

AD-A284 069



①

How Big Is The Canvas For Operational Art?

A Monograph
by
Major Timothy R. Coffin
Quartermaster



DTIC
ELECTE
SEP 09 1994
S G D

94-29061



sup

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

Second Term AY 93-94

Approved for Public Release; Distribution is Unlimited

DTIC QUALITY INSPECTED 3

94 9 06 1 20

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 17/05/94	3. REPORT TYPE AND DATES COVERED Monograph		
4. TITLE AND SUBTITLE How ^{Big} Large is the Canvas For Operational Art? (U)		5. FUNDING NUMBERS		
6. AUTHOR(S) MAJ Timothy R. Coffin, USA				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies ATTN: ATZL-SWV Fort Leavenworth, Kansas 66027-6900 COM (913) 684-3437 AUTOVON 552-3437		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This monograph addresses the theory of operational art and discusses where it can be applied. As American military forces prepare to enter into the 21st Century it is clear that they will be involved in a wide range of operations. The collapse of the bi-polar world with the end of the Cold War has increased the potential for U.S. troop deployments on Operations Other Than War (OOTW). These deployments require a relevant theory which links tactical actions to strategic goals. The monograph examines the theory of operational art to determine a suitable model for the U.S. military. It establishes a broad framework that allows operational art to exist throughout the spectrum of conflict. The fundamental conclusion of the paper is that U.S. theories of operational art must be modified to provide a coherent model that is applicable across the spectrum of military operations. The character of future military actions requires solid theoretical foundations to provide direction to tactical actions. The lack of a single integrating theory today hampers our ability to achieve lasting strategic results in today's diverse military operations. DTIC QUALITY INSPECTED 3				
14. SUBJECT TERMS OPERATIONS, OPERATIONAL ART, LOW INTENSITY CONFLICT, OPERATIONAL LEVEL DOCTRINE THEORY			15. NUMBER OF PAGES 54	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Timothy R. Coffin

Title of Monograph: How ^{Big} Large is the Canvas for Operational Art?

Approved by:

Stephen M. Lutz Monograph Director
LTC Stephen M. Lutz, MA

Gregory Fontenot Director, School of
COL Gregory Fontenot, MA, MMAS Advanced Military
Studies

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

Accepted this 6th day of May 1994

ABSTRACT

HOW BIG IS THE CANVAS FOR OPERATIONAL ART by MAJ.
Timothy R. Coffin, USA, 52 pages.

This monograph addresses the theory of operational art and where it can be applied. As American military forces prepare to enter into the 21st Century it is clear that they will be involved in a wide range of operations. The collapse of the bi-polar world with the end of the Cold War has increased the potential for U.S. troop deployments on Operations Other Than War (OOTW). These deployments require a relevant theory to link tactical actions to strategic goals. The theory that provided guidance for our Cold War focus in the 1980's should be updated and extended to carry on in the future.

A review of the historical development of the theory of operational art shows that early developments were a result of the stalemate and bloodshed of World War I. Russian theorists Triandafillov and Svechin developed their theories within the context of the Soviet way of war. This emphasis on major land battles across the continent of Europe was truly appropriate for their future and World War II. American military proponents adapted these theories of operational art in the early 1980's as the U.S. sought to deal with the demand of a potential war with the Soviet Union. These theories fit well in the context of the times. A new strategic concept calls for these theories to be reexamined to determine if they are truly theoretical models that are applicable across a broad spectrum or narrower doctrinal models that have existed as theories in the relatively stable bi-polar world.

This monograph examines the theory of operational art to determine a suitable model for the U.S. military. It establishes a broad framework that allows operational art to exist throughout the spectrum of conflict. While at each level of conflict the employment of operational art may require a tailored set of tools, the fundamental principles remain the same. Operational art should provide the link between strategy and tactics that provides continuity and unity of effort in any military action.

The fundamental conclusion of the paper is that U.S. theories of operational art must be modified to provide a coherent model that is applicable across the spectrum of military operations. The character of military operations in the future require a solid foundation that will provide direction to tactical actions. The lack of a single integrating theory will hamper our ability to achieve lasting strategic results with today's diverse military operations.

For	
\&l	☒
ed	☐
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

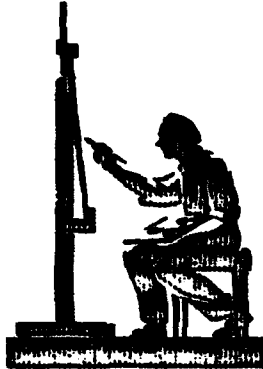
Table of Contents

INTRODUCTION	1
PURPOSE & BACKGROUND	3
TERMS	6
<i>Strategic Level of War</i>	7
<i>Tactical Level of War</i>	8
<i>Operational Level of War</i>	8
OPERATIONAL ART	16
OPERATIONAL	12
ART	13
FM-100-5	13
FM 101-5-1 (INITIAL DRAFT)	15
RUSSIAN OPERATIONAL ART	17
<i>Aleksandr A. Svechin</i>	17
<i>V. K. Triandafilov</i>	20
UNITED STATES OPERATIONAL ART	23
<i>Dr. Schneider</i>	23
<i>Influences on American Style Operational Art</i>	28
<i>Current trends in the use of the term Operational Art</i>	29
TOWARDS A NEW MODEL	32
CONCLUSION	39
ENDNOTES	42

INDEX OF FIGURES

FIGURE 1 LEVELS OF WAR	7
FIGURE 2 SPECTRUM OF WAR	9
FIGURE 3 CONDITIONS FOR OPERATIONAL ART	24
FIGURE 4 OPERATIONAL ART.....	25
FIGURE 5 OPERATIONAL ART IN THE FALKLANDS	27
FIGURE 6 ENDS / WAYS / MEANS.....	32
FIGURE 7 LINKING ENDS, WAYS, MEANS	34
FIGURE 8 PROPOSED CRITERIA FOR OPERATIONAL ART	35

Introduction



"The artistic idea does not receive its full aesthetic expression until it is painted upon canvas. The operational idea achieves its fullest expression when it is "painted" upon the theater of operations¹.... An operation, like a painting, is created out of divisions, a battlefield, lines of

operations, ammunition and so forth. These elements, like the paints, brushes and canvas of the painter, are the tools of the operational artist. But the form of the operation or a painting—the choice of combinations like the choice of shapes and colors, the intensity like the texture, the design like the composition—is not created by the army or the paint and brush. It is created by ideas."² Dr. James J. Schneider

It is easy to look at a Rembrandt painting or a Michelangelo sculpture and know it is art. From the moment one throws his head back to gaze up at the ceiling in the Sistine Chapel in the Vatican he is filled with the knowledge that this, too, is art. The grand art of the classical masters is easy to spot, yet difficult to master. It is more than just the scientific rendering of an object throughout the use of pigments and shapes. Through the masters touch, great art connects ideas in the mind of the creator, with the heart strings of the observer. A more contemporary painter, Norman Rockwell considered himself more an

illustrator or technician than an artist. In comparison with the European classical masters, his drawings and sketches appear light and perhaps even shallow. Yet Rockwell's works communicate a uniquely American spirit that few other artists can equal. His illustrations reflect a style that is truly art and yet distinctly American.

