles and campaigns.” That concept gained significant support from two individuals, the first being Secretary of Defense William J. Perry, who as Undersecretary of Defense for Research and Engineering in the 1970s, had first seen the technologies that matured in time for DESERT STORM. The second was Admiral William A. Owens, Vice Chairman of the Joint Chiefs of Staff, who advocated networking existing sensors, command and control, and precision guided munitions as a so-called “system of systems.”¹³³

The first expression of this belief, rephrased as a “Revolution in Military Affairs” (RMA) appeared in a 1996 Joint Chiefs of Staff concept paper called *Joint Vision 2010*, which was the preliminary concept statement that described how the entire joint force was to fight. Marshall’s vision was readily apparent in its claim to “channel the vitality and innovation of our people and leverage technological opportunities to achieve new levels of effectiveness in joint warfighting.”

The four operational concepts in *Joint Vision 2010* of “dominant maneuver, precision

source intelligence centers throughout the Department of Defense, of which the Foreign Military Studies Office at Fort Leavenworth was the only survivor.

¹³³ Thomas G. Mahnken, *Technology and the American Way of War* (New York: Columbia University Press, 2008), 176–177. Marshall commissioned one of the most influential studies of military-technical revolutions by LTC Andrew F. Krepinevich, Jr. in 1992, which has been reprinted as Andrew F. Krepinevich Jr., *The Military-Technical Revolution: A Preliminary Assessment* (Center for Strategic and Budgetary Assessments: Washington, D.C., 2002). Owens’s argument first appeared in ADM William A. Owens, “The Emerging System of Systems,” *Proceedings of the U.S. Naval Institute* 121, no. 5 (May 1995): 35–39.

engagement, full-dimensional protection, and focused logistics” were collectively means of achieving “Full Spectrum Dominance” over an opponent.¹³⁴ In a post-Cold War security environment where the disappearance of the Soviet threat had resulted in such initiatives as the Base Force and the brutal force reductions resulting from the Bottom-Up Review, a deterministic vision of precise, technologically enabled victory through tactical means held tremendous allure, especially for services whose sacred cows, funded through their budgets, were at risk.

Joint Vision 2010 was an explicit denial of any acknowledgment of the fog of war in JP 1. The concept argued for American forces achieving so-called “information superiority,” being able to control precisely not only the information flow to friendly forces but also its denial to adversaries. Similarly, instead of massing forces, the combination of information superiority and precision strike capabilities offered a vision of rapid, decisive defeat of an enemy principally through tactical means.¹³⁵

Owens described the services’ new concept documents as similar, all arguing for future capability to use “military force with greater precision, less risk, and more effectiveness,” specifically citing Force XXI, *Global Reach*, *Global Power*, *Forward...From the Sea*, and *Operational Maneuver...From the Sea*.¹³⁶ All of the future visions of warfare and changes in doctrine that emerged among the services focused necessarily on competencies within their respective domain. The expense and complexity of introducing new technologies meant that any transformation necessarily had to start at the tactical level, as was the case for Force XXI or OMFTS. Even the Air Force’s advocacy of a JFACC, which supposedly spanned three services, was fundamentally for the purpose of more efficient tactical warfare. While training and

¹³⁴ Joint Chiefs of Staff, *Joint Vision 2010: America’s Military: Preparing for Tomorrow* (Washington, D.C.: G.P.O., 1996), 1–2.

¹³⁵ *Ibid.*, 13–19.

¹³⁶ ADM William A. Owens, “The Emerging System of Systems,” *Military Review* LXXV, no. 3 (May 1995): 16.

doctrine may have focused outwards from the tactical level, the broad perspectives that were necessary for the true practice of operational art could only appear in the domain of joint doctrine, which was still effectively in its infancy, in spite of the intellectual progress made in the early 1990s.

In contrast, *Joint Vision 2010* was the apotheosis of inappropriate tactical bias. Its position as a joint capstone operational concept skewed the services' operational concepts to fit a mirage of building strategically decisive outcomes solely through tactical actions, as occurred with AFDD 1. Of that period, Brian McAllister Linn observed that "because all future wars would be short and decisive - with success measured entirely in the destruction of enemy military forces - the services placed little value on strategic thinkers."¹³⁷ The lopsided outcome at the tactical level in DESERT STORM offered a seeming proof of that vision, in which a technologically superior American force could prevail with low casualties and comparatively little civilian collateral damage - although the environmental conditions that contributed to those outcomes were largely unique to DESERT STORM. Focusing on technical "dominance" at the expense of strategic thinking played to the strengths of tacticians raised in traditional career paths but did little to address the termination criteria for a conflict that resided in the domain of strategy. Ultimately, a deterministic vision like the one in *Joint Vision 2010* was fantasy. Such a vision, to use the words of Michael Handel of the Naval War College, was a "tacticization" of strategy.¹³⁸

Adrift between Strategy and Tactics

¹³⁷ Brian McAllister Linn, "The U.S. Armed Forces' View of War," *Daedalus* 140, no. 3 (Summer 2011): 38.

¹³⁸ Michael I. Handel, *Masters of War: Classical Strategic Thought*, 3rd ed. (London; Portland, Ore.: Frank Cass, 2001), 355–360.

The advent of a credible set of joint doctrine provided the U.S. military a venue for unifying all of the service doctrines for operational art. That doctrinal venue exposed a basic paradox in the rhetoric and practice of operational art: the concepts incorporated into joint operational doctrine originated in service concepts that could not prescribe guidance outside of that service's primary domain. Furthermore, those service-based concepts and doctrine, more often than not, were rooted in tactical practice, which did not always translate to operations or strategy.

The intellectual progress made since the 1980s regarding operational doctrine bore fruit in the 1993 FM 100-5, which addressed linkages of operational art to strategy that had been missing in previous editions. In doing so, the Army left a doctrinal gap in the tactics that were central to the Army's culture, resulting in confusion in the ranks. Similarly, the intellectual rigor in the Air Force's 1992 AFM 1-1 went unappreciated. While the Air Force finally had a worthy basic doctrine, the translation of its basic doctrine into operational direction still rested in the long-obsolete AFM 2-1 and the unification of the Air Force remained a work in progress.

However, the preparation for organizations that had responsibilities in the preparation or conduct of operational art was far improved than before the war. The exercise programs such as the Army's BCTP, the Marines' MSTP, and, as described in a previous chapter, the Air Force's BLUE FLAG, were one element. Fixing the command relationships for organizations such as USTRANSCOM and the progress made in developing the JFACC and JFLCC into useable entities comprised another. None of these improvements would likely have happened in the 1990s were it not for DESERT STORM and the desire of some of its veterans to improve the conduct of operational art.

The other substantive steps that the services took in growing expertise in operational art were their second-year intermediate-level professional military education programs. The considerable reputation that SAMS graduates had earned resulted in the Air Force and the Marine Corps developing SAAS and SAW respectively. The Skelton Report's specific recommendation for intermediate-level schools to teach operational art helped differentiate those schools from the strategic studies instruction that characterized most war colleges. It also differentiated those intermediate-level schools from the tactical instruction at lower-level schools. Ironically, Warden's curriculum at ACSC represented the most useful practical training and education for campaign planning in the Department of Defense, but its singular focus on campaign planning at the expense of tactical expertise in a given domain was more appropriate to a joint school.

All of these changes represented reasonable progress in the rhetoric, practice, and education in operational art. Unfortunately, the vision of warfare espoused in *Joint Vision 2010* and its effects on the services were a giant step backwards from the exploration of operational art to the tactical level of war. Its deterministic vision of future warfare, grounded in technology, was a reaction to the strategic ambiguity resulting from the disappearance of the Soviet threat, a trend that the "peace dividend" and its commensurately reduced budgets only exacerbated. Every armed service had its own vision of future warfare that was ostensibly "operational," but in reality was an extension of tactics. The services could not ignore the requirement to translate those new visions into practice, but the tactical parts of that vision took primacy over other parts that might have been operational in scope, as was the case for the Army's Force XXI and the Marine Corps' OMFTS.

None of those innovations at the level of the various services could address the strategic ends that represent the object of all operational art. The expeditionary character of American military operations meant that operational art was necessarily joint, regardless of whether the circumstances involved were war or “operations other than war.” Even if forces from a given service were tactically decisive, the larger strategic ends that such tactical action had to serve rarely allowed those tactical forces the latitude of campaigning without the force flow and logistics necessary for sustained operations.¹³⁹ However, the intellectually bankrupt vision of future warfare in *Joint Vision 2010* meant that the full promise of joint operational art had to await an unknown future.

¹³⁹ One could make an exception for nuclear warfare, but the mass destruction that would ensue (regardless of nuclear yield and even if only one side employed nuclear weapons) and the character of its use is the only case I can make for tactical actions (in this case, nuclear strike) resulting directly in strategic outcomes. Such strategic outcomes, of course, would have much larger policy implications that are beyond the immediate purview of operational art.

Conclusion

The Unfulfilled Promise of American Operational Art

We had a minor breakthrough in the global engagement game we ran for the Chief of Staff this last fall, because we ended up having three game teams playing a future scenario where they started at a disadvantage. All three teams were very capable people -- CINC staffs, led by retired senior officers. They fell into attrition warfare and, at the end of the game, the enemy Red Force won its limited objective.

We all failed to catch what that limited objective was: to bog down U.S. forces; to create a stalemate; to drain U.S. power; to create a unfavorable attitude and environment at home so that we would give way to rather limited goals and then leave the scene very quietly.

We were aided by the fact that we were supported by our leadership, which allowed us to have a very aggressive enemy Red Force which had a lot freer play than we normally allow in games. They were very aggressive, did some very, very interesting things, and they ended up being a real challenge. Most of the people on the Blue Force felt like they had their hands full. Blue Force members repeatedly asked the controllers, "Why are you letting these guys do this to us?" The controllers would respond, "Who's going to stop them in real life?" These are the real kinds of challenges we're going to be faced with in the future.

Lieutenant General Joseph J. Redden, U.S. Air Force
Commander, Air University¹

Strategy and tactics are two generally well-known terms within the United States military. Operational art, occupying a position between the two, provides the bridge that gives efficacy to strategy through the coordination of supporting tactical actions. While the Army, Marine Corps, and Air Force made halting progress towards developing and institutionalizing the theory, rhetoric, and practice in operational art, its true promise could only be fulfilled after a revitalized joint establishment, in the wake of the Goldwater-Nichols Act, embraced operational art. That promise remained unfulfilled in the 1990s because of a pervasive bias to tactics, as expressed in *Joint Vision 2010* and its effect on the services' operational concepts.

¹ Michael D. Palatas, ed., *Conference on Professional Military Education for the 21st Century Warrior: 15-16 January 1998, Monterey, California* (Monterey, Calif.: Naval Postgraduate School, 1998), 4-4.

Revisiting Some Propositions on Operational Warfare

The normative definition of operational art in the first chapter provides a useful framework for examining the events and influences that led to the formal recognition of a level of war and a discipline between strategy and tactics, initially in the Soviet experience, and later in the American one. Those events and influences, grounded in the foundations of strategy, campaigning, force flow, and logistics, are borne out in several propositions:

- Operational art and strategic art are inseparable.
- Operational art without strategy is merely tactics.
- Tactical excellence without operational art is irrelevant.
- Operational warfare requires balanced application of both art and science.
- Operational warfare is inherently joint.

The development of the theory, rhetoric, and practice of American operational art from 1973 to 1997 highlights a necessary divergence in operational art from the strategy and tactics that are its foundations. The translation of strategy into operational direction is the first part of operational art, but the subsequent translation of that operational direction into tactical action is the second. The high-low divergence also illustrates the divergent requirements that the competent practice of operational art requires. The vehicles for that practice included doctrine, service cultures, and even the tactical capabilities of the force. The greatest hazard to the competent practice of operational art that emerged from the Cold War was a greater failure to keep a strategic perspective, and an inappropriate tactical bias was a recurrent flaw in the ability of the U.S. military to consolidate the gains made in the theory and practice of operational art.

Operational art: campaigning for strategy

The successful practice of operational art requires a basis in strategy. The form of that strategy can vary, whether as a formal document strategy report, a rough strategic concept based on policy guidance, or even a common understanding of ends, but the successful practice of

operational art hinged on the development of a campaign to turn that strategy into specific direction.

Successful campaigning requires a strategy to balance its ends, ways, and means, within the limits of acceptable risk. That balance of strategy was apparent in A. A. Svechin's assessment of the strategic capabilities of the USSR and his argument for a state of "permanence of mobilization" to reduce the amount of time required to field what James Schneider termed an operationally durable force. General William E. DePuy, commanding the Army's Training and Doctrine Command (TRADOC), recognized a similar problem in the early 1970s with his comment that "we don't have a Mobilization Army; we have an 800,000 man Army! That's what we are going to war with. Why should we go to war with untrained platoon leaders, untrained company commanders, and untrained battalion commanders, when they have to win the first battle?"² He knew that a strategy of mobilization was too slow to enable the West to respond credibly to a Soviet attack on Western Europe, requiring a training and education establishment in place to prepare soldiers for their wartime duties upon notification. Those decisions were inherently strategic in nature, often made at the national level, and had to occur long before the beginning of a conflict.

It is in campaigning that tactical excellence devoid of operational art truly becomes irrelevant, especially when considering force flow, logistics, and termination criteria for a campaign. The limits of operational and strategic logistics were prominent in the minds of planners at U.S. Central Command (USCENTCOM) when they developed the first DESERT STORM presentation in August 1990 and recommended to Secretary of Defense Cheney that he request a Presidential Declaration of Defense Emergency and Presidential Selected Reserve Call-

² William E. DePuy, Romie L. Brownlee, and William J. Mullen, *Changing an Army: An Oral History of General William E. DePuy, USA Retired* (Carlisle Barracks, Pa.; Washington, D.C.: U.S. Military History Institute; U.S. Army Center of Military History, 1988), 183.

up. Those two unequivocal statements of national will were necessary to deploy forces into the theater of war that were required for the main attack. The Support Command (SUPCOM) experienced those challenges in providing logistics support to U.S. and coalition forces over the entire Arabian Peninsula. At the end of the war, calls to turn north to Baghdad to topple Saddam Hussein ignored the absence of any writ authorizing the United States and its coalition to embark on such a regime change. Those advocating such an attack north had become distracted by the coalition's runaway tactical success, overlooking completely what the coalition objective actually was.

Operational art: campaigning with tactics

The successful practice of operational art also requires the tactical forces committed to be capable of accomplishing their wartime missions. In the immediate aftermath of Vietnam, the U.S. military was incapable of defeating a Soviet attack on Western Europe. Reconstituting credible tactical forces required new doctrine such as Active Defense, AirLand Battle, and maneuver warfare, as well as training initiatives such as the Army Training and Evaluation Program, the National Training Center, and RED FLAG. The broader effect of those changes was a professionalization of the tactical forces across the services. The services' institutions for training prospered during that period, but placed little premium on the political-military judgment that only education could provide.

When tactics and campaigning were at odds with each other, the result was not unlike what the Soviets had faced with their theory and practice of operational art. Soviet operational art theory was intellectually rigorous in both the science and art of war, but its Achilles heel was a political system that ensured that the individual initiative in the ranks necessary to make it work at the small unit level could never exist. Soviet small-unit tactics in theory were not much

different than those of the West. In practice, Soviet tactics were a recipe for the very experience that DePuy sought to prevent with Active Defense.

DePuy's decision to focus Active Defense almost exclusively on tactics, born of the exigencies of the force he was to train, was not surprising in light of his prior combat experiences and view of human nature. He also recognized afterwards the very real limitations of that approach, and said that "we did not hold forth any real hope of victory in Europe- just one hell of a battle prior to going nuclear."³ General Donn A. Starry's attempts to address the dilemma he perceived from the *Holding Pact Second Echelon Forces at Risk* report, from the Central Battle all the way to the Extended Battlefield, were attempts to shape tactics to resolve a strategic problem posed by the West German and NATO strategy of forward defense. In comparison, the Soviet Operational Maneuver Group was a direct response to Active Defense, but had foundations in strategic ends to capture specific objectives quickly to preempt nuclear release by the North Atlantic Treaty Organization (NATO).

Under AirLand Battle and Follow-On Forces Attack, NATO's conventional military capability improved qualitatively until they had become collectively more capable than their Warsaw Pact adversaries. The ratification of the Intermediate Nuclear Forces treaty, an example of strategic art in using diplomacy to affect military power, served as a critical blow to Soviet military power as their intermediate-range nuclear weapons were the only counter the Soviets had to the NATO threat.