Operational art, like art itself, is most easily recognized in its grand form, with massive armies fighting mechanized battles in classic campaigns. In these instances the strategy of a nation is communicated into battles through an operational art. It is this art which transmits a greater meaning to the campaign than the individual battles themselves would impart. There are few who would dispute the relevance of operational art to campaigns, like Grant's drive of 1864-5 in the American Civil War, or the Allied Coalition's sweeping move through the Arabian desert during Operation Desert Storm. In the past fifteen years, since the term operational art has come into vogue, these and other major campaigns have gained some acceptance as "the masterpieces " of operational art. They have received a large share of the attention from theoreticians and doctrinal writers, in spite of the fact that they comprise only a small (but significant) part of all military operations. More typical of American troop deployments are the hundreds of smaller missions that are perhaps just sketches in comparison to the large masterpiece operations. These military

engagements have generally been dismissed as something other than operational art.

Every month new articles are published, investigating the latest insights into American military doctrine. In this myriad of writings, the term *Operational Art* is often sprinkled about to explain military operations that range from "the Presidents War on Drugs" to clashes of army groups on the Central European plains³. In many writings, (including Army doctrine from 1986 to 1993)⁴ the terms "operational art" and "operational level of war" have become synonymous and are used interchangeably⁵. Operational art has become like logistics. Everyone knows it's important; are sure that they want some, but, what exactly it is, and how it works remains an enigma.

If operational art is to form a central piece of our Army doctrine, then it must not be a formless puzzle that floats in a foggy ether. Rather it should be a clearly defined principle that military leaders know when and where to apply in order to enhance US military operations.

Purpose & Background

The purpose of this paper is to clarify what *operational art* is and where it can be used. Understanding this term provides a military staff and its civilian masters the means to communicate effectively

about a topic that is vitally important. Aleksandr Svechin, a Soviet theorist put it this way, "A general staff should always speak the same language and use certain expressions for the same thoughts."⁶

Commonly understood terminology leads to rapid communication of concepts and unity of efforts. While "perfect unity" is perhaps unachievable and even undesirable if it leads to a stifling of creativity, it should be sought on basic theoretical and doctrinal terminology. Without a common definition, discussions on the employment of the principles of war lose the framework that makes them meaningful and become vague, imprecise and futile.

To accomplish this goal the monograph examines the evolution of the term *operational art* in the American military up to its current doctrinal definition. Discussions on operational art are then examined to determine the theory governing the use of this concept. This is then compared with the American doctrine and practice of operational art to identify the differences. Then, using theory and practice as a guide, the paper develops a theory of operational art that is applicable across the spectrum of military operations.

The world that military leaders face for the foreseeable future is different from that which was foretold ten years ago. The collapse of the Soviet Union not only reshaped the map of the Eurasian continent, but also replaced the paradigm through which the American military establishment viewed the world. Just as the old paradigm was useful in

shaping American force structure, doctrine, positioning, and other matters in the 1980s, the new model shapes and influences the US military for the 1990s and beyond.

During the 1980's the American military was focused both materially and intellectually on the Fulda Gap and a major land war in Europe. This was a natural (and many would say correct) response to viewing the world through the old Cold War paradigm. On the materiel side, massive stocks were pre-positioned to support North Atlantic Treaty Organization (NATO) forces. The M1 Abrams tank, Apache helicopter and Multiple Launch Rocket System (MLRS) were all developed to deal with the numeric superiority of Soviet forces. On the intellectual level, Army doctrine writers addressed the European problem with the tactics known as Air-Land Battle.⁷ On the theory side, the failure of the U.S. to achieve its objectives in the Vietnam War and the looming threats of the Cold War caused a search for voids in our theoretical construct of war. This investigation led to the rediscovery in America of operational art and the operational level of war. It filled a gap in our emaciated theories of war and was looked to as a framework to begin solving some of these pressing problems.

The study of operational art helped to deal with the problem of force imbalances in Europe. It provided a means of getting a greater effect from the same number of forces, and, because the Army's focus

was on a European land war, the emphasis on operational art appears to have followed the same direction.

The future of U.S. Army operations in the late 1990's and beyond has a wider field of potential operations than was presented in the last decade. The end of the Cold War has freed American military forces from their monocular vision on Soviet aggression to a wide angle look at the range of possibilities for the employment of military power to further national interests. This new view has been cause to stop and re-look U.S. military doctrine, equipment and force structure. As part of this doctrine review to ensure that it suits the needs of the future, Army doctrine on operational art must be examined to see if the current definition provides the proper conceptual framework needed for future engagements. The use of operational art in this new era must be as flexible as the operations which the Army is called upon to perform. If operational art is not applicable to certain situations, that should be a part of our doctrine as well. But, before we can decide where to apply it, we must first know what it is.

Terms

Because of the complexity of warfare itself, it is important to ensure a common understanding of key terms used in this monograph.

The first key is both the distinction of, and the transcendence between, the three levels of war currently recognized in U.S. Army doctrine (Figure 1). These levels assist in dividing war into its component parts, and provide the framework to think about and direct military activities within any given theater throughout a wide spectrum of military missions.

LEVELS OF WAR

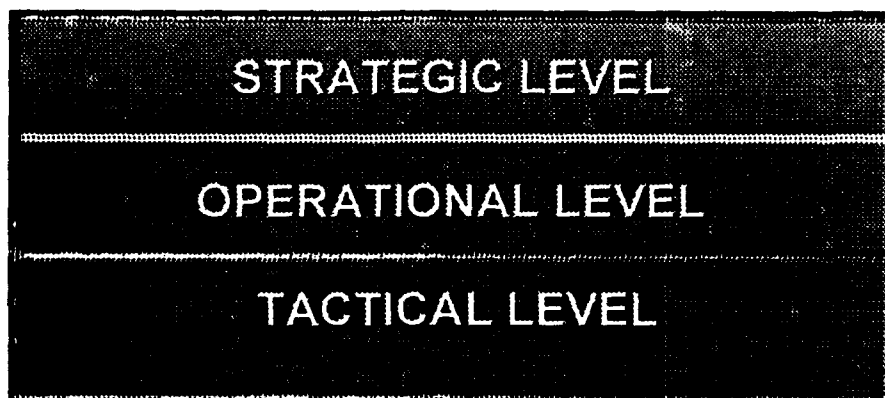


Figure 1 Levels of War

Strategic Level of War

At the strategic level, national interests⁸ are the basis for determining how, when and where to employ national power (political, economic, informational and military forces) to secure national goals.⁹ This guidance (national strategy) gives direction and purpose to the use of each element of national power. For the military, the National Command Authority (NCA) and the Chairman of the Joint Chiefs of Staff (CJCS) are tasked with translating national strategy into military

strategic objectives.¹⁰ The intent is that these objectives are to set the conditions for the resolution of political issues in favor of U.S. national interests. Theater commanders may also operate at the strategic level of war by setting theater strategic goals which define broad objectives that support national strategic goals.

Tactical Level of War

At the tactical level of war battles and engagements are planned and fought to defeat enemy forces, as well as seize objectives specified by the operational commander. At this level, units maneuver to obtain positional advantage with enemy forces in order to accomplish specific objectives assigned to units. These objectives may include holding or seizing ground, destruction of enemy forces, deception, denial or suasion (causing the enemy to act as you desire).

Operational Level of War

The operational level of war is where joint and combined forces plan, execute and sustain major operations and campaigns in support of strategic objectives.¹¹ It is intended to provide direction and resourcing for tactical operations. The operational level ties the tactical battlefield together in space and time to phase and sequence operations to achieve objectives which support the strategic goals.

The operational level functions throughout the spectrum of military engagements. In peacetime CINC's provide the command and control for national commitments in support of strategic interests. Low level commitments may involve just a handful of forces conducting nation assistance or foreign internal defense missions. High intensity commitments may involve all services with millions of soldiers, sailors and airmen. (see Figure 2)

During a high intensity conflict in a fully developed theater, strategic, operational and tactical levels are relatively distinct. It is easy to assume that one can assign units and organizations to where they fit in one of these levels. This does indeed simplify the three levels

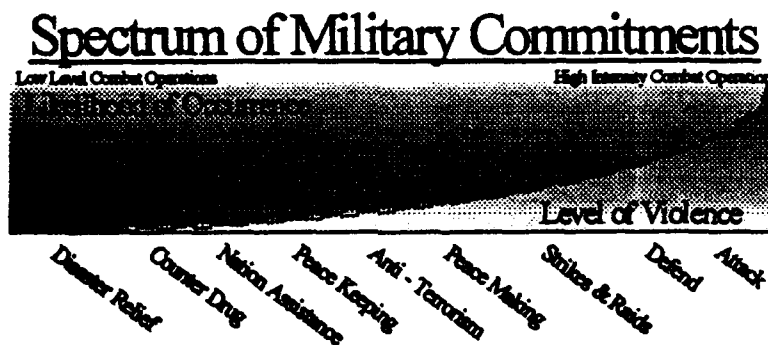


Figure 2 Spectrum of War

of war to an easily understandable formula. The temptation is to say that if an action is done by a division sized unit or below, then it must have been tactics. This simplification helps to grasp one aspect of the

levels of war, but it belittles the tremendous intricacies involved in the intermeshing of national interests, political policy and the military instrument of power. This is not a good assumption. Divisions and below normally operate at the tactical level while corps and armies usually work at the operational level. But, each command can actually operate throughout the whole spectrum. Even strategic establishments like the Chairman of the Joint Chiefs of Staff (CJCS) or the Office of the President can descend all the way down to controlling a tactical level event. It is for this reason that Army doctrine states that "No specific level of command is solely concerned with operational art."¹²

The diagram in figure 1 shows that you cannot draw a solid line between tactical operations and the operational or strategic levels of war. The gray shades depict a continuum of actions that often cannot be distinguished from each other. The Russian theorist Aleksandr Svechin recognized this when he said "tactics is an extension of operational art and operational art is an extension of strategy, strategy is an extension of politics".¹³ It is also important to understand that it is not the size of the force that determines if an action is tactical or strategic. "Each level is defined by the outcome intended - not by the level of command or the size of the unit."¹⁴

Our doctrine states that when one intends a particular action to be tactical, the intention defines its position in the levels of war. Experience shows otherwise. At times only hindsight is able to tell if a

particular battle was tactical or operational / strategic in its results. The influence of the action actually provides the final ruling on its position in the levels of war. While this is not as neat and easy to deal with as the doctrinal definition, it represents the reality that military commanders and planners must deal with.

Two recent examples illustrate how tactical events can transcend the tactical level of war into the operational or strategic levels. In the first incident a mortar attack on a market stall resulted in deaths of scores of civilians in a crowded square in Sarajevo. The attack is clearly a tactical event in most military minds. But this attack was, like many military operations in the future will be, viewed worldwide, in virtually real time via television. As a result of the global attention focused on the attack, the tactical action became strategic in consequence. Perhaps the mortar attack was planned as a strategic event, but most likely it was a tactical action taken by unit as low as company level. World outcry against the slaughter resulted in increased involvement by outside governments to resolve the situation.

In a second example, heavy casualties taken by the U.S. Army Ranger regiment in Somalia during an October 1993 tactical firefight resulted in relatively complete changes to both the operational and strategic objectives for all U.S. military forces involved in Somalia. This case illustrates the difficulties in determining what level (tactical/operational/strategic) a unit is operating at in Operations Other

Than War (OOTW). The Rangers were using a tactical size unit to conduct at least an operational level mission to remove the head (Coup de Main) of a powerful clan faction.