A significant change in the strategic means available to NATO emerged from the tremendous improvements in the professionalism and lethality of the tactical forces. However, that change of means did not directly address the ways or ends that had implications for the

³ GEN William A. DePuy, interview by Michael Pearlman, May 16, 1987, Box 2, U.S. Army Military History Institute, William E. DePuy Papers.

strategy upon which operational art depended. What the relationship between campaigning and tactics could do was describe the methods by which a joint force commander would direct his components to execute his campaign plan. The components, in turn, were responsible for commanding their tactical forces pursuant to that campaign plan's guidance.

The belief that any one arm could be decisive on its own, as Colonel John C. Warden III asserted in *The Air Campaign*, ignored the reality of force flow and logistics. The tactical fighter squadrons that deployed to Saudi Arabia in the first weeks of Operation DESERT SHIELD deployed without most of the support organizations necessary to allow them to fight over the duration of a campaign. The responsibility for moving those forces, in any event, belonged to U.S. Transportation Command (USTRANSCOM) after a bitter fight to wrest command of the transportation operating agencies away from the services. Similarly, the realities of deploying the armored units necessary to destroy Iraqi forces in Kuwait required air and sea superiority to enable those forces to enter the theater of war, let alone close on their attack positions for combat. It also required the deployment of sufficient supplies to sustain those units through the duration of combat required to achieve termination criteria.

During DESERT STORM, once forces had closed in the theater of war, supporting those forces in combat was not General H. Norman Schwarzkopf's or Lieutenant General W. Gus Pagonis's direct responsibility as much as it was that of his component commanders. When Brigadier General Charles C. Krulak established a logistics base at Kibrit forward of I Marine Expeditionary Force (MEF) ground combat units during DESERT SHIELD, he accepted substantial tactical risk, knowing such risk was required to support the operational maneuver of I MEF based on its original plan. When a late change to a two-division attack required the construction of a base of comparable size at al-Khanjar 100 kilometers west, Krulak was able to

do so in two weeks but effectively ceased operations to move his command, which was another exercise in weighing risk. During the attack, tactical decisions to transfer fuel between the 3d Armored Division and the 1st Infantry Division during DESERT STORM paid off as the former was dangerously close to operational culmination. AirLand Battle had given logisticians an equal seat at the proverbial table in operational art-- DESERT STORM showed the necessity of that equal seat.

The piano-key disposition of forces, with U.S. forces in proximity of all other coalition corps-level units, was a result of a realistic assessment of the combat capabilities of the various coalition forces, as well as the allowances made for coalition political sensitivities. Consequently, the movement of VII and XVIII Corps into their attack positions required detailed control of that movement because they would not have been in position to attack in the necessary tactical formations without those moves-- a validation of the theoretical work that General Crosbie Saint and Colonel Leonard D. Holder had done in peacetime for an armored corps in the attack. None of those details would have been discernible to an operational art practitioner informed of strategy but ignorant of tactics.

Service perspectives in American operational art

One of the greatest challenges in the planning and conduct of operational art was reconciling different service perspectives. Sea power, being unique to the Navy, was not generally subject to this tension, and the differences between the Army and Marine Corps on land power were noncontentious. However, for the debate over air power was a point of substantial friction among the services before, during, and after DESERT STORM.

The practice of decentralized command, and the resulting development of *auftragstaktik* in the ranks, was a necessity for ground forces in the Army and Marine Corps, which had to fight

dispersed to survive on the battlefield. As a result, those services tended to create combined arms organizations down to the small unit level. That decentralization of resources for planning and execution for ground tactical commanders sacrificed efficiency for responsiveness, but was consistent with the two services' bias towards tactics.

The Air Force's culture, however, held centralized control and decentralized execution as an article of faith. The comparative scarcity of air power, stemming from the likelihood that the number of targets would exceed the number of sorties available, tended to focus planning for air power at the theater level, since it was the highest level at which airmen could most efficiently manage the resources across the theater of operations, while delegating the actual execution two or more echelons below, typically to the wing or squadron level. That view of air power was inimical to the Marine Corps and Navy, since those services viewed air power as an organic element to support their own service task forces.

Individual friendships between senior Army and Air Force generals were crucial in bridging differing service perspectives. Among the most fruitful example of such coordination was the coordination between DePuy at TRADOC and General Robert J. Dixon at Tactical Air Command (TAC) that created the Air-Land Forces Application (ALFA) agency, and the later coordination between Starry and Creech that enabled the creation of AirLand Battle, a necessary stepping stone for the 31 Initiatives. That common ground was singularly lacking with the sea services. The Navy and Marine Corps made only grudging compromises for tactical air, ensuring that they would retain operational control of their aviation in DESERT SHIELD and DESERT STORM. They relented only with the formal introduction of the joint force air component commander (JFACC) in 1994. That joint doctrine was an instrument to unify

coercively efforts like the JFACC that would never have merged along service lines, but such coercion was impossible until the passage of the Goldwater-Nichols Act.

Doctrine and organizational culture in American operational art

A central paradox to the development of operational art in the United States military was the differences from its origins in service doctrine to its ultimate practice at the joint level. Those differences existed in addition to the different views of doctrine among the Armed Forces, differences that had institutional and cultural roots. While it was possible to change the prevailing beliefs on doctrine, such an effort required no small amount of creative destruction on the part of senior visionaries who had both the vision and the authority required to compel their institutions to change, sometimes against their will.

All of the services found that defining themselves from tactical standpoints addressed the philosophy and methods by which they would prosecute combat in their respective domains. That focus on tactics left fundamental questions on the purpose, roles, and missions of the services unanswered. Each service produced strategic capstone doctrine, in the form of Field Manual (FM) 100-1 and Air Force Manual (AFM) 1-1, which had matured in 1981 and 1992 respectively. The Marine Corps, organized for crisis response and expeditionary functions, published a basic philosophy for action in Fleet Marine Force Manual (FMFM) 1, but eventually published more specific guidance in the form of Marine Corps Doctrinal Publication (MCDP) 1-0 in 2001.⁴ The Navy was the lone exception, as its *Maritime Strategy* was the closest thing to

⁴ Headquarters, U. S. Marine Corps, *Marine Corps Doctrinal Publication 1-0: Marine Corps Operations* (Washington: G.P.O., 2001), 1-13 – 1-23.

doctrine that the Navy would tolerate until the publication of its first capstone doctrinal manual in 1994.⁵

The Goldwater-Nichols act, in removing the services from the operational chain, was the impetus to the creation of a body of joint doctrine for operational art that was authoritative, while able to unify different service doctrines into a larger whole. In spite of the Army's efforts to ensure it had writing responsibilities for Joint Publication (JP) 3-0, joint doctrine had to be acceptable to all of the services, although its directive value took on substantially new life after General Colin L. Powell, Chairman of the Joint Chiefs of Staff, made JP 1 one of his priorities after DESERT STORM.

The differences between JP 1 and its predecessor, JP 0-1, illustrate another trend with doctrine, in that it becomes less prescriptive as it addresses higher-level functions. JP 0-1 was a detailed manual, describing many procedural aspects on the conduct of joint strategy. The hazard of such detail was its potential use to impede joint processes, rather than enabling action, as had been the case prior to Goldwater-Nichols.⁶ Consequently, JP 1 was much more general in its tone, but expressed necessary details of certain topics on which Powell wanted to adjudicate. Discussions of topics too contentious to address in JP 1 appeared in much more substantive form in JP 3-0, but the general rule ended up becoming "less is more" because less detail left more discretion in the hands of the commanders responsible for executing that doctrine. A similar difference existed between the strategic-level manuals like FM 100-1 and AFM 1-1 and operational-level manuals like FM 100-5 and TAC Manual (TACM) 2-1. That high-low mix between strategic and operational doctrine reflected the divergent foundations of operational art.

⁵ Office of the Chief of Naval Operations and Headquarters, U. S. Marine Corps, *Naval Doctrine Publication 1: Naval Warfare* (Washington, D.C.: G.P.O., 1994).

⁶ COL (Ret) Peter F. Herrly, interview by author, June 4, 2012, recording and notes in author's possession.

Doctrine also has a material effect on service culture. In some cases, it can be used as a vehicle for changing the culture of a service, which DePuy did with FM 100-5 in 1976. However, the Army had the benefit of a single, universally understood institutional purpose of large-scale land campaigning. The desire of Generals Gordon R. Sullivan, Army Chief of Staff and Frederick M. Franks, Jr., TRADOC commander to use doctrine as an “engine of change” after DESERT STORM was an acknowledgment that culture lagged doctrinal change in the Army, as had been the case for Active Defense and AirLand Battle. The Army and Marine Corps required such a view of doctrine because of the necessity to standardize tactics among different units.

Such a requirement did not exist to the same degree in the Air Force because the missions and tactics for the Tactical Air Forces and Strategic Air Command were so different. That split, and the absence of a commonly-accepted unified theory of American air power, made a usable Air Force basic doctrine very difficult to write. The first usable basic doctrine that addressed the wider roles and missions of the Air Force was Colonel Dennis M. Drew’s AFM 1-1 in 1992, but a larger anti-intellectualism in the ranks hindered its use as an instrument of unification, even in the wake of the Air Force’s reorganization in the wake of *Global Reach, Global Power*.

The circumstances surrounding FMFM 1 were slightly different, as the cultural influences that were part of FMFM 1 had already been gestating in the Marine Corps for several years prior to the publication of FMFM 1. Although the maneuver warfare advocates considered FMFM 1 as validation of their philosophy, that debate continued for several years after its publication in 1989. General Alfred M. Gray, Jr., Commandant of the Marine Corps, also used FMFM 1 as an instrument to ensure the changes in the Marine Corps culture that he wanted to inculcate. Powell had a similar motive for JP 1 after DESERT STORM.

The philosophy and principles laid out in the higher-level manuals, however, did not account for the low side of operational art, where the services needed the detail described in its operational doctrine to inform the tactics, techniques, and procedures published in tactical manuals. The organizations that normally executed the doctrine at this level were joint task forces, service components, or functional components. However, the operational doctrine that describes the roles of an operational, rather than tactical headquarters largely did not exist, and all of the services arrived late at such doctrine.

None of the services developed component-level doctrine until the 1990s. The Army had no usable echelons-above-corps operations manual until the publication of FM 100-7 in 1995. The Marine Corps did not publish any component-level doctrine until 1998, and even that required some elaboration three years later in MCDP 1-0.⁷ The Air Force's AFM 2-1 became obsolete almost immediately after its publication in 1969, going three decades between revisions. Efforts at TAC to address operational doctrine were doomed to failure because it could not speak for the Air Force. In the meantime, Drew's observation that "informal doctrine exists for better or for worse" certainly applied to the practice of low operational art in the absence of any formal doctrine.⁸

The Goldwater-Nichols act unequivocally placed joint commands and doctrine over their service counterparts, a critically important requirement for operational art. High operational art, in its interface with strategy, required a properly empowered joint organization as an honest broker for strategy, campaigning, force flow, and logistics. A joint organization was not beholden to administrative control by the services; rather, a joint force commander was expected

⁷ Headquarters, U. S. Marine Corps, *Marine Corps Warfighting Publication 0-1.1: Componency* (Washington, D.C.: G.P.O., 1998).

⁸ Dennis M. Drew, "Inventing A Doctrine Process," *Airpower Journal* 9, no. 4 (Winter 1995): 51.

to rise above service parochialism, failures of which had catastrophic results in the NIFTY NUGGET and PROUD SPIRIT exercises.

That parochialism was still very much in existence in 1990. USTRANSCOM spent significant effort in the first months of DESERT SHIELD trying to get strategic deployment under control because tactical units were attempting to arrange strategic movement independently until Powell intervened. Schwarzkopf's decision to act both as a joint force commander and as a joint force land component commander (JFLCC) was unavoidable for cultural reasons, since the Marine Corps was unwilling to subordinate itself to an Army JFLCC. Similar battles occurred between the Air Force and the other services over the role of a JFACC. The friction and fog of war that complicated the last day of the ground offensive in DESERT STORM pulled Schwarzkopf toward his self-appointed duties as a JFLCC and the tactics of low operational art, rather than on the high operational art necessary of a joint force commander to achieve the termination criteria of the entire coalition's campaign.

Powell faced service parochialism among all of the service chiefs throughout his tour as Chairman of the Joint Chiefs of Staff. It was that parochialism that spurred him to cancel the development of a detailed strategic doctrine in JP 0-1 and instead, develop JP 1 as the instrument to create a culture of jointness, which he knew would emerge slowly. The Air Force's experience trying to get the JFACC into JP 3-56.1 and the slow acceptance of a JFLCC in USCENTCOM illustrated how ingrained that resistance was after DESERT STORM. However, the war was the catalyst to the publication of a family of joint doctrine that was authoritative over service doctrine. That joint doctrine, building on the foundation of an improved professional military education establishment, was a critically important vehicle for institutionalizing effective operational art across the U.S. military.

Training and education for American operational art

The institutional preparation for the theory and practice of operational art required both education and training. Education would provide a better preparation to face the inherently ambiguous problems that came at the strategic level, but could provide little to assist the actual conduct of operational warfare, which could only come through training. The distinctions between the two, however, also illustrated a gap between the services and the joint force that had started to emerge by the 1990s.

The first program to educate specifically for operational art began under Colonel Huba Wass de Czege at the School of Advanced Military Studies (SAMS), whose graduates went on to distinguished service before, during, and after DESERT STORM. The first three directors of SAMS all recognized the limitations of the tactical instruction at the Army's Command and General Staff College and wanted to ensure that tactical gains were not squandered on failures of operational art. Representative Ike Skelton's House Armed Services Committee report on professional military education specifically cited SAMS as an example of what the services should emulate for education in the operational art.⁹

The Marine Corps and Air Force followed suit with their own programs, reflecting their own service cultures. The Marine Corps School of Advanced Warfighting (SAW) taught operational art and institutional processes such as combat development so that they could serve at strategic-level assignments throughout the Marine Corps, reflecting its tendency to reinvent itself after major conflicts. The Air Force School of Advanced Airpower Studies (SAAS) taught

⁹ Kevin C. M. Benson, "Educating the Army's Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994" (PhD dissertation, Lawrence: University of Kansas, 2010), 290.

operational art primarily through the creation of strategists, focusing on high operational art at the expense of operational planning.

The other outgrowth of the Skelton Report was a revitalization of the command and staff college programs throughout the military, although the differences were most pronounced in the Marine Corps, which added the operational level of war to its curriculum in 1989, and in the Air Force, where Warden's changes to the Air Command and Staff College (ACSC) curriculum produced an operational planning course that sacrificed tactics to concentrate intensively on the mechanics of campaigning. The staff colleges and second-year programs were necessary building blocks for introducing the intellectual processes necessary for high operational art, but could not teach all of the functional skills necessary for the conduct of low operational art, which required dedicated training programs.

The Air Force, with its traditional orientation to the theater level, was the first service to develop a training program for operational warfare. The Combined Air Warfare Course (CAWC), which ran from 1977 to 1991, was the only short course in the Department of Defense that taught the mechanics of high operational art. The Air Force's Contingency Wartime Planning Course (CWPC) covered some of the administrative procedures necessary for the conduct of low operational art. BLUE FLAG expressly trained operational staffs in the conduct of theater-level warfare, but it was an outgrowth of RED FLAG, which was purely a training program for tactics. BLUE FLAG was the only operational-level staff training program in the Department of Defense until 1988.

The Army had developed its Combat Training Center program to build tactical skills in the force necessary for Active Defense and later, AirLand Battle, but its scope was limited to battalion task forces until the late 1980s, when it started training brigades. The Battle Command

Training Program (BCTP) emerged only from the realization that divisions and corps needed a training experience, and drew from the intellectual reserve built at SAMS. The Marine Corps established a similar program with the Marine Air-Ground Task Force (MAGTF) Instruction Team (MIT), which later became the MAGTF Staff Training Program (MSTP) in the wake of DESERT STORM, drawing from the Marine Corps War College (MCWAR) for its initial cadre. Although all of those efforts remain to this day, the training for operational warfare remains a poor relation to the attention paid to the tactical forces at the center of the U.S. military's culture.

Inappropriate Tactical Bias

The failure of *Joint Vision 2010* to communicate a coherent vision for the joint force was another chapter in a recurrent trend, namely that of inappropriate tactical bias. The cultures in the services were ineluctably drawn to the tactical level by internal politics and budgetary pressures. Joint organizations, even after Goldwater-Nichols, were unable to force a broader strategic perspective, especially after the Cold War when fiscal austerity exacerbated the effects of service parochialism.

The central assumption of inappropriate tactical bias was that operational art could be conducted in the same manner as tactics. While education and relevant experience could address that false analogy, career paths and internal cultures within the services valued repetitive service at the tactical level, closest to the styles of warfare that the services held as their identities. That inappropriate tactical bias also made tactical commanders ignorant of the impact of military actions on other instruments of national power, and those commanders visualized strategy as aggregated tactical actions with strategic effect from the bottom up. They did not see a distinction between a bottom-up approach and the translation of strategy into operational guidance from the top down.