Both of the above examples show how military actions at a low level can impact throughout higher levels of war. Likewise, World War I is replete with examples of plans created at the operational level which failed to produce operational results.¹⁵ While these plans were operational in intent,¹⁵ in reality they became just a string of tactical battles. These battles of attrition ultimately had no operational or strategic impact.

Operational Art

Operational art is difficult to define. It is a unique military term comprised of two commonly used words. These words, using their common meaning, only begin to hint at the military significance of the term. The recent etymology of the word gives us some insight into its meaning.

Operational

Operational comes from the base word operate which means "to work". To operate also implies the exertion of power or influence¹⁶ which, when operating correctly, produces an appropriate effect. The

word operational in the military sense refers to planning, conducting and supporting military missions. In Napoleonic times, military planning was normally conducted at the corps level and above, while below that level commanders focused on training, executing and sustaining their forces. It appears as if this link between corps and the term operational (the planning level) level has remained.

Art

The term "art" implies that operational level activity is not a science. An art is a skill that is acquired by study, experience or observation. The artist's skill is enhanced by the application of creative imagination or insight.¹⁷ Military art goes hand and glove with military science which can be reduced to rules and procedures that can be memorized or learned. Military art can be acquired through study and experience, while the truly great military artist may be born with a special insight to solve military problems.¹⁸ Operational art, however, is more than just the sum of the two component words.

FM-100-5

The 1986 version of Army Field Manual (FM) 100-5, *Operations*, used the term "operational art" in place of "the operational level of war". By the time the manual was rewritten and published in

1993, it was reflected that the two terms described separate and distinct concepts. The definition of operational art found in the current FM 100-5 is a product of the many long debates within the Army's leadership. The resulting doctrine defines operational art as:

"the skillful employment of military forces to attain strategic and/or operational objectives within a theater through the design, organization, integration, and conduct of theater strategies, campaigns, major operations, and battles. Operational art translates theater strategy and design into operational design which links and integrates the tactical battles which when fought and won, achieve the strategic aim....In its simplest expression, operational art determines when, where, and for what purpose major forces will fight...."¹⁹

The above definition became U.S. Army doctrine on 14 June 1993 by the order of General Gordon R. Sullivan, Secretary of the Army, but that has not ended the debate on how this term should be used. In the introduction to FM 100-5 the authors acknowledge that doctrine is, "Never static, always dynamic, the Army's doctrine is firmly rooted in the realities of current capabilities.... Doctrine captures the lessons of past wars, reflects on the nature of war and conflict in its own time and anticipates the intellectual and technological developments that will bring victory now and in the future."²⁰

Theoreticians, authors, and professional soldiers push and pull on these definitions to redefine them in the manner in which they feel most accurately represents the reality of warfare for today and tomorrow.

FM 101-5-1 (Initial Draft)

The January 1994 initial draft of FM 100-5-1, *Operational Terms and Symbols*, closely echoes the wording found in FM 100-5. It calls operational art, "the employment of military forces to attain strategic goals through design, organization, and execution of battles and engagements into campaigns and major operations. In war it determines when, where, and for what purpose major forces will fight over time."²¹ This draft has some flexibility for interpreting where in the continuum of war operational art can be applied. Perhaps the most constraining part of the definition to many is the concept that operational art must involve both battles and major forces. The fact that you had to do battle at all is a sub-optimal solution, according to Sun Tzu who said, "supreme excellence consists in breaking the enemy's resistance without fighting".²² This definition would infer that an army must go to battle before operational art is involved. Therefore, if one were to deploy his forces in such a manner where his enemy could not win and his enemy concedes, by this definition that is something other than operational art.

The use of the term, major forces, in this definition also places a constraint on where operational art may occur. While "major forces" is open to interpretation, it is generally used for corps and theater level organizations. At the same time brigade and division operations may

look like major forces to a regular force platoon leader, or a clan leader in a third world country. Soviet doctrine similarly classified operational art into three levels of forces from the Front level (groups of armies) down to the corps level.²³ This may have been a fitting definition for a conflict like World War II or a major ground war in Europe, but it probably does not fit the wide range of operations the U.S. Army may now be called on to perform.

U.S. Army Southern Command (SOUTHCOM) provides an example of the problem this definition presents. In many ways SOUTHCOM is an economy of effort theater with no major forces stationed there on a regular basis. In spite of this fact, there are strategic military objectives in the region that are supported by tactical level troops on almost a daily basis. While SOUTHCOM provides operational level control over these actions, this definition would not say that the skilled linking of these tactical operations to our national strategic interests is operational art until major ground forces are engaged in combat. Perhaps the definition should provide for a relative interpretation of "major forces," or delete the reference completely.

The focus on battle makes this definition of operational art more than a cybernetic process of linking the strategic and tactical levels with the ends, ways and means available. In essence, this genre of definition focuses us on a level of forces and an intensity of operations. To dig deeper into an understanding of today's definition of operational

art in the United States Army, it is important to go back to some of the historic roots of the theory.

Russian Operational Art

Aleksandr A. Svechin

Most American authors attribute the theoretical foundations of operational art to German and Russian theorists from the 1920's. These men were grappling with the failure of the military to achieve decisive results in World War I. Aleksandr A. Svechin, a Russian theorist, was one of the first to use this term in his book, *Strategy*. While he did not provide a formal definition of operational art, we can understand much about his thoughts by his use of the term.

Svechin saw operational art as establishing limits for the tactical canvas. To Svechin, operational art creates this framework by determining:

- ✓ the tactical missions
- ✓ logistic requirements
- ✓ the line of operation
- ✓ resources available
- ✓ time to be used for various missions
- ✓ what forces will be deployed
- ✓ nature of the operation.²⁴

Because operational art provides these bounds, Svechin concludes that, "tactical creativity is governed by operational art."²⁵ In other words, the tactical art available to the maneuver commander is constrained to the canvas assembled by the operational artist.

For Svechin, the operational level of war bridges the gap between strategy and tactics. This concept is carried forward into our doctrine today. He did not believe that operational art was just tactics on a larger scale, differentiating between the various levels by saying:

"Issues of fighting a battle constitute the content of tactical art, but operational art handles the issues of the moments of engagement and disengagement. Discussions of conducting an operation are matters for operational art, but determining the initial moment of an operation and its end point are strategic matters. In the same way the timing of going to war or getting out of it is a matter for politicians, not strategists."²⁶

Svechin saw the disconnect that occurred between these levels in World War I and the resulting tactical stalemate. He blamed the lack of connection on the absence of operational art. "Operational art was completely eliminated, while tactics grew to gigantic proportions and revealed its inability to achieve major results by tactical means alone."²⁷ Tactical battles which are not linked to a productive operational strategy are much less efficient than conducting an operation which is guided by operational art.

In summary Svechin saw operational art as the linkage from strategy to tactics which provided the bounds and direction for tactical battles. He did not tie the operational art to any size force, but did say that tactical actions that comprise an operation must be conducted in same theater and be directed towards the same end. Svechin also acknowledged that operations could begin meeting the definition of operational art and end up as a giant tactical battle if they are allowed to become a material battle of attrition.²⁸

Unfortunately Svechin did not talk about operational art and its application to many of the operations that the United States Army is expected to conduct in the next ten to twenty years.

Just what kind of operations can the Army expect to conduct in the near future? The 1993 version of FM 100-5 says that "Army forces may be committed on short notice to action anywhere in the world to confront and overcome a variety of difficult challenges."²⁹ Over the past four years these operations have ranged from helping to quell riots in Los Angeles after the Rodney King incident to disaster relief after Hurricane Andrew; from Operation Sea Angel (Bangladesh) to Desert Storm and Provide Hope. The missions range from peacekeeping, disaster relief, humanitarian mission assistance, counter drugs, nation building, region building, show of force, raid, assault, and possibly all out war. Svechin does not embrace the full range of military missions

the U.S. Army must deal with today, but on the other hand he did not reject them.

Svechin was focused on solving the problems of World War I, but he did not exclude operational art from other lesser uses. He applied operational art in a manner which would solve the World War I stalemate problem that plagued him. Perhaps the Army can do the same to problems it faces in the dawn of the twenty-first century.

V. K. Triandafillov

One of Svechin's contemporaries was V. K. Triandafillov. His study on operations in war was likewise focused on solving the problems encountered in World War I, including several observations on operational art. He recognized that in his time operational art was entirely dependent upon the skills of the commander.³⁰ While tactical art had databases that estimated logistic requirements and principles which governed the combat actions, operational art had none of this. As a result of this void the creation of a successful operational campaign was entirely dependent on the commanders intuition.³¹ (Today many of these calculations which require the "art" of the commander have been reduced to calculations which put them into the realm of the "science" of war rather than operational art.)³²

Triandafillov emphasized that in his view there were two parts of operational art. Part one was the bookkeeping side that is almost arithmetic in nature. This allowed the concentration of troops and material at the proper place on the front as well as providing for the sustainment of these forces. "The art of the leader is to calculate the operational significance of these changing situational elements correctly and to determine the correct material and personnel resources required to accomplish a given specific mission."³³ Triandafillov emphasizes that the commanders intuition must be tempered with "rational substantiation" if they are to be successful.³⁴

Operational art also includes a second category in which the commander selects the axis of the operation, the form of the blow, and the organization of the forces used to accomplish the mission. This is perhaps more of the "art" of operations than the former is.³⁵

Triandafillov, like Svetchin, was developing theory and doctrine to address the needs that faced his nation. Tactical art had been given much study and tactical battles were conducted in accordance with the established principles which governed it. This however, provided only the great expenditure of resources with little return on the strategic situation. Operational art provided the missing link that was so obviously absent during the painful campaigns of the first World War.

³⁶ Perhaps, if the suffering had not been as great, the linkage between strategy and tactics would remain tenuous today.

Triandafilov focuses on the immensity of the war which he experienced and has little to say of operational art in any other type of conflict.³⁷ This should be expected. If we look at our own military writings during the Cold War or after the Vietnam war we find most of our intellectual concentration is on the task that is most likely to, or most recently has consumed our attention. In the case of these two Russian writers, the problem they were struggling with, and was most threatening to the survival of their nation, was the possibility of another enormous land war across the plains of Europe.

The times in which these men wrote are almost inseparable from the conclusions they reached about operational art. They cannot be expected to have developed a conceptual framework for an issue which they had not, and did not expect to face. The young Soviet Republic was not concerned with the problems of Operations Other Than War (OOTW). The future was clearly that another conventional war was the challenge that they must be prepared to meet. Thus the Soviet writers have defined operational art in terms which apply within the framework of their time, and perhaps within the context of the Soviet/Russian way of war. While some have accepted the work of these authors as a theoretical framework for operational art, perhaps what we see instead is the doctrine of operational art. Theory has wide application and describes the very nature of war, but the concepts we

have examined here fit within a narrower band of doctrine, the application of theory to the Soviet way of war.

In this narrow window, operational art fits neatly in the theoretical construct provided by authors from the School of Advanced Military Studies (SAMS), located at Fort Leavenworth, Kansas. This school provides the most complete analysis of operational level warfighting of any course in the U.S. military schools system.

United States Operational Art

Dr. Schneider

Dr. James J. Schneider, on the faculty of the School of Advanced Military Studies, is a leading theoretician and author in the field of operational art. In the last chapter of his "Theoretical Paper number 4; Vulcan's Anvil:" Dr. Schneider lays out seven conditions (See Figure 3) that must be present in relatively comparable amounts in both enemy and friendly forces for operational art to exist.³⁸ These criteria limit the definition of operational art to the portion of operations which are conducted on a mobile battlefield by units of approximately corps size or larger.³⁹

PREEXISTENT CONDITIONS FOR OPERATIONAL ART	
1	WEAPON LETHALITY..... beyond smoothbore musket
2	CONTINUOUS LOGISTICS..... supports successive movement and sustainment
3	INSTANTANEOUS COMMUNICATION..... to control extended formations
4	OPERATIONALLY DURABLE FORMATIONbattle / maneuver indefinitely
5	OPERATIONAL VISION..... actions in space and time unified by common aim
6	SYMMETRICAL ENEMY..... trained, armed, equipped, structured, commanded
7	NATIONAL DEPTH.....(to wage war)continuous mobilization of men & material

Figure 3 Conditions For Operational Art

Almost anyone that the U.S. Army could be expected to fight today has firepower that has progressed beyond the lethality of the smoothbore musket. In the information age instantaneous communications are also available for a good majority of the world, although these communications are neither assured nor secure. So, criteria one and three in this model are particularly immaterial when considering operational art conducted today⁴⁰. If finding an adversary that meets criteria, two, four, six and seven are required, we may not see operational art conducted by the U.S. Army for some time.