That bias was amplified even further for specialties that required long training in highly technical skills not found elsewhere in the force. Those units tended to train almost exclusively on those unique capabilities, which sacrificed broader perspectives that only education or experience above the tactical level could provide. Training could not teach the strategy and associated judgment necessary for the practice of high operational art, which had little immediate utility in tactics. The anti-intellectualism in the Air Force that doomed the “documented” AFM 1-1 and the Navy’s general antipathy for doctrine were products of that phenomenon.¹⁰ Career experience by those specialists outside those communities tended to be rare due to the rigors of entry into those fields, and their members tended to curtail assignments away from those communities so they could return quickly at minimal tactical risk. A universal trend among every second-year intermediate school was the perception of tremendous career risk for all of the officers attending such programs in the first several years of their existence.¹¹ That risk stemmed from the way the services selected officers for promotion and assignments, which rewarded repetitive command assignments in tactical organizations.

The Army educated for the ends of the levels of war. The branch schools and the standard Command and General Staff Officer Course remained anchored in tactics, while the Army War College covered strategy at the political-military level. While SAMS started as an attempt to improve tactics in the force, it became the only organization that studied the theory and practice of operational art and campaigning to any significant rigor. The curricular grounding in theory and doctrine at SAMS was instrumental in giving the theoretical and

¹⁰ A former commander of the Combined Arms Center noted the two hardest constituencies to convince of the need for AirLand Battle when he was at the TRADOC Office of the Deputy Chief of Staff for Combat Developments were the infantry and Special Forces communities, who tended to “visualize at 2 1/2 miles an hour.” LTG (Ret) Wilson A. Shoffner, interview by author, December 15, 2011, notes in author’s possession.

¹¹ LTG (Ret) Leonard D. Holder, interview by Kevin C. M. Benson, December 5, 2008, transcript in author’s possession; Roger J. Spiller, interview by author, November 28, 2011, recording in author’s possession; Dennis M. Drew, interview by author, March 6, 2012, notes and recording in author’s possession; Bruce I. Gudmundsson, email to author, January 21, 2012.

practical foundations required to translate the very different intellectual processes involved in strategy and tactics into practice at the operational level of war.

The Army's training apparatuses, however, remained necessarily fixed at the tactical level. The Combat Training Center program trained battalions and brigades, command of which was virtually the only path to promotion to general officer. The BCTP trained divisions and corps staffs, but only in the conduct of low operational art. The translation of strategy that was the domain of high operational art remained solely a function of education and experience for the few officers who served in those capacities.

As a result of the cultural bias towards the tactical, theater armies and army service component commands were denuded of the talent they desperately needed. Instead, that talent went to the divisions and corps that fought almost entirely at the tactical level. With its fight-on-notification mission in the Cold War, USAREUR was the one exception to this trend, but ARCENT required augmentation by its "long-ball hitters" to be fully capable of the tasks it faced during DESERT SHIELD and DESERT STORM. Combined with the predominant focus on repetitive tactical command, in the words of Lieutenant General Leonard D. Holder, an author of *AirLand Battle*, "the Army has never had a strong affinity for operational art, and there's a tendency, not to reject it, but to ignore it."¹²

The Marine Corps, with a traditional mission of crisis response, did not face all of the aspects of operational art. The presumption of crisis response was that conflict termination was the responsibility of a theater commander, not a MAGTF, so its culture emphasized tactics, a trend that maneuver warfare only amplified.

¹² LTG (Ret) Leonard D. Holder, interview by author, December 23, 2011, transcript in author's possession.

Maneuver warfare, which some equated with the practice of operational art, was in actuality a philosophy that served the Marine Corps well for its tactical mission. Taken in isolation, maneuver warfare could be counterproductive to the exercise of operational art, as Schwarzkopf found during Desert Storm when Marine forces were in danger of entering Kuwait City first during the war, which made perfect sense from a tactical sense but would have been a strategic blunder.¹³

The training and professional military education for Marines reflected the tactical focus of their parent service. The MSTP, like its Army counterpart, was the only Marine Corps establishment to train staffs in the conduct of low operational art. The Marine Corps professional military education establishment shared with the Army an emphasis to educating to the ends of the levels of war, with SAW in the same position as SAMS to fill the gap in educating for operational art. The Command and Staff College was a poor relation until Colonel Paul K. Van Riper's reforms, and the Marine Corps did not have a war college to teach strategy until 1991. The Amphibious Warfare School, a school of tactics for captains, was still the most prestigious school among the schools in Marine Corps University.

Even at the tactical level, there were reasonable limits to what a force could accomplish, and the practice of maneuver warfare assumed that units would have a relatively free hand in the tactics they could use. That approach worked so long as Marine forces could act independently of other units, which was another recurrent theme in operational employment of MAGTFs and their resistance to an Army JFLCC. The primary concern for Marines was sanctity of the MAGTF, as part of the rationale for its separate existence.

¹³ Ironically, the Marine Corps is the only service with a manual that describes strategic theory and the conduct of strategic art, which is MCDP 1-1, *Strategy*, written by Christopher Bassford. A distillation of Clausewitz and Sun Tzu for Marine audiences, MCDP 1-1 did not appear until 1997.

The Air Force, with its traditional focus on the theater, was best positioned of the three services to embrace operational art. However, it was the last of the services to acknowledge operational art in its professional lexicon, and did so only after a massive reorganization of the Air Force that was an attempt to bridge a schism that had existed from the service's beginnings.

The Air Force's post-Vietnam revitalization started with tactical training programs such as RED FLAG, but eventually came to include operational warfare with BLUE FLAG. Virtually all of those programs were restricted to the Tactical Air Forces, and operational art effectively did not exist in Strategic Air Command due to the character of its mission.¹⁴

The Air Force's doctrinal touchstone of centralized control and decentralized execution was virtually tailor-made for a theater-level air power commander and operational art, something for which the Air Force did not achieve in doctrine until the 1990s with the JFACC and the Little Red Book. Air Force doctrine was moribund until the creation of Air Combat Command (ACC), which removed some of the organizational divides between the tactical and strategic air forces. Only then could the Air Force publish a rigorous basic doctrine, but a larger theory of air power remained elusive, Warden's theory of air power notwithstanding.

The fiscal austerity imposed by budgetary cutbacks was a powerful catalyst for inappropriate tactical bias. When the budget was at stake, acquisitions programs became the focus of effort, and most of those acquisitions programs correlated well with tactical requirements and capabilities, not those at the operational or strategic levels. The tortuous character of the Planning, Programming, and Budgeting System (PPBS) amplified that trend even further. Senior leaders had an obligation to ensure that fighting the "Pentagon wars," to use

¹⁴ Strategic Air Command had a readiness program called OLYMPIC FLAG to train missile crews. The exercise later became GUARDIAN SWORD under Air Force Space Command in 1994. Ssgt Timothy Hoffman, "Guardian Replaces Olympic," *Association of Air Force Missileers Newsletter* 2, no. 1 (January 1994): 4.

Drew's term, did not result in inappropriate tactical bias, but those battles, fraught with politics, rarely ended that way, and the operational concept that emerged in the 1990s reflected that bias.

The development of operational art is a problem that spans strategy, education, doctrine, and training, as well as the "tactical" abilities of the services to buy specific programs that feed those strategic visions and concepts. Unfortunately, the first operational concept to guide development of the joint force was a step backward in the development of true joint operational art. *Joint Vision 2010* was ostensibly grounded in the various strategy reports that the Goldwater-Nichols Act had mandated. In reality, it was a vision for building tactical forces. The severe cuts in the defense budget in the 1990s had created an environment where the services sought to protect their favored acquisitions programs first. Almost universally, those programs favored tactical systems and organizations.

The deterministic vision of networked forces achieving "Full Spectrum Dominance" over an opponent was a manifestation of the belief that tactical actions aggregated together could achieve termination objectives. That vision was not the same translating a strategy into a sequence of tactical actions that had a collective strategic effect. *Joint Vision 2010* was an attempt to apply tactical constructs uncritically to the operational and strategic level, creating an intellectually bankrupt vision for the future. It had become, in essence, tactical action divorced from strategy, and its influence on service concepts like Force XXI, Operational Maneuver from the Sea (OMFTS), and in Air Force Doctrine Document (AFDD) 1 meant that the true promise of American operational art, while not eliminated altogether, remained unfulfilled in the immediate wake of the Cold War.

Bibliography

Journal articles that were part of the discourse on their respective doctrinal trends have been listed as primary sources, separate from other articles that were not part of the discourse.

Some government sources are classified or had dissemination restrictions. Some documents had been declassified or, if unclassified, had their dissemination restrictions removed. Of the documents that retained their classification, only unclassified portions were used and cited in the narrative. Those portions were reviewed for release prior to use in this dissertation.

Primary Sources

U.S. Government Publications/Documents

Air Combat Command, Office of the Command Historian, Langley Air Force Base, Virginia

Tactical Air Command, Command Chronology Files, 1991
Air Combat Command, Command Chronology Files, 1991-1994

Army Heritage and Education Center (AHEC), U.S. Army Military History Institute, Carlisle Barracks, Pennsylvania

William E. DePuy Papers
Jack N. Merritt Papers
Glenn K. Otis Papers
William R. Richardson Papers
Crosbie E. Saint Papers
Donn A. Starry Papers
Gordon R. Sullivan Papers
Harry G. Summers Papers

Combined Arms Research Library (CARL) Archives, Fort Leavenworth, Kansas

Combined Arms Center Historical Files
Command and General Staff College Curriculum Files, 1974-1995
FM 100-5 Files, 1986, 1993, and 1998

Curtis E. LeMay Center for Doctrine Development and Education, Maxwell Air Force Base, Alabama

Air Force Doctrine Center Historical Files

General Alfred M. Gray Jr. Research Center (GRC), Archives and Special Collections Branch, Marine Corps Base Quantico, Virginia

Historical Amphibious File (HAF)
Marine Corps Combat Development Command (MCCDC) Files
Command Chronologies 1987-1994
School of Advanced Warfighting (SAW) Collection
Southwest Asia (SWA) Collection

- U.S. Air Force Historical Research Activity (AFHRA), Maxwell Air Force Base, Alabama**
 Air Command and Staff College (ACSC) Histories, 1983-1994
 Air Force Doctrine Document 2 Working Files, 1996-1998
 Center for Aerospace Doctrine, Research, and Education (CADRE) Histories, 1983-1994
 DESERT STORY Collection
 Gulf War Air Power Survey (GWAPS) Collection, Task Force IV and V Files
- U.S. Air Force Warfare Center, 505th Combat Training Squadron, Hurlburt Field, Florida**
 BLUE FLAG Exercise Reports, 1977-1999
- U.S. Army Training and Doctrine Command, Military History Office, Fort Eustis, Virginia**
 Louisiana Maneuvers Collection
 Annual Command History Files 1990-1993
- U.S. Marine Corps Historical Division, Marine Corps Base Quantico, Virginia**
 Wars - DESERT SHIELD and DESERT STORM files

Doctrinal Manuals and Operational Concepts

- Central Intelligence Agency, trans. *Field Service Regulations of the Armed Forces of the USSR (Division-Corps)*, 1959. Voenizdat, 1959.
http://www.foia.cia.gov/docs/DOC_0001197486/DOC_0001197486.pdf (accessed September 12, 2011).
- Department of the Air Force. *Air Force Doctrine Document 1: Air Force Basic Doctrine*. Washington, D.C.: G.P.O., 1997.
- . *Air Force Doctrine Document 2-1: Air Warfare*. Washington, D.C.: G.P.O., 1999.
- . *Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force*. Washington, D.C.: G.P.O., 1984.
- . *Air Force Manual 1-1: Basic Aerospace Doctrine of the United States Air Force*. 2 vols. Washington, D.C.: G.P.O., 1992.
- . *Air Force Manual 1-1: Functions and Basic Doctrine of the United States Air Force*. Washington, D.C.: G.P.O., 1979.
- Department of the Air Force, Tactical Air Command. *Tactical Air Command Manual 2-1: Tactical Air Operations*. Langley Air Force Base, Va.: Tactical Air Command, 1978.
- . *Tactical Air Command Manual 2-1: Tactical Air Operations (Draft)*. Langley Air Force Base, Va.: Tactical Air Command, 1992.
- Department of the Army. *Army Doctrine Publication 3-0, Unified Land Operations*. Washington, D.C.: G.P.O., 2011.
- . *Field Manual 100-1, The Army*. Washington, D.C.: G.P.O., 1978.
- . *Field Manual 100-15 (Test), Larger Unit Operations*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1974.
- . *Field Manual 100-15, Corps Operations (Final Draft)*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1988.
- . *Field Manual 100-15, Larger Units: Theater Army-Corps*. Washington, D.C.: G.P.O., 1968.
- . *Field Manual 100-5 (Test), Operations*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1974.

- . *Field Manual 100-5, Field Service Regulations: Operations*. Washington, D.C.: G.P.O., 1941.
 - . *Field Manual 100-5, Field Service Regulations: Operations*. Washington, D.C.: G.P.O., 1944.
 - . *Field Manual 100-5, Field Service Regulations: Operations*. Washington, D.C.: G.P.O., 1949.
 - . *Field Manual 100-5, Field Service Regulations: Operations*. Washington, D.C.: G.P.O., 1954.
 - . *Field Manual 100-5, Operations (Coordinating Draft)*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1981.
 - . *Field Manual 100-5, Operations (Final Draft)*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1981.
 - . *Field Manual 100-5, Operations (Final Draft)*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1982.
 - . *Field Manual 100-5, Operations*. Washington, D.C.: G.P.O., 1982.
 - . *Field Manual 100-5, Operations*. Washington, D.C.: G.P.O., 1986.
 - . *Field Manual 100-5, Operations*. Washington, D.C.: G.P.O., 1993.
 - . *Field Manual 100-5, Operations of Army Forces in the Field*. Washington, D.C.: G.P.O., 1968.
 - . *Field Manual 100-5, Tentative Field Service Regulations: Operations*. Washington, D.C.: G.P.O., 1939.
 - . *Field Manual 3-0, Operations, with Change 1*. Washington, D.C.: G.P.O., 2008.
 - . *Field Manual 3-90, Tactics*. Washington, D.C.: G.P.O., 2001.
 - . *Field Manual 6-22: Army Leadership: Competent, Confident, and Agile*. Washington, D.C.: G.P.O., 2006.
 - . *Soviet Army Operations*. IAG-13-U-78. Arlington, Va.: U.S. Army Intelligence and Threat Analysis Center, 1978.
- Department of the Army, and Department of the Air Force. *Field Manual 100-20/Air Force Pamphlet 3-20, Military Operations in Low Intensity Conflict*. Washington, D.C.: G.P.O., 1990.
- Deputy Chief of Staff for Plans and Operations. *JFACC Primer*. Washington, D.C.: Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, 1992.
- . *JFACC Primer*. Washington, D.C.: Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, 1994.
 - . “The Air Force Role as the Joint Force Air Component Commander: A White Paper,” May 1991. IRIS 0872573. Air Force Historical Research Activity, TF IV JFACC files 1 NOV 89 - 28 MAR 91.
- Headquarters, U. S. Marine Corps. *Fleet Marine Force Manual 1, Warfighting*. Washington, D.C.: G.P.O., 1989.
- . *Fleet Marine Force Manual 1-1, Campaigning*. Washington, D.C.: G.P.O., 1990.
 - . *Marine Corps Doctrinal Publication 1: Warfighting*. Washington, D.C.: G.P.O., 1997.
 - . *Marine Corps Doctrinal Publication 1-0: Marine Corps Operations*. Washington, D.C.: G.P.O., 2001.
 - . *Marine Corps Warfighting Publication 0-1.1: Compenency*. Washington, D.C.: G.P.O., 1998.