OPERATIONAL ART

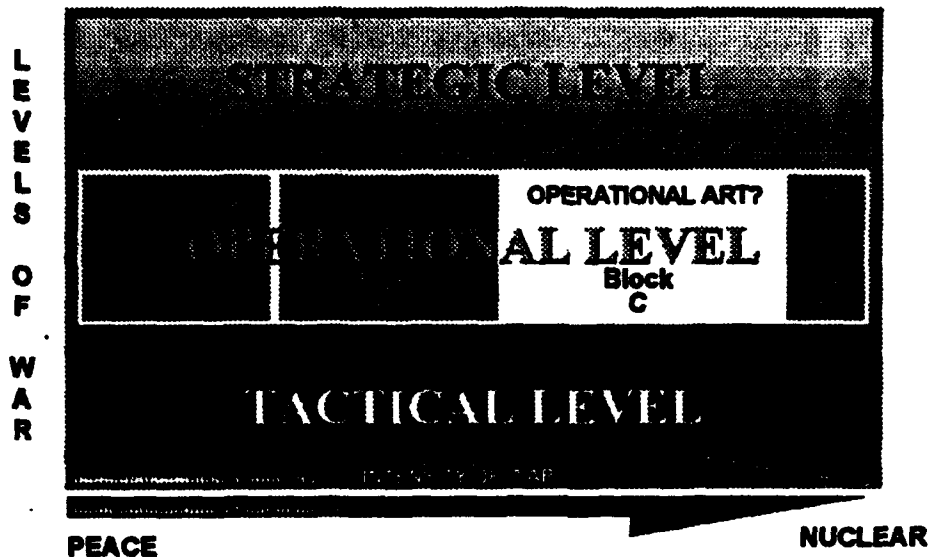


Figure 4 Operational Art

In the above diagram (Figure 4), Dr. Schneider's definition of operational art would fall into the block "C" portion of the graph, which represents the medium to high intensity end of conflict at the operational level of warfare. In this model, operations conducted in blocks A (Operations Other Than War OOTW), B (armed conflict), and D (nuclear war) are not considered operational art.⁴¹ Schneider believes the term operational art should not be used to describe the principles operating in these horizontal levels of conflict. His model is affirmed in Army doctrine in two major areas. Both call for major armed forces to be involved before an operation can be termed

*operational art.*⁴² Schneider calls these forces "operationally durable" and states that they "must be able to conduct a succession of battles and deep maneuvers indefinitely."⁴³ Doctrine also has incorporated his concept that the command structure must have an operational vision of the theater. FM 100-5 conveys this thought by saying "operational art requires broad vision"⁴⁴ This holistic vision enables the commander to sequence actions in space and time to achieve a common aim.

If one applies these criteria to recent conflicts, Great Britain in 1982 would be, by definition, unable to conduct operational art in the Falkland Islands. Britain's forces did not have continuous logistics and, if faced with an extended campaign, would soon have reached the end of her supporting lifeline. Her forces were not operationally durable in that at several times the deployed forces were vulnerable to decisive defeat, had they faced a more determined enemy. Nationally Britain had little depth to continue the war with either manpower or military materiel. Argentina was also lacking in that she had no operational vision for the defense of the Malvinas, could not move logistics forward to front line troops and was not a symmetrical enemy, in training or command, in comparison to the British forces as Dr. Schneider's model requires. (See Figure 5)

CONDITIONS FOR OPERATIONAL ART IN THE FALKLANDS		
	BRITAIN	ARGENTINA
1 WEAPON LETHALITY	YES	YES
2 CONTINUOUS LOGISTICS	NO	NO
3 INSTANTANEOUS COMMUNICATION	YES - TENUOUS	YES - LIMITED
4 OPERATIONALLY DURABLE	NO	NO
5 OPERATIONAL VISION	YES	NO
6 SYMMETRICAL ENEMY	NO/YES	NO/YES
7 NATIONAL DEPTH	NO	NO

Figure 5 Operational Art in the Falklands

The U.S. Operation Just Cause in Panama meets some of the criteria of this model, but it also does not meet this definition of operational art. Just Cause did not use operationally durable formations (most of the 26 simultaneous actions were distributed operations at battalion level and below) and the forces of Manuel Noriega were in no way a symmetrical enemy. Even Desert Storm becomes a questionable example of operational art when examined under these criteria. Dr. Schneider has narrowed the definition of operational art to the point that only total war can meet its qualifying factors; however, Dr. Schneider is not the only American with a definition of operational art.

Influences on American Style Operational Art

We can assume that our own definitions of operational art are flavored as well, by the times and culture in which they were written. Our recent attention on operational art as an army began in the early 1980's during the height of the Cold War. The United States Army at that time had been characterized as Eurocentric in focus. Weapons systems, doctrine, training and exercises all centered on the reinforcement of NATO and a land war through Central Europe.

In concentrating on the Soviet threat we discovered their doctrine of operational art and began to incorporate some of the operational thought into our own theory and doctrine. This direct transfer from Soviet to U.S. doctrine worked well. Much of this is due to the fact that we were symmetrical enemies focusing on the opposing sides of the same fight.

Parroting our doctrine after Soviet doctrine no longer works as the United States does not have the Soviet Union's anxieties and view of the world. Even the former Soviet states are not the Soviet Union and cannot directly adapt its doctrine of war. The United States today finds itself without a symmetrical enemy to shadow box. One of the results of this situation has been the freeing of military assets to address political problems that, prior to the breakup of the Soviet

Union, would have gone unresolved or been addressed with other elements of national power.

In effect for the United States, the brush has been removed from the old canvas. The artist's financiers, including the President, Congress and the American people, are tired of paying for classical paintings of Dante's Hell. They have moved and may never find the right place to hang that painting again. For now what they want to know is what else can the artist paint which they can use right now. The people who pay the bills and control the purse would like variations portrayed on the canvas ranging from large art deco pieces, impressionist, surrealist, to modern, maybe even some sculpture. Of course, at some time, they may ask for an old master again, but not right now.