- . *Operational Maneuver from the Sea: A Concept for the Projection of Naval Power Ashore*. Washington, D.C.: Headquarters, U.S. Marine Corps., 1996.
- Joint Chiefs of Staff. *JCS Publication 0-1 (Initial Draft): Basic National Defense Doctrine*. Washington, D.C.: Joint Staff J-7 Doctrine Division, November 17, 1989. Military Publications. U.S. Army Military History Institute.
- . *JCS Publication 0-1 (Proposed Final Draft): Basic National Defense Doctrine*. Washington, D.C.: Joint Staff J-7 Doctrine Division, May 7, 1991. Military Publications. U.S. Army Military History Institute.
- . *JCS Publication 0-2: Unified Action Armed Forces (UNAAF) with Change 1*. Washington, D.C.: G.P.O., 1986.
- . *JCS Publication 3-0 (Draft): Doctrine for Joint Operations*. Washington, D.C.: Joint Staff J-7 Doctrine Division, n.d. Military Publications. U.S. Army Military History Institute.
- . *JCS Publication 3-01.2: Joint Doctrine for Theater Counterair Operations*. Washington, D.C.: G.P.O., 1986.
- . *JCS Publication 5-0 (Final Draft): Doctrine for Planning Joint Operations*. Washington, D.C.: Joint Staff J-7 Doctrine Division, 1990. Military Publications. U.S. Army Military History Institute.
- . *Joint Publication 0-2, Unified Action Armed Forces (UNAAF)*. Washington, D.C.: G.P.O., 1995.
- . *Joint Publication 1, Joint Warfare of the Armed Forces of the United States*. Washington, D.C.: G.P.O., 1991.
- . *Joint Publication 1, Joint Warfare of the Armed Forces of the United States*. Washington, D.C.: G.P.O., 2007.
- . *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms (revised as of 11 May 2011)*. Washington, D.C.: G.P.O., 2010.
- . *Joint Publication 3-0, Joint Operations*. Washington, D.C.: G.P.O., 2011.
- . *Joint Publication 3-0: Doctrine for Joint Operations*. Washington, D.C.: G.P.O., 1993.
- . *Joint Publication 3-0: Doctrine for Joint Operations*. Washington, D.C.: G.P.O., 1995.
- . *Joint Publication 3-31: Command and Control for Joint Land Operations*. Washington, D.C.: G.P.O., 2010.
- . *Joint Publication 3-56.1: Command and Control for Joint Air Operations*. Washington, D.C.: G.P.O., 1994.
- . *Joint Publication 4-0: Doctrine for Logistic Support of Joint Operations*. Washington, D.C.: G.P.O., 1995.
- . *Joint Publication 4-08: Joint Doctrine for Logistic Support of Multinational Operations*. Washington, D.C.: G.P.O., 2002.
- . *Joint Publication 5-0: Doctrine for Planning Joint Operations*. Washington, D.C.: G.P.O., 1995.
- . *Joint Vision 2010: America's Military: Preparing for Tomorrow*. Washington, D.C.: G.P.O., 1996.
- Joint Publications Research Service, trans. *Draft Field Regulations of the Red Army, 1944 (PU-44)*. Moscow: Voenizdat, 1944. <http://handle.dtic.mil/100.2/ADA354524> (accessed September 11, 2011).
- . *Field Regulations of the Red Army, 1929 (PU-29)*. Moscow: Voenizdat, 1929. <http://handle.dtic.mil/100.2/ADA354513> (accessed September 11, 2011).

- . *Provisional Field Regulations of the Red Army, 1936 (PU-36)*. Moscow: Voenizdat, 1936. <http://handle.dtic.mil/100.2/ADA361873> (accessed September 11, 2011).
- Jones, Lt Col Johnny R. “Concept Paper on Air and Space Doctrine Education.” Maxwell Air Force Base, Ala.: Air Force Research Institute, College of Aerospace Doctrine, Research, and Education, Air University, 1996.
- Marine Staff Training Program. *Fleet Marine Force Manual 2 (Coordinating Draft): MEF Doctrine*, 1992.
- Military Committee. “Final Decision on MC 14/3: A Report by the Military Committee to the Defence Planning Committee on Overall Strategic Concept for the Defense of the North Atlantic Treaty Organization Area.” North Atlantic Treaty Organization, January 16, 1968.
- North Atlantic Treaty Organization. *Allied Joint Publication-01(D), Allied Joint Doctrine*. Brussels: North Atlantic Treaty Organization, 2010.
- O’Keefe, Sean, ADM Frank B. Kelso II, and Gen C. E. Mundy Jr. ...*From the Sea: Preparing the Naval Service for the 21st Century*. Washington, D.C.: Department of the Navy, 1992.
- Office of the Chief of Naval Operations, and Headquarters, U. S. Marine Corps. *Naval Doctrine Publication 1: Naval Warfare*. Washington, D.C.: G.P.O., 1994.
- Office of the Secretary of the Air Force. “Air Force White Paper: Air Force Restructure: Impetus for Change.” In *History of Tactical Air Command, 1 January - 31 December 1991*, A-6, 1991.
- Powell, Colin A. *A Doctrinal Statement of Selected Joint Operational Concepts*. Washington, D.C.: Joint Chiefs of Staff, 1992. Research Publications. Joint Electronic Library. <http://www.dtic.mil/doctrine/doctrine/research/p146.pdf> (accessed June 13, 2012).
- Simpkin, Richard E., trans. “Soviet Field Service Regulations 1936.” In *Deep Battle: The Brainchild of Marshal Tukhachevskii*, 177–248. London; Washington: Brassey’s Defence, 1987.
- van Tol, Jan M., Mark Alan Gunzinger, Andrew F. Krepinevich, and Jim Thomas. *AirSea Battle: A Point-of-Departure Operational Concept*. Washington, D.C.: Center for Strategic and Budgetary Assessments, 2010.
- U.S. Army Training and Doctrine Command. *AirLand Battle 2000 (1982 version with functional areas)*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1982.
- . *Commander’s Appreciation and Campaign Design*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 2008.
- . *The Army Capstone Concept: Operational Adaptability: Operating Under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict: 2016-2028*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 2009.
- . *TRADOC Pamphlet 525-5: Operational Concepts for the AirLand Battle and Corps 86*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1981.
- U.S. Army Training and Doctrine Command, and U.S. Air Force Tactical Air Command. *TRADOC Pamphlet 525-5: AirLand Operations: A Concept for the Evolution of AirLand Battle for the Strategic Army of the 1990s and Beyond*. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1991.

Interviews and Oral Histories

- de la Billière, Sir Peter. "Oral History: Sir Peter de la Billière." *FRONTLINE: The Gulf War*, 1996. <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/billiere/1.html> (accessed April 30, 2012).
- Birrer, Ivan J. "Interview with Dr. Ivan J. Birrer: Service at the Command and General Staff College, Fort Leavenworth, Kansas, 20 January 1948 to 30 June 1978." Interview by MAJ Robert A. Doughty, April 21, 1978. Defense Technical Information Center, accession number ADB064185.
- Boomer, Walter E. "Oral History: Walt Boomer." *FRONTLINE: The Gulf War*, 1996. <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/boomer/1.html> (accessed April 30, 2012).
- Cherrie, COL Stan. "Interview with Colonel Stan Cherrie, G3, VII Corps, 29 August 1991." Interview by COL Richard M. Swain, August 29, 1991. Box 2, SSG INT-013, Group Swain Papers, Gulf War Collection. U.S. Army Military History Institute.
- Creech, Gen Wilbur L. "U.S. Air Force Oral History Interview." Interview by Hugh N. Ahmann, June 1992. IRIS 1114823. Air Force Historical Research Activity.
- Crouch, Thomas W., ed. *Air Force Doctrine Center Oral History Interviews Covering the Period July 1993-February 1997*. Maxwell Air Force Base, Ala.: Air Force Doctrine Center, 1997.
- . *Oral History on Establishment, Operation, and Re-Organization of the Air Force Doctrine Center*. Langley Air Force Base, Va.: Air Force Doctrine Center, 1997.
- DePuy, GEN William A. Interview by Michael Pearlman, September 23, 1986. Box 2. U.S. Army Military History Institute, William E. DePuy Papers.
- . Interview by Michael Pearlman, January 15, 1987. Box 2. U.S. Army Military History Institute, William E. DePuy Papers.
- . Interview by Michael Pearlman, May 16, 1987. Box 2. U.S. Army Military History Institute, William E. DePuy Papers.
- DePuy, William E., Romie L. Brownlee, and William J. Mullen. *Changing an Army: An Oral History of General William E. DePuy, USA Retired*. Carlisle Barracks, Pa.; Washington, D.C.: U.S. Military History Institute ; U.S. Army Center of Military History, 1988.
- Dietvorst, Michael "Dutch." Interview by author, March 9, 2012. Notes in author's possession.
- Dixon, Gen Robert J. "U.S. Air Force Oral History Interview." Interview by Mark C. Cleary, July 18, 1984. IRIS 1105139. Air Force Historical Research Activity.
- Drew, Dennis M. Interview by author, March 6, 2012. Notes and recording in author's possession.
- Franks, GEN Frederick M. Jr. "Oral History Interview." Interview by John L. Romjue, November 17, 1994. FM 100-5 files. Combined Arms Research Library.
- Glosson, Maj Gen Buster C. "DESERT STORY Oral History Interview." Interview by Lt Col Suzanne Gehri, Lt Col Edward Mann, and Lt Col Richard Reynolds, May 29, 1991. IRIS 0876272. Air Force Historical Research Activity.
- Gudmundsson, Bruce I. Interview by author, March 15, 2011. Notes in author's possession.
- Herrly, COL (Ret) Peter F. Interview by author, June 4, 2012. Notes and recording in author's possession.
- Herrly, COL Peter F. "Gulf War Air Power Survey Oral interview re: Joint air campaign." Interview by Mark Mandeles, February 20, 1992. IRIS 0872544. Air Force Historical Research Activity.

- Hines, John C., Ellis M. Mishulovich, and John F. Shull. *Soviet Intentions, 1965-1985: Volume I: An Analytical Comparison of U.S.-Soviet Assessments During the Cold War*. McLean, Va.: BDM Federal, 1995.
- . *Soviet Intentions, 1965-1985: Volume II: Soviet Post-Cold War Testimonial Evidence*. McLean, Va.: BDM Federal, 1995.
- Holder, LTG (Ret) Leonard D. Interview by Kevin C. M. Benson, December 5, 2008. Transcript in author's possession.
- . Interview by author, December 23, 2011. Transcript in author's possession.
- Horner, Lt Gen Charles M. "DESERT STORY Oral History Interview." Interview by Lt Col Suzanne Gehri and Lt Col Richard Reynolds, December 2, 1991. IRIS 0876282. Air Force Historical Research Activity.
- Hunerwadel, J.P., and Woody W. Parramore. Interview by author, March 9, 2012. Notes in author's possession.
- Institute of Land Warfare (Association of the United States Army). *Personal Perspectives on the Gulf War*. Arlington, Va.: Institute of Land Warfare, Association of the United States Army, 1993.
- Kipp, Jacob W. Interview by author, October 3, 2011. Notes in author's possession.
- Lauer, George S. Interview by author, February 2, 2012. Recording in author's possession.
- Meyer, Bradley J. Interview by author, May 15, 2012. Notes and recording in author's possession.
- Olds, Col Robin. "CORONA HARVEST Oral History Interview #51," 1968. IRIS 903798. Air Force Historical Research Activity.
- Russ, Gen Robert D. "DESERT STORY Oral History Interview." Interview by Lt Col Suzanne Gehri, Lt Col Richard Reynolds, and Lt Col Edward Mann, December 9, 1991. IRIS 0876307. Air Force Historical Research Activity.
- Schmitt, John F. Interview by author, April 26, 2011. Notes in author's possession.
- Schwarzkopf, GEN H. Norman. "Senior Officer Oral History Program: General H. Norman Schwarzkopf." Interview by COL Douglas V. Johnson and COL Phillip W. Mock, 1997. U.S. Army Military History Institute, Senior Officer Oral History Program.
- Shalikashvili, GEN John M. "Senior Officer Oral History Program: An oral history of General John M. Shalikashvili." Interview by COL Frank J. Siltman, 2006. U.S. Army Military History Institute, Senior Officer Oral History Program.
- Shoffner, LTG (Ret) Wilson A. Interview by author, December 15, 2011. Notes in author's possession.
- Sinnreich, COL (Ret) Richard H. "Senior Officer Oral History Program: Colonel (Ret) Richard Sinnreich." Interview by Steven G. Fox, 2001. U.S. Army Military History Institute, Senior Officer Oral History Program.
- Sinnreich, COL(Ret) Richard Hart. Interview by Kevin C. M. Benson, January 14, 2009. Transcript in author's possession.
- . Interview by author, January 9, 2012. Transcript in author's possession.
- Smith, Maj Gen (Ret) Perry M. "DESERT STORY Oral Interview with Major General Perry M. Smith." Interview by Suzanne Gehri and Richard Reynolds, June 18, 1992. IRIS 00876314. Air Force Historical Research Activity.
- Spiller, Roger J. Interview by author, November 28, 2011. Recording in author's possession.

- Sullivan, GEN Gordon R. "Senior Officer Oral History Program: General Gordon R. Sullivan." Interview by COL David Ellis, 2002. U.S. Army Military History Institute, Senior Officer Oral History Program.
- Van Riper, LtGen (Ret) Paul K. Interview by author, March 28, 2011. Notes in author's possession.
- . Interview by author, May 12, 2012. Notes and recording in author's possession.
- Waller, Calvin A. H. "Oral History: Cal Waller." *FRONTLINE: The Gulf War*, 1996. <http://www.pbs.org/wgbh/pages/frontline/gulf/oral/waller/1.html> (accessed April 30, 2012).
- Warden, Col (Ret) John A. Interview by author, March 6, 2012. Notes and recording in author's possession.
- Warden, Col John A. "DESERT STORY Oral History Interview." Interview by Lt Col Suzanne Gehri, Lt Col Edward Mann, and Lt Col Richard Reynolds, May 30, 1991. IRIS 0876324. Air Force Historical Research Activity.
- . "DESERT STORY Oral History Interview." Interview by Lt Col Suzanne Gehri, October 22, 1991. IRIS 0876307. Air Force Historical Research Activity.
- Wass de Czege, BG (Ret) Huba. Interview by Kevin C. M. Benson, January 15, 2009. Transcript in author's possession.
- Williamson, Wayne R., and Woody W. Parramore. Interview by author, March 8, 2012. Notes in author's possession.
- Winton, Harold R. Interview by author, March 2, 2012. Recording and notes in author's possession.
- . Interview by author, March 7, 2012. Recording and notes in author's possession.
- Wyly, Col (Ret) Michael D. Interview by author, March 20, 2011. Notes in author's possession.
- Yeosock, LTG(Ret) John J. "'Yesterday's Preparation Builds Tomorrow's Victories': An Oral History of Lieutenant General John J. Yeosock." Interview by LTC John F. Antal, 1998. U.S. Army Military History Institute, Senior Officer Oral History Program.
- Zierdt, COL(P) John G. Jr. "XVIII Airborne Corps and U.S. Army Center of Military History Oral History Interview." Interview by MAJ Robert B. Honec, June 10, 1991. DSIT AE 108. Operations Desert Shield and Desert Storm. <http://www.history.army.mil/documents/SWA/DSIT/DSIT108.htm> (accessed May 4, 2012).

Journal Articles used as Primary Sources

- Amos, Col James F. "The MEF is our mission...The MAGTF staff training program (MSTP)." *Marine Corps Gazette* 78, no. 2 (February 1994): 26–27.
- Anderson, Maj Gary W. "Maneuver, Attrition, or the Tactics of Mistake?" *Marine Corps Gazette* 69, no. 9 (September 1985): 73–77.
- Bingham, Lt Col Price T. "Air Interdiction: Some Doubts Concerning Colonel Krieger's Proposal." *Airpower Journal* 3, no. 3 (Fall 1989): 86–89.
- . *Air Power and the Defeat of a Warsaw Pact Offensive: Taking A Different Approach to Air Interdiction in NATO*. Maxwell Air Force Base, Ala.: Air University Press, 1987.
- . *Ground Maneuver and Air Interdiction in the Operational Art*. Maxwell Air Force Base, Ala.: Air University Press, 1989.
- . "Operational Art and Aircraft Runway Requirements." *Airpower Journal* 2, no. 3 (Fall 1988): 52–69.

- Brannan, Maj Timothy J. "TAC's New Flag." *USAF Fighter Weapons Review* 33, no. 2 (Summer 1985): 21–28.
- Brown, Col Bruce G. "Maneuver Warfare Roadmap: Part I, Trends and Implications." *Marine Corps Gazette* 66, no. 4 (April 1982): 42–47.
- . "Maneuver Warfare Roadmap: Part II, Concepts of Employment & Tactical Applications." *Marine Corps Gazette* 66, no. 5 (May 1982): 80–85.
- Casey, Francis M. "Suggestions For A Reading List." *Marine Corps Gazette* 62, no. 6 (June 1978): 20–23.
- Cate, LTC Paul E. "Large-Unit Operational Doctrine." *Military Review* LVIII, no. 12 (December 1978): 40–47.
- Chuykov, V. "The New Field Service Regulations of the Armed Forces of the USSR." Translated by Central Intelligence Agency. *Voennaia Mysl'* 71, no. 1 (1964). <http://www.foia.cia.gov/SovietandWarsawPact/1978/1978-12-14.pdf> (accessed September 12, 2011).
- Chaudrue, LTC Robert G. "Requiem for the Infantry." *Infantry* 68, no. 3 (June 1978): 28–31.
- Clover, Capt Kevin R. "Maneuver Warfare: Where Are We Now?" *Marine Corps Gazette* 72, no. 2 (February 1988): 54–59.
- Coroalles, CPT Anthony M. "Maneuver to Win: A Realistic Alternative." *Military Review* LXI, no. 9 (September 1981): 35–46.
- Dinges, BG Edward A., and MAJ Richard H. Sinnreich. "Battlefield Interdiction: Old Term, New Problem." *Field Artillery Journal* 48, no. 1 (February 1980): 14–20.
- Di Rita, LCDR Lawrence. "Exocets, Air Traffic, and the Air Tasking Order." *U.S. Naval Institute Proceedings* 118, no. 8 (August 1992): 59–63.
- Dixon, Gen Robert J. "TAC-TRADOC Dialogue." *Strategic Review* VI, no. 1 (Winter 1978): 45–54.
- Doerfel, LTC John S. "The Operational Art of the AirLand Battle." *Military Review* LXII, no. 5 (May 1982): 3–10.
- Donnelly, Christopher N. "The Soviet Operational Maneuver Group: A New Challenge for NATO." *Military Review* LXIII, no. 3 (March 1983): 43–60.
- Donnelly, Gen Charles L. "A Theater-Level View of Air Power." *Airpower Journal* 1, no. 1 (Summer 1987): 3–8.
- Downing, Wayne A. "U.S. Army Operations Doctrine: A Challenge for the 1980s and Beyond." *Military Review* LXI, no. 1 (January 1981): 64–73.
- Drew, Dennis M. "Inventing A Doctrine Process." *Airpower Journal* 9, no. 4 (Winter 1995): 42–52.
- . "Of Trees and Leaves: A New View of Doctrine." *Air University Review* 33, no. 1 (January 1982): 40–48.
- . "The Essence of Aerospace Power: What Leaders Need to Know." *Aerospace Power Journal* 15, no. 2 (Summer 2001): 23–31.
- . "Two Decades in the Air Power Wilderness: Do We Know Where We Are?" *Air University Review* 37, no. 6 (October 1986): 2–13.
- Ehrhart, Maj Robert C. "Some Thoughts on Air Force Doctrine." *Air University Review* 29, no. 2 (April 1980): 29–38.
- Fabyanic, Col Thomas A. "War, Doctrine, and the Air War College: Some Relationships and Implications for the U.S. Air Force." *Air University Review* 37, no. 1 (February 1986): 2–29.

- Fontenot, CPT Gregory, and CPT Matthew D. Roberts. "Plugging Holes and Mending Fences." *Infantry* 68, no. 3 (June 1978): 32–36.
- Franks, GEN Frederick M., and COL Gary B. Griffin. "The Army's View of Joint." *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 54–60.
- Franz, COL Wallace P. "Grand Tactics." *Military Review* LXI, no. 12 (December 1981): 32–39.
- Gray, Colin S. "Force Planning, Political Guidance and the Decision to Fight." *Military Review* LVIII, no. 4 (April 1978): 5–16.
- Gresham, Maj William F. P. "OMFSTS and the Single Battle Concept." *Marine Corps Gazette* 80, no. 6 (June 1996): 39–40.
- Gudmundsson, Capt Bruce I. "New Tanks for Old: How Marines Should Think About Armored Vehicles." *Marine Corps Gazette* 72, no. 12 (December 1988): 51–55.
- Gunzelman, MAJ Karl J. "The M1A1-Too Much of a Good Thing?" *Marine Corps Gazette* 73, no. 6 (June 1989): 32–33.
- Hammes, Col Thomas X. "DESERT SHIELD/DESERT STORM--Ten Years Later." *Marine Corps Gazette* 85, no. 5 (May 2001): 73–79.
- Hennessey, MG John J. "A Look Ahead." *Military Review* LII, no. 2 (February 1972): 1.
- Heredia, LTC Michael D. "Campaign Planning for PRAIRIE WARRIOR 96." *Military Review* LXXVI, no. 4 (August 1996): 23–29.
- Herrly, COL (Ret) Peter F. "The Plight of Joint Doctrine after Kosovo." *Joint Forces Quarterly*, no. 22 (Summer 1999): 99–104.
- Hoffman, F. G. "The Marine 'Mask of War'." *Marine Corps Gazette* 96, no. 1 (January 2012): 64–67.
- Holder, COL Leonard D. "Educating and Training for Theater Warfare." *Military Review* LXX, no. 9 (September 1990): 85–99.
- Holder, LTC Leonard D. "A New Day for Operational Art." *Army* 35, no. 3 (March 1985): 22–32.
- . "Maneuver in the Deep Battle." *Military Review* LXII, no. 5 (May 1982): 54–61.
- Holder, LTG Leonard D., and COL Rolland A. Dessert Jr. "PRAIRIE WARRIOR: A Joint and Combined Exercise." *Military Review* LXXVI, no. 4 (August 1996): 5–10.
- Holland, William J. "Jointness Has Its Limits." *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 38–42.
- Holley, I. B. "Of Saber Charges, Escort Fighters, and Spacecraft." *Air University Review* 34, no. 5 (October 1983): 2–11.
- Hosmer, Lt Gen Bradley C. "American Air Power and Grand Tactics." *Airpower Journal* 1, no. 1 (Summer 1987): 9–14.
- Jaroch, Col Roger M. "MAGTFs and the Operational Level of War." *Marine Corps Gazette* 73, no. 7 (July 1989): 6.
- Jones, Archer. "The New FM 100-5: A View From the Ivory Tower." *Military Review* LVIII, no. 2 (February 1978): 27–39.
- Karber, Philip A. "Dynamic Doctrine for Dynamic Defense." *Armed Forces Journal International* 114, no. 2 (October 1976): 28–29.
- Kelso, ADM Frank B. II, and Gen Carl E. Mundy Jr. "Naval Service is Joint." *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 44–46.
- Krulak, Bgen Charles C. "A War of Logistics." *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 55–57.

- Larionov, V. "The Struggle for the Strategic Initiative in Modern Warfare." Translated by Central Intelligence Agency. *Voennaia Mysl* 64, no. 3 (1962).
<http://www.foia.cia.gov/SovietandWarsawPact/1963/1963-01-25a.pdf> (accessed September 12, 2011).
- Lind, William S. "A Critique of ECP 9-5, 1981 Edition." *Marine Corps Gazette* 65, no. 12 (December 1981): 44–46.
- . "A Proposal for the Corps: Mission and Force Structure." *Marine Corps Gazette* 59, no. 12 (December 1975): 12–16.
- . "Defining Maneuver Warfare for the Marine Corps." *Marine Corps Gazette* 64, no. 3 (March 1980): 55–58.
- . "Light Infantry Tactics." *Marine Corps Gazette* 74, no. 6 (June 1990): 42–47.
- . "Marines Don't Write About Warfare." *Marine Corps Gazette* 62, no. 2 (February 1978): 14–15.
- . "Mechanization Is Needed." *Marine Corps Gazette* 60, no. 8 (August 1976): 13.
- . "Misconceptions of Maneuver Warfare." *Marine Corps Gazette* 72, no. 1 (1988): 16.
- . "Preparing for Maneuver Warfare." *Marine Corps Gazette* 68, no. 6 (June 1984): 47–55.
- . "Some Doctrinal Questions for the United States Army." *Military Review* LVII, no. 3 (March 1977): 54–65.
- . "Tactics in Maneuver Warfare." *Marine Corps Gazette* 65, no. 9 (September 1981): 36–39.
- . "The Next Agenda: Military Reform, Part I." *Marine Corps Gazette* 72, no. 6 (June 1988): 48–53.
- . "The Next Agenda: Military Reform, Part II." *Marine Corps Gazette* 72, no. 7 (1988): 50–54.
- Loomis, Bgen Dan G. "FM 100-5 Operations: A Review." *Military Review* LVII, no. 3 (March 1977): 66–69.
- Luttwak, Edward N. "Refocusing the Military Profession." *Marine Corps Gazette* 65, no. 6 (June 1981): 60–65.
- . "The Operational Level of War." *International Security* 5, no. 3 (1980): 61–79.
- McPeak, Lt Gen Merrill A. "TACAIR Missions and The Fire Support Coordination Line." *Air University Review* 36, no. 6 (October 1985): 65–72.
- Miller, Capt Stephen W. "It's Time to Mechanize Amphibious Forces." *Marine Corps Gazette* 62, no. 6 (June 1978): 39–42.
- . "Winning Through Maneuver: Conclusion - Countering the Defense." *Marine Corps Gazette* 63, no. 12 (December 1979): 57–63.
- . "Winning Through Maneuver: Part I - Countering the Offense." *Marine Corps Gazette* 63, no. 10 (1979): 28–36.
- Moellering, LTC John H. "Future Civil Military Relations: The Army Turns Inward?" *Military Review* LIII, no. 7 (July 1973): 68–83.
- Moore, MajGen Royal N. "Marine Air: There When Needed." *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 63–70.
- Myatt, MajGen J. M. "The 1st Marine Division in the Attack." *U.S. Naval Institute Proceedings* 117, no. 11 (November 1991): 71–76.
- Otis, GEN Glenn K. "A Message from the Commander of Training and Doctrine Command." *Military Review* LXII, no. 5 (May 1982): 2.

- Owens, ADM William A. "The Emerging System of Systems." *Military Review* LXXV, no. 3 (May 1995): 15–19.
- Possehl, Col Wayne A. "To Fly and Fight at the Operational Level." *Airpower Journal* 2, no. 4 (Winter 1988): 20–28.
- Reavis, Capt Thomas A. "Improving Our Air Defenses: The Mi-14 Hind Threat." *Marine Corps Gazette* 65, no. 5 (May 1981): 64–65.
- Richardson, LTG William R. "Winning on the Extended Battlefield." *Army* 31, no. 6 (June 1981): 35–42.
- Rogers, GEN Bernard W. "Follow-On Forces Attack (FOFA): Myths and Realities." *Parameters* XV, no. 2 (Summer 1985): 75–79.
- . "The Atlantic Alliance: Prescriptions for a Difficult Decade." *Foreign Affairs* 60, no. 5 (Summer 1982): 1145–1156.
- Sarkesian, Sam C. "An Empirical Reassessment of Military Professionalism." *Military Review* LVII, no. 8 (August 1977): 3–20.
- Silvasy, MG Stephen. "AirLand Battle Future: The Tactical Battlefield." *Military Review* LXXI, no. 2 (February 1991): 2–12.
- Starry, GEN Donn A. "A Tactical Evolution - FM 100-5." *Military Review* LVIII, no. 8 (August 1978): 2–11.
- . "Extending the Battlefield." *Military Review* LXI, no. 3 (August 1978): 31–50.
- . "To Change An Army." *Military Review* LXIII, no. 3 (March 1983): 20–27.
- Stavridis, CAPT James G. "Beyond Joint: The Interagency Action." *Proceedings of the U.S. Naval Institute* 119, no. 5 (May 1993): 35–39.
- Steger, LTC George F. "More Dilemmas in Studying Soviet Tactics." *Military Review* LVIII, no. 2 (February 1978): 88–91.
- Story, Lt Col Ann E., and Maj Aryea Gottlieb. "Beyond the Range of Military Operations." *Joint Forces Quarterly*, no. 9 (Autumn 1995): 99–104.
- Sutton, Boyd D. "Deep Attack Concepts and the Defence of Central Europe." *Survival* 26, no. 2 (April 1984): 50–70.
- Swain, MAJ Richard M. "On Bringing Back the Principles of War." *Military Review* LX, no. 11 (November 1980): 40–46.
- Tate, COL Clyde J., and LTC Leonard D. Holder. "New Doctrine for the Defense." *Military Review* LXI, no. 3 (March 1981): 2–9.
- Turley, LtCol Gerald H. "Time of Change in Modern Warfare." *Marine Corps Gazette* 58, no. 12 (December 1974).
- Voigt, LtCol R. H. "Comments on Maneuver Warfare." *Marine Corps Gazette* 66, no. 3 (March 1982): 20.
- Warner, BG Volney J., and James H. Willbanks. "Preparing Field Grade Leaders for Today and Tomorrow." *Military Review* LXXXVI, no. 1 (February 2006): 104–111.
- Wass de Czege, COL Huba. "Challenge for the Future: Educating Field Grade Battle Leaders and Staff Officers." *Military Review* LXIV, no. 6 (June 1984): 2–13.
- . "How to Change an Army." *Military Review* LXIV, no. 11 (November 1984): 32–49.
- Wass de Czege, LTC Huba, and MAJ Leonard D. Holder. "The New FM 100-5." *Military Review* LXII, no. 7 (July 1982): 53–70.
- Watson, Maj Kenneth C. "Words and War: Confusion or MAGTF Doctrine?" *Marine Corps Gazette* 76, no. 10 (October 1992): 52–53.

- Welch, Gen Larry D. "A Message from the Chief of Staff." *Airpower Journal* 1, no. 1 (Summer 1987): 2.
- Welch, LTC William G. "Notes from the BCE-Observations on Joint Combat Operations at Echelons Above Corps." *Field Artillery* (June 1992): 16–21.
- Westenhoff, Lt Col Charles M. "Aggressive Vision." *Airpower Journal* 3, no. 3 (Fall 1989): 34–49.
- Wilson, Capt Gary I. "Maneuver/Fluid Warfare: A review of the Concepts." *Marine Corps Gazette* 66, no. 1 (January 1982): 54–61.
- Wilson, Capt Gary I., LtCol Michael D. Wyly, William S. Lind, and Maj Gen Bernard E. Trainor. "Maneuver Warfare Concept." *Marine Corps Gazette* 65, no. 4 (April 1981): 49–54.
- Wyly, LtCol Michael D. "War Without Firepower?" *Marine Corps Gazette* 67, no. 3 (March 1983): 17–18.
- Wyly, Col Michael D. "Educating for War." *Marine Corps Gazette* 72, no. 4 (April 1988): 28–31.
- . "Ideas for Changing Doctrine." *Marine Corps Gazette* 72, no. 8 (August 1988): 41–43.
- . "Operational Handbook 6-1, Ground Combat Operations." *Marine Corps Gazette* 72, no. 7 (July 1988): 30–31.
- . "The Significance of Light Infantry." *Marine Corps Gazette* 75, no. 1 (January 1991): 53–55.
- . "Why All Americans Need To Think More About War." *Marine Corps Gazette* 72, no. 9 (1988): 26–27.
- . "Why Lieutenants Should Study Strategy." *Marine Corps Gazette* 72, no. 10 (October 1988): 42–43.
- Yeosock, LTG John J. "Army Operations in the Gulf Theater." *Military Review* LXXI, no. 9 (September 1991): 2–15.

Campaign Planning, Strategy, and Policy Statements

- Boomer, LtGen Walter E. "Persian Gulf Campaign: U.S. Marine Corps Operations COMUSMARCENT Command Brief," May 7, 1991. Wars: Persian Gulf Operations Desert Storm (10 of 19). U.S. Marine Corps History Division.
- Chairman of the Joint Chiefs of Staff. "Execute Order Operation DESERT STORM." Joint Staff, January 15, 1991. Persian Gulf War. OSD/JS FOIA Library. http://www.dod.mil/pubs/foi/operation_and_plans/PersianGulfWar/747.pdf (accessed April 11, 2012).
- . *National Military Strategy of the United States, 1992*. Washington, D.C.: G.P.O., 1992.
- Deputy Directorate for Warfighting Concepts. "Iraqi Air Campaign INSTANT THUNDER." Headquarters, Department of the Air Force, Deputy Chief of Staff for Plans and Operations, August 17, 1990. Operations and Plans, Persian Gulf War. Office of Secretary of Defense/Joint Staff FOIA Library. http://www.dod.mil/pubs/foi/operation_and_plans/PersianGulfWar/651.pdf (accessed April 20, 2012).
- Headquarters, U. S. Marine Corps. "Amphibious Warfare Strategy." Presentation slides. Washington, D.C., 1987. Box 54, Group 899. Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.
- Kissinger, Henry A. *National Security Study Memorandum 3*, 1969.

- Kissinger, Henry A. *National Security Study Memorandum 50*, 1969.
- President. *National Security Strategy of the United States, 1990-1991*. Washington, D.C.: G.P.O., 1990.
- . *National Security Strategy of the United States, 1991-1992*. Washington, D.C.: G.P.O., 1991.
- U.S. Central Command. “Offensive Campaign Briefing (DESERT STORM),” August 24, 1990. IRIS 0872752. Air Force Historical Research Activity.
- . “USCINCCENT OPLAN for Offensive Operations to Eject Iraqi Forces from Kuwait.” U.S. Central Command, December 16, 1990. IRIS 0874586. Air Force Historical Research Activity.
- U.S. Central Command, and Joint Forces and Theater of Operations. “Combined OPLAN for Defense and Restoration of Kuwait.” U.S. Central Command, January 13, 1991. IRIS 0269607. Air Force Historical Research Activity.
- . “Combined OPLAN for Defense of Kuwait and Saudi Arabia.” U.S. Central Command, February 22, 1991. IRIS 0870454. Air Force Historical Research Activity.
- . “Combined OPLAN for the Defense of Saudi Arabia.” Joint Directorate of Planning, November 29, 1990. IRIS 0269606. Air Force Historical Research Activity.