In adapting the Soviet style of operational art, the United States Army met the need of the time. But now, as the world's only superpower, it is time to establish our own genre of operational art, a version that is truly American, just like Norman Rockwell did with his paintings.

Current trends in the use of the term Operational Art

Reviewing the birth of the term operational art, in the perturbations that followed World War I, and examining some of the

theoretical framework that has been built on that foundation, brings us to the current state of affairs. Theory is only a pedantic discussion, unless it can be applied to the situation we find ourselves in. For this reason it is important to see how the current authors are understanding and using the term operational art. Many of the writings from the early 1980's reflect the use of the term in official Army doctrine and equate operational art with the operational level of war. The most recent writings, however, published since the breakup of the Soviet Union and the dissolution of a bi-polar world, are the most likely to have application for the future.

One paper examines the role of operational art in military operations against the Sioux Indians in 1876 and seems to typify the opinion of many current scholars.⁴⁵ In it the author, James W. Shufelt (a graduate of the Army's Advanced Military Studies Program), examines the U.S. Army campaign against doctrinal and theoretical definitions of operational art. In his conclusions, he determines that the campaign does not meet all of the criteria in the theoretical construct provided by Dr. Schneider. However, it did conform to the intent of the theory, if the theory was adapted to the situation. Most importantly, as a result of his analysis, he determined that the core of "operational art involves deliberate analysis of a situation and determination of the most effective and appropriate way to utilize available forces to accomplish the assigned mission".⁴⁶

What the author affirms is the superiority of the cybernetic linkage involved in operational art (that ties strategic goals to tactical actions), over the physical model that tests what size units are involved, what equipment they must have, and other palpable matters. By adapting the theoretical model to the particular situation, he demonstrates a concept of operational art that is more flexible than Dr. Schneider's theoretical construct and current doctrine. The impact of this adaptive approach to defining operational art is the broadening of its applicability to the full range of military missions. As the author states:

"this modern concept can be applied to...conflicts involving relatively small forces. In addition... operational art has a legitimate role in the design of military campaigns against unconventional foes...."⁴⁷

Other authors also embrace the cybernetic concept of operational art without the physical limitations enumerated in Dr. Schneider's model. The greatest number of advocates for this position are at the low conflict end of the military missions continuum (Figure 2). Gordon C. Bonham, a graduate of the School of Advanced Military Studies, in his monograph on Special Operations Forces states that, "The nature of operational art...will vary according to its position along the continuum.... Peacetime competition compresses the operational level and narrows the gap between strategy and tactics until they

almost touch.”⁴⁸ He advocates a “common criteria to provide a standard for the study of operational art regardless of the size of the canvas.”⁴⁹

Towards a New Model

The doctrinal description found in FM 100-5 provides the intellectual basis for a theoretical model of operational art that is applicable across the continuum of military actions. It states that the operational commander must effectively answer three major questions that provide the foundation for conducting operational art. These questions are:

COMMANDERS QUESTIONS - ENDS / WAYS / MEANS...

What military conditions will achieve the strategic objectives?

What sequence of actions will produce these conditions?

How should resources be applied to accomplish that sequence of actions?

Figure 6 Ends / Ways / Means

These questions are fundamental to military operations at any level of conflict and are equally as important in the conventional use of military power as they are in a disaster relief or peacekeeping mission.

Together, the answer to these questions tells the ends, ways and means of a campaign.

The first question requires the commander to envision how the situation should look when his actions are completed. This can be called the military ends or end state. A suitable end state produces the military portion of the desired strategic results. A clear and concise end state becomes the foundation on which the sequence of tactical actions is built.

The second question, requires a commander to visualize the ways in which he will accomplish his ends. To do this he arranges the component parts of an operation in time and space. These parts, when properly timed and conducted, result in the desired military end state. Each of these parts separately define tactical operations, while together they form a military campaign.

Finally the commander must decide what means at his disposal are best suited to accomplish each step he has arranged to accomplish his objective end state. In a high intensity conflict the means available to an operational commander may be corps and armies. In a peacetime contingency the more suitable means may be a Special Forces team or a company of Military Police. Thus the ways and means produce the ends. (See Figure 7)

LINKING ENDS - WAYS AND MEANS

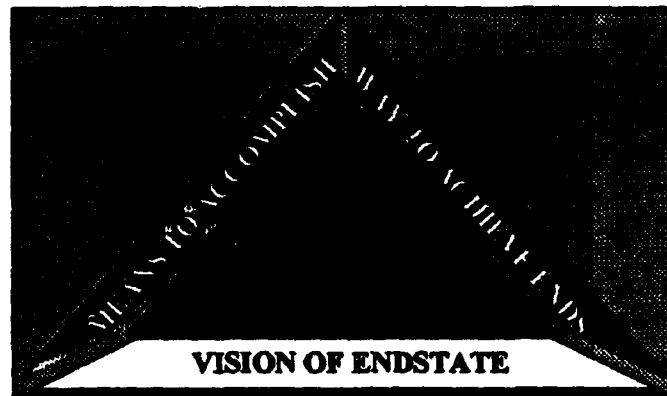


Figure 7 Linking Ends, Ways, Means

U.S. Army doctrine provides the triangular model of the ends, ways and means which links the political/strategic needs (or ends) to the employment of military forces. Dr. Schneider's approach provides a checklist to further clarify the use of operational art. However, this checklist constricts the employment of operational art to a narrow range of military operations. A useful set of criteria must be adaptable to the wide variety of military missions that are expected over the next decade. Below is an example of versatile criteria which expand the varieties of "canvas" on which operational art is feasible.

PROPOSED CRITERIA (FOR OPERATIONAL ART TO FUNCTION)	
1	Strategic level must have established strategic or national goals for the operational commander.
2	Operational commander must be given sufficient latitude to conduct operations.
3	Sufficient assets must be allocated to conduct distributed and extended operations.
4	Logistics and communications systems must be capable and structured to support and control distributed operations.
5	End state cannot be accomplished in a single tactical action. (Operations must be extended in time and or space.)
6	The operational commander and his staff must be mentally and physically capable of planning and executing campaigns.

Figure 8 Proposed Criteria For Operational Art

The above figure does not define operational art, rather it recognizes the broad environment in which it is already practiced. In this model Dr. Schneider's seven conditions for operational art are collapsed to four criteria (numbers 3-6 above) which are applicable across the entire continuum of military operations.