Published Primary Sources

- Clancy, Tom, and GEN Frederick M. Franks. *Into the Storm: A Study in Command*. New York: Putnam, 1997.
- Clancy, Tom, and Gen Chuck Horner. *Every Man A Tiger*. New York: Putnam, 1999.
- Cushman, John H. *Fort Leavenworth, A Memoir*. Annapolis, Md.: John H. Cushman, 2001.
- Isserson, G. S. *The Evolution of Operational Art*. Translated by Bruce W. Menning. 2nd expanded. Moscow: Voenizdat, 1937.
- Olds, Robin, Christina Olds, and Ed Rasimus. *Fighter Pilot: The Memoirs of Legendary Ace Robin Olds*. New York: St. Martin’s Press, 2010.
- Orenstein, Harold S., trans. *The Evolution of Soviet Operational Art, 1927-1991: The Documentary Basis*. 2 vols. London; Portland, Ore.: Taylor and Francis, 1995.
- Rice, Donald B. “Reshaping for the Future: The Strength and Durability of the U.S. Air Force, a speech delivered to the House Armed Services Committee, February 20, 1992.” *Vital Speeches of the Day*, April 1, 1992.
- Sokolovsky, Vasily Danilovich. *Soviet Military Strategy*. Edited by Scott, Harriet Fast. 3rd ed. London: Macdonald and Jane’s [for the Strategic Studies Center, Stanford Research Institute], 1975.
- Starry, GEN Donn A. *Press On!: Selected Works of General Donn A. Starry*. Edited by Lewis Sorley. 2 vols. Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, 2009.
- Sullivan, GEN Gordon R. *The Collected Works of the Thirty-Second Chief of Staff, United States Army: June 1991-June 1995*. Washington, D.C.: Department of the Army, 1996.
- Svechin, A. A. *Strategy*. Minneapolis, Minn.: East View Publications, 1992.
- Swain, COL Richard M., Carolyn D. Conway, and Donald L. Gilmore, eds. *Selected Papers of General William E. DePuy: First Commander, U.S. Army Training and Doctrine Command, 1 July 1973*. Fort Leavenworth, Kan.: Combat Studies Institute Press, US Army Combined Arms Center, 1994.

- Triandafilov, V. K. *The Nature of the Operations of Modern Armies*. Translated by William A. Burhans. Ilford, Essex, England; Portland, Ore.: Frank Cass, 1994.
- Tukhachevsky, Mikhail N. "The Battle of the Bugs." In *Deep Battle: the brainchild of Marshal Tukhachevskii*, edited by Richard E. Simpkin and John Erickson, 85–87. London; Washington: Brassey's Defence, 1987.
- . "War As A Problem of Armed Struggle." In *Deep Battle: The Brainchild of Marshal Tukhachevskii*, edited by Richard E. Simpkin and John Erickson, 102–124. London; Washington: Brassey's Defence, 1987.
- Wardak, Ghulam Dastagir. *The Voroshilov Lectures: Materials from the Soviet General Staff Academy*. Vol. 3. 3 vols. Washington, D.C.: National Defense University Press, 1989.
- Wickham, GEN John A. Jr. *Collected Works of the Thirtieth Chief of Staff, United States Army*. Washington, D.C.: Headquarters, Department of the Army, 1987.

Regulations, Instructions, and Directives

- Headquarters, U.S. Marine Corps. "ALMAR 128/89: Activation of the Marine Corps University," 131952ZJUL89. Supporting Documents, Folder 2, Box 450, Marine Corps Combat Development Command files. Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.
- Office of the Joint Staff J-8. "Chairman of the Joint Chiefs of Staff Instruction 3170.01G, Joint Capabilities Integration and Development System." U.S. Joint Chiefs of Staff, March 1, 2009.
- Office of the Undersecretary of Defense for Acquisition. "Department of Defense Directive 5158.4, U.S. Transportation Command," January 8, 1993.

Reports and Presentations

- BDM Corporation. *Generals Balck and von Mellenthin on Tactics: Implications for NATO Military Doctrine*. BDM/W-81-077-TR. McLean, Va.: BDM Corporation, 1981.
- Bell, W. R., J. V. Braddock, B. J. Dunn, W. P. Schneider, and M. F. Sullivan. *Holding Pact Second Echelon Forces at Risk*. Vol. 2. 5 vols. McLean, Va.: BDM Corporation, 1979.
- Boyd, Capt John R. *Aerial Attack Study*. Nellis AFB, Nev.: U.S. Air Force Tactical Air Command Fighter Weapons School, August 11, 1966.
- Boyd, John R. "Destruction and Creation." Unpublished paper, 1976.
- . "Fast Transients." Presentation slides, August 4, 1976. Defense and the National Interest Archive, John R. Boyd Compendium.
http://www.dnipogo.org/boyd/pdf/fast_transients.pdf (accessed November 21, 2009).
- . "Organic Design for Command and Control." Unpublished presentation, May 1987.
- . "Patterns of Conflict." Unpublished presentation, December 1986.
- . "The Essence of Winning and Losing." Presentation slides, 1996.
http://pogoarchives.org/m/dni/john_boyd_compendium/essence_of_winning_losing.pdf (accessed June 11, 2012).
- Center for Naval Analyses. *Sealift in the 1990s: Lessons Learned from DESERT SHIELD*, December 10, 1990. Marine Corps Lessons Learned System# 30551-06944. Southwest Asia (SWA) Folder 0014, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.

- Cohen, Eliot A. *Gulf War Air Power Survey*. 5 vols. Washington, D.C.: Office of the Secretary of the Air Force, 1993.
- Department of Defense. *Conduct of the Persian Gulf War: Final Report to Congress*. Washington: G.P.O., 1992.
- . “Section 5: Iraq’s Use of Scuds During Operation DESERT STORM.” *Information Paper: Iraq’s Scud Ballistic Missiles*, July 25, 2000.
http://www.gulflink.osd.mil/scud_info/scud_info_s04.htm#A.%20Introduction (accessed April 17, 2012).
- Deputy Chief of Staff for Personnel. “Report of the Department of the Army Board to Review Army Officer Schools. Volume 2. Description of Current Educational and Training Systems.” Headquarters, Department of the Army, 1966.
- Directorate of Intelligence. “The Soviet Operational Maneuver Group: An Intelligence Assessment.” Central Intelligence Agency, 1983. Soviet and Warsaw Pact Military Journals. FOIA Reading Room.
http://www.foia.cia.gov/docs/DOC_0000498534/DOC_0000498534.pdf (accessed September 26, 2011) (accessed September 26, 2011).
- 8th Air Support Operations Group. *8th Air Support Operations Group (ASOG) After Action Review Operation Desert Storm*, November 6, 1991. IRIS 0872573. Air Force Historical Research Activity, TF IV JFACC files 1 NOV 89 - 28 MAR 91.
- Gammons, Stephen L. Y., and William M. Donnelly. *Department of the Army Historical Summary, Fiscal Year 1995*. Washington, D.C.: U.S. Army Center of Military History, 2004.
- Graham, David, Jerome Bracken, Joseph Dalfonzo, William Fedorochko, and Robert Hilton. *Sustaining the Civil Reserve Air Fleet (CRAF) Program*. IDA Paper P-3819. Alexandria, Va.: Institute for Defense Analyses, May 2003.
- Grant, Rebecca. “Joint Doctrine: Dangers and Opportunities.” RAND, Project Air Force, August 1996. IRIS 01118927. Air Force Historical Research Activity.
- Greenberg, I. M. “Project 100,000: New Standards Program.” U.S. Department of Defense, n.d.
<http://www.rand.org/pubs/monographs/MG265/images/webG1318.pdf> (accessed November 5, 2011).
- Headquarters, U. S. Marine Corps, Deputy Chief of Staff for Requirements and Programs. “The Role of Fleet Marine Forces in Sea Control,” 1976. Box 48, Group 842. Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.
- Headquarters, U. S. Marine Corps, Office of the Deputy Commandant for Research, Development and Studies. *Mission and Force Structure Study, Vol. 1*, 1976. Box 50, Group 858. Historical Amphibious File, Archives and Special Collections Branch, General Alfred M. Gray, Jr. Research Center.
- House Armed Services Committee. *Report of the Panel on Military Education of the One Hundredth Congress*. 101st Cong., 1st Sess., April 21, 1989.
- Krepinevich, Andrew F. Jr. *The Military-Technical Revolution: A Preliminary Assessment*. Center for Strategic and Budgetary Assessments: Washington, D.C., 2002.
- Mendel, COL William W., and LTC Floyd T. Banks Jr. *Campaign Planning: Final Report*. Carlisle Barracks, Pa.: U.S. Army War College, Strategic Studies Institute, January 4, 1988.

- Millett, Allan R., and Williamson Murray. *Net Assessment in the 1930s*. Washington, D.C.: Defense Supply Service, 1990. <http://handle.dtic.mil/100.2/ADA230153> (accessed September 12, 2011).
- Office of the Chief of Staff, Army. *Louisiana Maneuvers: The First Year*. Washington, D.C.: Headquarters, Department of the Army, March 1, 1994.
- Office of the Secretary of Defense. *Annual Defense Department Report, FY 1976 and FY 1977, Report of Secretary of Defense James R. Schlesinger to the Congress on the FY 1976 and Transition Budgets, FY 1977 Authorization Request and FY 1976-1980 Defense Programs*, February 5, 1975.
- Palatas, Michael D., ed. *Conference on Professional Military Education for the 21st Century Warrior: 15-16 January 1998, Monterey, California*. Monterey, Calif.: Naval Postgraduate School, 1998.
- Soviet Army Studies Office. *The Soviet Conduct of War*. Fort Leavenworth, Kan.: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1987.
- Summers, COL Harry G Jr. *On Strategy: The Vietnam War in Context*. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 1981.
- . *The Astarita Report: A Military Strategy for the Multipolar World*. Carlisle Barracks, Pa.: US Army War College, 1981.
- U.S. Army War College. *Study on Military Professionalism*. Carlisle Barracks, Pa.: U.S. Army War College, 1970.
- U.S. Congress, Office of Technology Assessment. *New Technology for NATO: Implementing Follow-On Force Attack*. Special Report. Washington, D.C.: G.P.O., June 1987. http://www.princeton.edu/~ota/disk2/1987/8718_n.html (accessed December 13, 2011).
- U.S. General Accounting Office. *DESERT SHIELD/STORM: U.S. Transportation Command's Support of Operation: Report to the Chairman, Subcommittee on Readiness, Committee on Armed Services, House of Representatives*. Washington, D.C.: G.P.O., 1992.
- U.S. General Accounting Office, National Security and International Affairs Division. "Navy: Status of Recommendations on Officers' Professional Military Education." G.P.O., March 25, 1991. GAO/NSIAD-91-124BR.
- U.S. Marine Corps, Marine Air-Ground Task Force Staff Training Program. "MSTP Command Brief v.48." Presentation slides, January 1, 2011. Copy in author's possession.
- Wages, Col Brian E. "End of Tour Report as Air Force Liaison Officer to Commander, US Naval Forces, Central Command (COMUSNAVCENT/AFLO) for Operations DESERT SHIELD/DESERT STORM." 12th Air Force, March 5, 1991. IRIS 0876195. Air Force Historical Research Activity.
- Wass de Czege, LTC Huba. *Army Staff College Level Training Study*. Research Study. Carlisle Barracks, Pa.: U.S. Army War College, June 13, 1983. Defense Technical Information Center, accession number ADA144852.

Secondary Sources

Books and Book Chapters

- Anderegg, C. R. *Sierra Hotel: Flying Air Force Fighters in the Decade After Vietnam*. Washington, D.C.: Air Force History and Museums Program, 2001.

- Atkinson, Rick. *Crusade: The Untold Story of the Persian Gulf War*. Boston: Houghton Mifflin, 1993.
- Bacevich, LTC Andrew J. *The Pentomic Era: The U.S. Army Between Korea and Vietnam*. Washington, D.C.: National Defense University Press, 1986.
- Barnett, Roger W. *Navy Strategic Culture: Why the Navy Thinks Differently*. Annapolis, Md.: Naval Institute Press, 2009.
- Bartholomees, J. Boone Jr., ed. *The U.S. Army War College Guide to National Security Issues*. Vol. Volume 1, Theory of war and strategy. 2 vols. 4th ed. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010.
- Bell, William Gardner, and Karl E. Cocke, eds. *Department of the Army Historical Summary for Fiscal Year 1973*. Washington: Office of the Chief of Military History, Department of the Army, 1977.
- Ben-Horin, Yoav, and Benjamin Schwarz. *Army 21 as the U.S. Army's Future Warfighting Concept: A Critical Review of Approach and Assumptions*. Santa Monica, Calif.: Rand, 1988.
- Binkin, Martin, and Jeffrey Record. *Where Does the Marine Corps Go From Here?* Washington: Brookings Institution, 1976.
- Bittner, Donald F. *Curriculum Evolution: Marine Corps Command and Staff College, 1920-1988*. Washington, D.C.: Headquarters, U.S. Marine Corps, History and Museums Division, 1988.
- . "Marine Corps Command and Staff College." In *Professional Military Education in the United States: A Historical Dictionary*, edited by William E. Simons, 188–189. Westport, Conn.: Greenwood Press, 2000.
- Bloch, Jan S. *Jean de Bloch: selected articles*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1993.
- . *The Future of War, in its technical, economic, and political relations*. Translated by R. C. Long. 1899, repr: Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1989.
- Boldan, Edith M., ed. *Department of the Army Historical Summary: Fiscal Year 1979*. Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1983.
- Bolger, MAJ Daniel P. *Scenes from an Unfinished War: Low-Intensity Conflict in Korea, 1966-1969*. Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command & General Staff College, 1991.
- Bourque, Stephen A. *Jayhawk!: The VII Corps in the Persian Gulf War*. Washington, D.C.: U.S. Army Center of Military History, 2002.
- Brown, Ronald J. *With Marine Forces Afloat in Desert Shield and Desert Storm*. U.S. Marines in the Persian Gulf, 1990-1991. Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1998.
- Builder, Carl H. *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force*. New Brunswick, N.J.: Transaction Publishers, 1994.
- . *The Masks of War: American Military Styles in Strategy and Analysis*. Baltimore: Johns Hopkins University Press, 1989.
- Byman, Daniel, and Matthew C. Waxman. *The Dynamics of Coercion: American Foreign Policy and the Limits of Military Might*. New York: Cambridge University Press, 2002.

- Cameron, Robert Stewart. *Mobility, Shock, and Firepower: The Emergence of the U.S. Army's Armor Branch, 1917-1945*. Washington, D.C.: U.S. Army Center of Military History, 2008.
- Campbell, Douglas. *The Warthog and the Close Air Support Debate*. Annapolis, Md.: Naval Institute Press, 2003.
- Chapman, Anne W. *The Army's Training Revolution, 1973-1990: An Overview*. Fort Monroe, Va.: Office of the Command Historian, U.S. Army Training and Doctrine Command, 1991.
- . *The National Training Center Matures: 1985-1993*. Ft. Monroe, Va.: Military History Office, United States Army Training and Doctrine Command, 1997.
- . *The Origins and Development of the National Training Center, 1976-1984*. Fort Monroe, Va.: Office of the Command Historian, United States Army Training and Doctrine Command, 1992.
- Chilcoat, MG Richard A. *Strategic Art: The New Discipline for 21st Century Leaders*. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 1995.
- Chun, Clayton K. S. *Aerospace Power in the Twenty-First Century: A Basic Primer*. Colorado Springs, Colo.; Maxwell Air Force Base, Ala.: U.S. Air Force Academy in cooperation with Air University Press, 2001.
- Citino, Robert M. *Blitzkrieg to Desert Storm: The Evolution of Operational Warfare*. Lawrence: University Press of Kansas, 2004.
- Clark, Asa A., Peter W. Chiarelli, Jeffrey S. McKittrick, and James W. Reed, eds. *The Defense Reform Debate: Issues and Analysis*. Baltimore: Johns Hopkins University Press, 1984.
- Clausewitz, Carl von. *On War*. Translated by Michael Howard and Peter. Paret. Princeton, N.J.: Princeton University Press, 1984.
- Cole, Ronald H., Walter S. Poole, James F. Schnabel, Robert J. Watson, and Willard J. Webb. *The History of the Unified Command Plan, 1946-1999*. Washington, D.C.: Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 2003.
- Cooper, Matthew. *The German Army, 1933-1945: its political and military failure*. Chelsea, Mich.: Scarborough House, 1990.
- Coram, Robert. *Boyd: The Fighter Pilot Who Changed the Art of War*. Boston: Little, Brown, 2002.
- Davis, Richard G. *Anatomy of a Reform: The Expeditionary Aerospace Force*. Washington, D.C.: Air Force History and Museums Program, 2003.
- . *The 31 Initiatives: A Study in Air Force-Army Cooperation*. Washington, D.C.: Office of Air Force History, U.S. Air Force, 1987.
- Deptula, Brig Gen David A. *Effects-Based Operations: Change in the Nature of Warfare*. Washington: Aerospace Education Foundation, 2001.
- Doughty, MAJ Robert A. *The Evolution of U.S. Army Tactical Doctrine, 1946-76*. Fort Leavenworth, KS: Combat Studies Institute, US Army Command and General Staff College, 1979.
- Echevarria, COL Antulio Joseph II. *Toward an American Way of War*. Carlisle Barracks, Pa.: U.S. Army War College, Strategic Studies Institute, 2004.
- English, Allan D., Daniel Gosselin, Howard Coombs, and Laurence M. Hickey, eds. *The Operational Art: Canadian Perspectives: Leadership and Command*. Kingston, Ont.: Canadian Defence Academy Press, 2006.

- Epstein, Robert M. *Napoleon's Last Victory and the Emergence of Modern War*. Lawrence, Kan.: University Press of Kansas, 1994.
- Erickson, John. *The Soviet High Command: A Military-Political History, 1918-1941*. 3rd ed. Portland, Ore.: Frank Cass, 2001.
- Freedman, Lawrence. "The First Two Generations of Nuclear Strategists." In *Makers of Modern Strategy: from Machiavelli to the nuclear age*, edited by Peter Paret, Gordon Alexander Craig, and Felix Gilbert, 735–778. Princeton, N.J.: Princeton University Press, 1986.
- Fuller, J. F. C. *The Foundations of the Science of War*. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College Press, 1993.
- Futrell, Robert Frank. *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*. Vol. 1. 2 vols. Maxwell Air Force Base, Ala.: Air University, 1989.
- . *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1961-1984*. Vol. 2. 2 vols. Maxwell Air Force Base, Ala.: Air University, 1989.
- Glantz, David M. *Colossus Reborn: the Red Army at War: 1941-1943*. Lawrence: University Press of Kansas, 2005.
- . *Companion to Colossus Reborn: Key Documents and Statistics*. Lawrence: University Press of Kansas, 2005.
- . *Soviet Military Operational Art: In Pursuit of Deep Battle*. London; Portland, Ore.: Frank Cass, 1991.
- . *Stumbling Colossus: The Red Army on the Eve of World War*. Lawrence: University Press of Kansas, 1998.
- . *The Military Strategy of the Soviet Union: A History*. London: Frank Cass, 2004.
- Glantz, David M., and Jonathan M. House. *When Titans Clashed: How the Red Army Stopped Hitler*. Lawrence: University Press of Kansas, 1995.
- Gole, Henry G. *General William E. DePuy: Preparing the Army for Modern War*. Lexington: University Press of Kentucky, 2008.
- Gordon, Michael R., and Bernard E. Trainor. *The Generals' War: The Inside Story of the Conflict in the Gulf*. Boston: Little, Brown, 1995.
- Gray, Colin S. *Fighting Talk: forty maxims on war, peace, and strategy*. Washington, D.C.: Potomac Books, 2009.
- . *The Airpower Advantage in Future Warfare: The Need for Strategy*. Maxwell Air Force Base, Ala.: Airpower Research Institute, 2007.
- . *The Strategy Bridge: Theory for Practice*. Oxford: Oxford University Press, 2010.
- Hagerman, Edward. *The American Civil War and the Origins of Modern Warfare: ideas, organization, and field command*. Bloomington: Indiana University Press, 1988.
- Hallion, Richard. *Storm over Iraq: Air Power and the Gulf War*. Washington: Smithsonian Institution Press, 1992.
- Hammond, Grant Tedrick. *The Mind of War: John Boyd and American Security*. Washington: Smithsonian Institution Press, 2001.
- Handel, Michael I. *Masters of War: Classical Strategic Thought*. 3rd ed. London; Portland, Ore.: Frank Cass, 2001.
- Harrison, Richard W. *Architect of Soviet Victory in World War II: The Life and Theories of G.S. Isserson*. Jefferson, N.C.: McFarland & Co., 2010.
- . *The Russian Way of War: Operational Art, 1904-1940*. Lawrence: University Press of Kansas, 2001.

- Hattendorf, John B. *The Evolution of the U.S. Navy's Maritime Strategy, 1977-1986*. Newport Paper No. 19. Newport, R.I.: Center for Naval Warfare Studies, 2004.
- Hinote, Lt Col Clint. *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?* Maxwell Air Force Base, Ala.: Air University Press, 2009.
- Hoffmann, George F. and Donn A. Starry, eds. *Camp Colt to Desert Storm: The History of U.S. Armored Forces*. Lexington: University Press of Kentucky, 1999.
- Jaffe, Lorna S. *The Development of the Base Force, 1989-1992*. Washington, D.C.: Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 1993.
- Jones, Lt Col Johnny R. *Development of Air Force Basic Doctrine, 1947-1992*. Maxwell Air Force Base, Ala.: Air University Press, 1997.
- Kagan, Frederick W. *Finding the Target: The Transformation of American Military Policy*. New York: Encounter Books, 2006.
- Kelly, Justin, and Michael J. Brennan. *Alien: How Operational Art Devoured Strategy*. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2009.
- Kipp, Jacob W. "Operational Art and the Curious Narrative of the Russian Contribution." In *The Russian Military Today and Tomorrow: Essays in Memory of Mary Fitzgerald*, edited by Stephen Blank and Richard Weitz. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010.
- . "Soviet Military Doctrine and the Origins of Operational Art, 1917-1936." In *Soviet Military Doctrine from Lenin to Gorbachev, 1915-1991*, edited by Willard C. Frank and Philip S. Gillette, 85–132. Westport, Conn.: Greenwood Press, 1992.
- Kitfield, James. *Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War*. Washington, D.C.: Brassey's, 1997.
- Kokoshin, Andrei Afanas'evich. *Soviet Strategic Thought, 1917-91*. Cambridge, Mass.: MIT Press, 1998.
- Kometer, Lt Col Michael W. *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower*. Maxwell Air Force Base, Ala.: Air University Press, 2007.
- Krause, Michael D., and R. Cody Phillips, eds. *Historical Perspectives of the Operational Art*. Washington, D.C.: G.P.O., 2005.
- Kretchik, Walter E. *U.S. Army Doctrine: From the American Revolution to the War on Terror*. Lawrence: University Press of Kansas, 2011.
- Krulak, Victor H. *First to Fight: An Inside View of the U.S. Marine Corps*. Annapolis, Md.: Naval Institute Press, 1984.
- Laughbaum, Lt Col R. Kent. *Synchronizing Airpower and Firepower in Deep Battle*. Maxwell Air Force Base, Ala.: Air University Press, 1999.
- Leonhard, Robert R. *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle*. Novato, Calif.: Presidio Press, 1991.
- Lewis, Adrian R. *The American Culture of War: The History of U.S. Military Force from World War II to Operation Iraqi Freedom*. New York: Routledge, 2007.
- Liddell Hart, Basil H. *Strategy*. New York: Meridian, 1991.
- Lind, William S., and Michael D. Wyly. *Maneuver Warfare Handbook*. Boulder, Colo.: Westview Press, 1985.
- Linn, Brian McAllister. *The Echo of Battle: The Army's Way of War*. Cambridge, Mass.: Harvard University Press, 2007.
- Locher, James R. *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon*. College Station: Texas A & M University Press, 2002.

- Lock-Pullan, Richard. *US Intervention Policy and Army Innovation: from Vietnam to Iraq*. New York: Routledge, 2006.
- Lykke, Arthur F. "Towards An Understanding of Military Strategy." In *Military Strategy: Theory and Application: A Reference Text for the Department of Military Strategy, Planning, and Operations, 1982-1983*, edited by Arthur F. Lykke, 3–1–3–5. Carlisle Barracks, Penn.: U.S. Army War College, 1982.
- Mahnken, Thomas G. *Technology and the American Way of War*. New York: Columbia University Press, 2008.
- Matheny, Michael R. *Carrying the War to the Enemy: American Operational Art to 1945*. Norman: University of Oklahoma Press, 2011.
- Matthews, James K., and Cora J. Holt. *So Many, So Much, So Far, So Fast: United States Transportation Command and Strategic Deployment for Operation Desert Shield/Desert Storm*. Washington, D.C.: Research Center, United States Transportation Command and Joint History Office, Office of the Chairman of the Joint Chiefs of Staff, 1996.
- Matthews, James K., Margaret J. Nigra, and Cora J. Holt. *United States Transportation Command, the National Defense Reserve Fleet, and the Ready Reserve Force: A Chronology*. Scott Air Force Base, Ill.: United States Transportation Command, 1999.
- McMaster, H. R. *Dereliction of Duty: Lyndon Johnson, Robert McNamara, the Joint Chiefs of Staff, and the Lies that Led to Vietnam*. New York: HarperCollins, 1997.
- Meilinger, Col Phillip S. *10 Propositions Regarding Air Power*. Washington, D.C.: Air Force History and Museums Program, 1995.
- . *Airmen and Air Theory: A Review of the Sources*. Maxwell Air Force Base, Ala.: Air University Press, 2001.
- Meilinger, Col Phillip S., ed. *The Paths of Heaven: The Evolution of Air Power Theory*. Maxwell Air Force Base, Ala.: Air University Press, 1997.
- Menning, Bruce W. *Bayonets Before Bullets: the Imperial Russian Army, 1861-1914*. Bloomington: Indiana University Press, 1992.
- Mets, David R. *The Air Campaign: John Warden and the Classical Airpower Theorists*. Maxwell Air Force Base, Ala.: Air University Press, 1999.
- Mroczkowski, Dennis P. *With the 2d Marine Division in Desert Shield and Desert Storm*. U.S. Marines in the Persian Gulf, 1990-1991. Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1993.
- Naveh, Shimon. *In Pursuit of Military Excellence: the Evolution of Operational Theory*. London; Portland, Ore.: Frank Cass, 1997.
- Newell, Clayton R., and Michael D. Krause, eds. *On Operational Art*. Washington, D.C.: G.P.O., 1994.
- Offenhauer, Priscilla, and David L. Osborne. *History of the U.S. Army Battle Command Training Program, 1986-2003*. Washington, D.C.: Library of Congress, Federal Research Division, 2007.
- Olsen, John Andreas. *John Warden and the Renaissance of American Air Power*. Washington, D.C.: Potomac Books, 2007.
- Olsen, John Andreas, and Martin van Creveld. *The Evolution of Operational Art: From Napoleon to the Present*. Oxford: Oxford University Press, 2011.
- Pagonis, LTG William G., and Jeffrey L. Cruikshank. *Moving Mountains: Lessons in Leadership and Logistics from the Gulf War*. Boston, Mass.: Harvard Business School Press, 1992.

- Palmer, Bruce. *The 25-Year War: America's Military Role in Vietnam*. Lexington, Ky.: University Press of Kentucky, 1984.
- Pape, Robert Anthony. *Bombing to Win: Air Power and Coercion in War*. Ithaca, N.Y.: Cornell University Press, 1996.
- Pearce, Nigel. *The Shield and the Sabre: The Desert Rats in the Gulf 1990-1991*. London: H.M.S.O., 1992.
- Pokrant, Marvin. *Desert Shield at Sea: What the Navy Really Did*. Westport, Conn.: Greenwood Press, 1999.
- Purveyar, Edgar F. *Marine Corps Generalship*. Washington, D.C.: National Defense University Press, 2009.
- Quilter, Charles J. II. *With the I Marine Expeditionary Force in Desert Shield and Desert Storm. U.S. Marines in the Persian Gulf, 1990-1991*. Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1993.
- Record, Jeffrey. *Beyond Military Reform: American Defense Dilemmas*. Washington, D.C.: Pergamon-Brassey's, 1988.
- Reese, Roger R. *Red Commanders: A Social History of the Soviet Army Officer Corps, 1918-1991*. Lawrence: University Press of Kansas, 2005.
- Reynolds, Lt Col Richard T. *Heart of the Storm: The Genesis of the Air Campaign Against Iraq*. Maxwell Air Force Base, Ala.: Air University Press, 1995.
- Rice, Condoleezza. "The Making of Soviet Strategy." In *Makers of Modern Strategy: from Machiavelli to the nuclear age*, edited by Peter Paret, Gordon Alexander Craig, and Felix Gilbert, 648-676. Princeton, N.J.: Princeton University Press, 1986.
- Romjue, John L. *American Army Doctrine for the Post-Cold War*. Fort Monroe, Va.: Military History Office, U.S. Army Training and Doctrine Command, 1997.
- . *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982*. Fort Monroe, Va.: Historical Office, U.S. Army Training and Doctrine Command, 1984.
- Romjue, John L., Susan Canedy, and Anne W. Chapman. *Prepare the Army for War: A Historical Overview of the Army Training and Doctrine Command, 1973-1993*. Fort Monroe, Va.: Office of the Command Historian, United States Army Training and Doctrine Command, 1993.
- Romjue, John L., Anne W. Chapman, James T. Stensvaag, and Susan Canedy. *U.S. Army Training and Doctrine Command Annual History, 1 January to 31 December 1992*. Edited by Henry O. Malone Jr. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1993.
- . *U.S. Army Training and Doctrine Command Annual History, 1 January to 31 December 1993*. Edited by Henry O. Malone Jr. Fort Monroe, Va.: U.S. Army Training and Doctrine Command, 1994.
- Rostker, Bernard. *I Want You!: The Evolution of the All-Volunteer Force*. Santa Monica, CA: RAND, 2006.
- Scales, BG Robert H., LTC Terry L. Johnson, and MAJ Thomas P. Odom. *Certain Victory: The United States Army in the Gulf War*. Washington, D.C.: G.P.O., 1993.
- Schneider, James J. *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State*. Novato, Calif.: Presidio, 1994.

- Schubert, Frank N., and Theresa L. Kraus. *The Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm*. Washington, D.C.: U.S. Army Center of Military History, 1994.
- Schwarzkopf, GEN(Ret) H. Norman, and Peter Petre. *It Doesn't Take A Hero: General H. Norman Schwarzkopf, The Autobiography*. New York: Bantam Books, 1992.
- Scott, Harriet Fast, and William Fontaine Scott, eds. *The Soviet Art of War: Doctrine, Strategy, and Tactics*. Boulder, Colo.: Westview Press, 1982.
- Shy, John, and Thomas W. Collier. "Revolutionary War." In *Makers of Modern Strategy : from Machiavelli to the nuclear age*, edited by Peter Paret, Gordon Alexander Craig, and Felix Gilbert, 815–862. Princeton, N.J.: Princeton University Press, 1986.
- Simmons, Edwin H. *The United States Marines: A History*. 3rd ed. Annapolis, Md.: Naval Institute Press, 1998.
- Simpkin, Richard E. *Race to the Swift: Thoughts on Twenty-First Century Warfare*. London: Brassey's, 1994.
- Slife, James C. *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984*. Maxwell Air Force Base, Ala.: Air University Press, 2004.
- Solzhenitsyn, Aleksandr Isaevich. *The Gulag Archipelago, 1918-1956: an experiment in literary investigation*. New York: Harper & Row, 1974.
- Sorley, Lewis. *Thunderbolt: General Creighton Abrams and the Army of his Times*. New York: Simon & Schuster, 1992.
- Spiller, Roger J. *In the School of War*. Lincoln: University of Nebraska Press, 2010.
- Stein, David J. *The Development of NATO Tactical Air Doctrine, 1970-1985*. Santa Monica, Calif.: RAND, 1987.
- Stein, David J., Kimberly Nolan, and Robert Perry. *Process and Problems in Developing NATO Tactical Air Doctrine*. Santa Monica, Calif.: RAND, 1988.
- Stewart, Richard W., ed. *American Military History: The United States Army and the Forging of a Nation, 1775 –1917*. Vol. 1. 2 vols. Washington, D.C.: U.S. Army Center of Military History, 2009.
- Summers, Harry G Jr. *On Strategy: A Critical Analysis of the Vietnam War*. Novato, Calif.: Presidio Press, 1982.
- Swain, COL Richard M. *Lucky War: Third Army in Desert Storm*. Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1997.
- . "Filling the Void: The Operational Art and the U.S. Army." In *The Operational Art: Developments in the Theories of War*, by B. J. C. McKercher and Michael A Hennessy, 147–172. Westport, Conn.: Praeger, 1996.
- Tilford, Earl H. *Setup: What the Air Force did in Vietnam and Why*. Maxwell Air Force Base, Ala.: Air University Press, 1991.
- Trauschweizer, Ingo. *The Cold War U.S. Army: Building Deterrence for Limited War*. Lawrence, Kan.: University Press of Kansas, 2008.
- U.S. News and World Report. *Triumph Without Victory: The Unreported History of the Persian Gulf War*. New York: Times Books, 1992.
- Vego, Milan N. *Joint Operational Warfare: Theory and Practice*. Newport, R.I.: U.S. Naval War College, 2009.
- . *Recce-Strike Complexes in Soviet Theory and Practice*. Fort Leavenworth, Kan.: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1990.

- Warden, Lt Col John A. *The Air Campaign: Planning for Combat*. Washington, D.C.: National Defense University Press, 1988.
- Winnefeld, James A., and Dana J. Johnson. *Joint Air Operations: Pursuit of Unity in Command and Control, 1942-1991*. Annapolis, Md.: Naval Institute Press, 1993.
- Winton, Harold R. "An Ambivalent Partnership: US Army and Air Force Perspectives on Air-Ground Operations, 1973-90." In *The Paths of Heaven: The Evolution of Air Power Theory*, edited by Col Phillip S. Meilinger, 399–442. Maxwell Air Force Base, Ala.: Air University Press, 1997.
- Wohlstetter, Albert J., and Roberta Wohlstetter. *Nuclear Heuristics: Selected Writings of Albert and Roberta Wohlstetter*. Edited by Robert Zarate and Henry D. Sokolski. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2009.
- Woodward, Bob. *The Commanders*. New York: Pocket Star Books, 1992.
- Worden, R. Michael. *Rise of the Fighter Generals: The Problem of Air Force Leadership, 1945-1982*. Maxwell Air Force Base, Ala.: Air University Press, 1997.
- Yarger, Harry R. "How Do Students Learn Strategy? Thoughts on the U.S. Army War College Pedagogy of Strategy." In *Teaching Strategy: Challenge and Response*, by Gabriel Marcella, 179–202. Carlisle Barracks, Pa.: Strategic Studies Institute, U.S. Army War College, 2010.
- Yarrison, James L. *The Modern Louisiana Maneuvers*. Washington, D.C.: U.S. Army Center of Military History, 1999.
- Zimmeck, Steven M. *Combat Service Support in Desert Shield and Desert Storm*. U.S. Marines in the Persian Gulf, 1990-1991. Washington, D.C.: History and Museums Division, Headquarters, U.S. Marine Corps, 1999.

Journal Articles

- Chaisson, Kernan. "Rumsfeld rejects alleged exercise rigging." *Journal of Electronic Defense* 25, no. 10 (2002): 2.
- Cowan, Maj Jeffrey L. "Warfighting Brought to You by." *U.S. Naval Institute Proceedings* 127, no. 11 (2001): 61–64.
- Fialka, John J. "The Pentagon's Exercise 'Proud Spirit': Little Cause for Pride." *Parameters* XI, no. 1 (March 1981): 38–41.
- Gessert, Robert. "The AirLand Battle and NATO's New Doctrinal Debate." *RUSI Journal* 129, no. 2 (June 1984): 52–60.
- Gibson, Andrew E., and William M. Calhoun. "Barely in Time: The Successful Struggle to Create the Transportation Command." *Naval War College Review* XLIII, no. 4 (Autumn 1990): 72–80.
- Glantz, Mary. "The Origins and Development of Soviet and Russian Military Doctrine." *The Journal of Slavic Military Studies* 7, no. 3 (1994): 443–480.
- Greenberg, I. M. "Project 100,000: The Training of Former Rejectees." *The Phi Delta Kappan* 50, no. 10 (June 1, 1969): 570–574.
- Hamm, Manfred R. "The AirLand Battle Doctrine: NATO Strategy and Arms Control in Europe." *Comparative Strategy* 7, no. 3 (1988): 183–211.
- Hoffman, SSgt Timothy. "Guardian Replaces Olympic." *Association of Air Force Missileers Newsletter* 2, no. 1 (January 1994): 4.
- Kelly, Justin, and Michael J. Brennan. "The Leavenworth heresy and the perversion of operational art." *Joint Forces Quarterly* 56, no. 1 (2010): 109–116.

- Kipp, Jacob W. "FMSO-JRIC and Open Source Intelligence: Speaking Prose in a World of Verse." *Military Intelligence Professional Bulletin* 31, no. 4 (December 2005): 45–51.
- Klein, Yitzhak. "The Sources of Soviet Strategic Culture." *The Journal of Slavic Military Studies* 2, no. 4 (1989): 453–490.
- Krieger, Col Clifford R. "USAF Doctrine: An Enduring Challenge." *Air University Review* 35, no. 5 (October 1984): 16–25.
- Kross, Lt Col Walter. "Military Reform: Past and Present." *Air University Review* 32, no. 5 (1981): 101–108.
- Linn, Brian McAllister. "The American Way of War Debate: An Overview." *Historically Speaking* 11, no. 5 (2010): 22–23.
- . "The U.S. Armed Forces' View of War." *Daedalus* 140, no. 3 (Summer 2011): 33–44.
- Macak, Maj Richard J., and Maj Joseph E. Noble. "The U.S. Army's School of Advanced Military Studies: A Marine Overview and Perspective." *Marine Corps Gazette* 73, no. 7 (July 1989): 66–70.
- Metz, Steven. "The Next Twist of the RMA." *Parameters* XXX, no. 3 (Autumn 2000): 40–53.
- Morgan, LTC (Ret) Thomas D. "BCTP: Preparing for War." *Military Review* LXIX, no. 11 (November 1989): 2–10.
- Mowbray, J. A. "Air Force Doctrine Problems: 1926-Present." *Airpower Journal* 9, no. 4 (Winter 1995): 21–41.
- Murray, Williamson. "A Tale of Two Doctrines: The Luftwaffe's 'Conduct of the Air War' and the USAF's Manual 1-1." *Journal of Strategic Studies* 6, no. 6 (December 1983): 84–93.
- Norton, Capt Thomas J. "Blue Flag." *Air University Review* 30, no. 2 (February 1979): 58–68.
- Owen, Maj Stanly C. "Marine Corps M1A1 Tanks in Operation Desert Storm." *Amphibious Warfare Review* 10, no. 2 (Summer/Fall 1992): 50–54.
- Rice, Condoleezza. "The Party, the Military, and Decision Authority in the Soviet Union." *World Politics: A Quarterly Journal of International Relations* 40, no. 1 (1987): 55–81.
- Samuelson, Lennart. "Mikhail Tukhachevsky and War-Economic Planning: Reconsiderations on the Pre-war Soviet Military Build-Up." *The Journal of Slavic Military Studies* 9, no. 4 (1996): 804–847.
- Schneider, James J. "The Cobra and the Mongoose: Soviet Defensive Doctrine During the Interwar Period and the Problem of Strategic Dislocation." *The Journal of Slavic Military Studies* 19, no. 1 (2006): 57–66.
- . "The Loose Marble - and the Origins of Operational Art." *Parameters* 19, no. 1 (1989).
- Sinagra, Tony. "Maritime Prepositioning System WORKS during Operation Desert Shield." *Leatherneck* 73, no. 11 (November 1990): 28–29.
- Simmons, Edwin H. "Memorandum from the Director: 'Amphibious' Becomes 'Expeditionary'." *Fortitudine* XVIII, no. 1 (Spring-Summer 1988): 3–6.
- Terriff, Terry. "'Innovate or Die': Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps." *Journal of Strategic Studies* 29, no. 3 (2006): 475–503.
- Tritten, James J. "Naval Perspectives on Military Doctrine." *Naval War College Review* XLVIII, no. 2 (Spring 1995): 22–38.
- Van Dyke, Carl. "The Timoshenko Reforms: March-July 1940." *The Journal of Slavic Military Studies* 9, no. 1 (1996): 69–96.

- Von Wahlde, Peter. "A Pioneer of Russian Strategic Thought: G. A. Leer, 1829-1904." *Military Affairs: The Journal of Military History, Including Theory and Technology* 35, no. 4 (1971): 148–153.
- Wass de Czege, Huba. "The School of Advanced Military Studies: An Accident of History." *Military Review* LXXIX, no. 4 (August 2009): 102–107.
- Winton, Harold R. "A Black Hole in the Wild Blue Yonder: The Need for a Comprehensive Theory of Air Power." *Air Power History* 39, no. 4 (Winter 1992): 32–42.

Pamphlets

- Benson, Kevin C. M. "Landpower Essay 08-1: Tactics for Small Wars." Association of the United States Army, Institute of Land Warfare, July 2008.
- Headquarters, Air Force Doctrine Center. *Air Force Doctrine Center History*. Maxwell Air Force Base, Ala.: Air Force Doctrine Center, 2004. Copy in author's possession.
- Hunter, Danita L. *United States Transportation Command: 10 Years of Excellence, 1987-1997*. Scott Air Force Base, Ill.: U.S. Transportation Command, 1997.
- Schmitt, John F. *Defense Adaptive Red Team Working Paper #02-4: A Practical Guide for Developing and Writing Military Concepts*. McLean, Va.: Hicks and Associates, 2002.
- Wass de Czege, Huba. "Lessons from the Past: Making the Army's Doctrine 'Right Enough' Today." Arlington, Va.: Institute of Land Warfare, 2006.

Scholarly Papers, Monographs, Theses, and Dissertations

- Alger, COL John I. "Thoughts Toward a Definition of Joint Operational Art." Unpublished paper. National War College, February 5, 1986. History of Operational Art from BG Stofft, Folder 3, Pre-CSA Papers, Doctrine Development Issues. U.S. Army Military History Institute, Gordon R. Sullivan Papers.
- Benson, Kevin C. M. "Educating the Army's Jedi: The School of Advanced Military Studies and the Introduction of Operational Art into U.S. Army Doctrine, 1983-1994." PhD dissertation, Lawrence: University of Kansas, 2010.
- Bernard, MAJ Barrett M. "Systemic Operational Design: Bringing Efficacy to the Operational Level of War." Unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2007.
- Clemente, Steven E. "'Mit Gott! Für König Und Kaiser': a critical analysis of the making of the Prussian Army officer, 1860-1914." PhD dissertation, Ann Arbor: University of Michigan, 1989.
- Cranz, MAJ Donald. "Understanding Change: Sigismund von Schlichting and the Operational Level of War." Monograph, Fort Leavenworth, Kan.: School of Advanced Military Studies, U.S. Army Command and General Staff College, 1989.
- Damian, Fideleon. "The Road To FMFM 1: The United States Marine Corps And Maneuver Warfare Doctrine, 1979-1989." Master's thesis, Manhattan: Kansas State University, 2008.
- Dawson, COL David A. "The Evolution of U.S. Central Command from Operational to Strategic Headquarters." Unpublished paper, Carlisle Barracks, Pa.: U.S. Army War College, 2010.

- Dembosky, Andrew David. "Meeting the Enduring Challenge: United States Air Force Basic Doctrine through 1992." Master's thesis, Raleigh: North Carolina State University, 1993.
- Donahue, Maj Patrick E. "Does FMFM 1-1 Provide Adequate Guidance to Understand Campaign Planning?" Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1992.
- Doughty, MAJ Robert A. "The Command and General Staff College in Transition, 1946-1976." Special Study Project, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1976.
- Fadok, Maj David S. "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis." Master's thesis, Maxwell Air Force Base, Ala.: School of Advanced Airpower Studies, 1995.
- Hayward, Maj Edward P.W. "Planning Beyond Tactics: Towards a Military Application of the Philosophy of Design in the Formulation of Strategy." Unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2008.
- Helton, Bradley Dean. "Revolving-Door War: Former Commanders Reflect on the Impact of the Twelve-Month Tour upon Their Companies in Vietnam." Master's thesis, Raleigh: North Carolina State University, 2004.
- Herbert, MAJ Paul H. *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations*. Fort Leavenworth, Kan.: Combat Studies Institute, U.S. Army Command & General Staff College, 1988.
- Hurley, Matthew M. "A Workers' Way of War: The Red Army's Doctrinal Debate, 1918-1924." Master's thesis, Seattle: University of Washington, 1991.
- Kelley, MAJ John M. "Claire Lee Chennault: Theorist and Campaign Planner." Monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 1993.
- Lafleur, MAJ Thomas M. "Mikhail Frunze and the Unified Military Doctrine." Master's thesis, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 2004.
- McCormick, MAJ Michael. "The New FM 100-5: A Return to Operational Art." Monograph, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1997.
- Osinga, Frans P. B. "Science, Strategy and War: The Strategic Theory of John Boyd." PhD dissertation, Leiden, Netherlands: Leiden University, 2005.
- Reese, Maj William G. "The Doctrine Gap: The 27 Year Wait for a New Air Force Operational Doctrine Document." Master's thesis, Maxwell Air Force Base, Ala.: School of Advanced Airpower Studies, 1996.
- Rusing, Maj Ronald L. "Prepare the Fighter Force - Red Flag/Composite Force." Master's thesis, Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, 1980.
- Schneider, James J. *Vulcan's Anvil: The American Civil War and the Foundations of Operational Art*. SAMS Theoretical Paper No. 4. Fort Leavenworth, Kan.: U.S. Army Command and General Staff College, School of Advanced Military Studies, June 16, 1992.
- Sorrells, William T., Glen R. Downing, Paul J. Blakesley, David W. Pendall, Jason K. Walk, and Richard D. Wallwork. "Systemic Operational Design: an introduction." Unpublished monograph, Fort Leavenworth, Kan.: U.S. Army School of Advanced Military Studies, 2005.

- Tiberi, COL Paul, LTC Robert Moberly, and LTC John Murphy. "Force Projection: Seeds for a New Doctrine." U.S. Army War College Research Project, Mershon Center, The Ohio State University, 1991.
- Yoshitani, Gail E. "The Power of Simulation." Master's thesis, Durham, N.C.: Duke University, 2001.

Websites

- Association of Air Force Missileers. "Global Thermonuclear Quotes." *The Missile Forums*, October 30, 2009.
<http://www.missileforums.com/forums/viewtopic.php?f=21&t=845&p=7248> (accessed March 21, 2012).
- Council on Foreign Relations. "The Gulf War: Twenty Years Later." Panel discussion transcript, February 15, 2011. <http://www.cfr.org/middle-east/gulf-war-twenty-years-later/p24150> (accessed April 18, 2012).
- Gorman, Paul F. and Combat Studies Institute, U.S. Army Combined Arms Center. *Strategy and Tactics: The Papers of Paul F. Gorman*. 2011.
<http://usacac.army.mil/cac2/csi/docs/Gorman> (accessed June 16, 2012)
- Headquarters, U. S. Marine Corps. "Who's Who in Marine Corps History: Lieutenant General Bernard E. Trainor, USMC (Retired)," 2010.
http://www.tecom.usmc.mil/HD/Whos_Who/Trainor_BE.htm (accessed April 16, 2011).
- Headquarters, U. S. Marine Corps, and Office of the Deputy of Commandant for Manpower and Reserve Affairs. "Official Biography: Major General Fred E. Haynes, Jr.," 2010.
https://slsp.manpower.usmc.mil/GOSA/biographies/rptBiography.asp?PERSON_ID=535&PERSON_TYPE=General (accessed April 2, 2011).
- Künstler, Mort, and U.S. Army Center of Military History. "Indiana Rangers: The Army Guard in Vietnam." *National Guard Heritage Series*, 1984.
<http://www.history.army.mil/art/225/INRGRS.htm> (accessed November 4, 2011).
- Marine Corps Association. "About the Marine Corps Association," 2010. <http://www.mca-marines.org/about> (accessed April 16, 2011).
- U.S. Marine Corps, Marine Corps University. "History of the Marine Corps War College." *Marine Corps War College*, n.d.
<http://www.mcu.usmc.mil/War%20College%20Documents/History.ppt> (accessed February 4, 2012).
- U.S. Military Academy Department of History. "Kuwait and Vicinity, 1991 - The Liberation of Kuwait, 24-26 February." *Atlases, The First Gulf War*, undated.
<http://www.westpoint.edu/history/SiteAssets/SitePages/First%20Gulf%20War/GulfWarFirst03.gif> (accessed May 11, 2012).
- Zabecki, David T. "Colonel Harry G. Summers, Jr., was a soldier, scholar, military analyst, writer, editor and friend." *The Clausewitz Homepage*, n.d.
<http://www.clausewitz.com/readings/SummersObitText.htm> (accessed November 29, 2011).