In the winnowing of Dr. Schneider's construct, several of his basic conditions for operational art to exist were eliminated or modified for inclusion in this proposed model, including:

- ⇒ - Advanced Weapon Lethality**
- ⇒ - Instantaneous Communications**
- ⇒ - Continuous Logistics**
- ⇒ - Symmetrical Enemy**

Weapon lethality (greater than the musket) was eliminated from this model for several reasons. First, this criteria would not be likely to exclude any future conflicts. In that the intent of the model is to look at future army operations, even an operation against a typical Junior High class could involve greater firepower than the musket. The firepower available to rioters on the streets of Los Angeles in the 1990 riots was most likely greater than that of one of Napoleon's Corps. Secondly, this criteria focuses inappropriately only on the destruction that can be delivered by military forces. It excludes the great amount of suasion that military forces can exert without firing a weapon. This power can be as effective as overt force in achieving operational results in support of national goals. Finally, this measure is relatively meaningless in insurgency/counter insurgency operations. It's inclusion in the original model was to ensure a certain level of lethality and distribution over the battlefield.⁵¹ Lethality is not a valid yardstick to measure the effectiveness of linking ends, ways and means throughout the spectrum of military missions. At the low intensity end of the Spectrum of Conflict, casualties may actually be counterproductive to the national

aims. Distribution of the enemy in space and time likewise is not dependent on the lethality of weapons alone, but a whole range of conditions that add little to the use of the proposed model.

Instantaneous communications and continuous logistics were both modified and included in the proposed model. While near instantaneous communications and near continuous logistics are always preferred, they are not central to the conduct of operational art. Communications that can provide coordinating instructions in time to be acted on in concert with supporting actions are believed to be sufficient in this mode. Furthermore, logistics which will just barely support the operation meets the requirement for operational art. Success is not measured by how or how often the supplies get to the operating force; having sufficient stocks at the proper time and place to accomplish the mission is what counts.

Lastly, the concept of operational art requiring a symmetrical enemy was deleted. While symmetrical opponents make for an entertaining boxing match or football game, it is not to be sought in war. U.S. Army doctrine states that, "battle should not be a fair fight between two relatively equal foes... Army forces seek to overwhelm the enemy".⁵² American operational art should not be locked away for the next decade awaiting the emergence of a symmetrical enemy. The Vietnam War provides an excellent example of a strong, asymmetrical enemy where this new doctrine could have been applied. Operational

art must be practiced in every operation by pitting American strengths against an enemy's weakness. The concept of requiring symmetry for operational art should die with the concept that the best way to win a battle is to line up ranks of soldiers and to fight with linear tactics.

In addition to borrowing from Dr. Schneider's construct for operational art, this model integrates the requirement from Army Doctrine (FM 100-5) to link ends, ways and means.

Linking the cybernetic concepts from FM 100-5 with the physical requirements from Dr. Schneider's model creates a durable model with great flexibility. On the command and control side the model begins with the strategic aims to which all operational art should be directed. This author finds it difficult to characterize any operation as operational art if it does not meet the nation's strategic needs. Similarly, in a nation where the political leaders are unable to derive a national strategic policy, the operational military commanders will have difficulty constructing a campaign that will be operational art. The military commander may execute superior tactics but, without a strategy to link military actions to, the results from these campaigns may be hollow and short lived.

This model also realizes that even when a national strategy exists, the operational commander may have so many political constraints that he has insufficient latitude to accomplish his mission. For the military commander to conduct operational art he must be able

to wield his tools in a manner that is both suitable to contribute to the goals set by strategy, and in a way that is appropriate for the instrument he is given.

Not only must the operational commander be provided a strategy and the latitude to conduct operations, he also must be supplied with sufficient assets to accomplish the mission. At times these assets may be rather modest, such as a Special Forces team or a civil affairs battalion. At other times it may require heavy armored divisions to provide the muscle needed for a particular campaign. The requirements should be suited for the mission and desired ends .

Conclusion

In conclusion this paper has looked at the birth of operational art theory in the travail after W.W.I. The Russian experience in the war, as well as their unique geopolitical situation, left an indelible mark on the theories they produced. The Soviet theory was then exported to the United States during the height of the Cold War. The doctrine needed little if any adjustments to fit U.S. Army needs well during the standoff of forces in central Europe

The monograph also notes that since the collapse of the Soviet Union and the bi-polar world the paradigm for military operations has changed. No longer are two massive coalitions with army groups and

armored corps facing each other across a central plain. The new model reflects a decrease in global tensions and force sizes while at the same time increasing regional tensions. Now military forces are smaller and no longer forward deployed. Without the burden of having to be a deterrent force or an immediate reinforcement unit against a Soviet attack, U.S. military force packages have become more flexible in their ability to be employed. As a result, missions which would not have been resourced during the Cold War have become the bread and butter operations of the post Cold-War era. These new missions include disaster relief, nation building, peace keeping and peace making, regional stability operations. While none of these missions is entirely new, the scope of U.S. military involvement in these operations breaks new ground.

While the nature of U.S. military operations has shifted the doctrine of operational art has not kept pace. The primary reason for this failure to adjust has been biases in place when the U.S. theory of operational art was penned. The U.S. Army accepted as theory the writings of the Soviet Army when these manuscripts were not theory at all, but doctrine. As doctrine, it was not universal truths but a translation of theory by the Soviet situation, geography, politics and way of war.

It is time we strip away the cultural and situational "baggage" on the theory of operational art and establish a model that is universal in

thought and is valid in a wide range of operations. This theory can then be adapted into doctrine that is applicable to particular national and environmental situations.

This monograph provides one possible solution for a theory of operational art that goes beyond the major Western conflicts of the last century. It provides the conceptual means for linking the expected new missions of the future/21st Century to the national strategy to ensure the greatest potential for success. While the theory of operational art cannot ensure success, it does eliminate a wide range of potential errors in the conduct of military operations (it does not promise that the art done will be good art).

It is time to move off the "cusp" of operational art and plow ahead into the application of the art in the American way of war.⁵³ To move forward requires the redefinition of operational art in Army and Joint Forces doctrine and theory. Adapting the model presented in this monograph would better prepare U.S. forces for the missions they face now and in the future.

ENDNOTES

¹James J. Schneider, "Theoretical Paper No. 3, The Theory of Operational Art" unpublished paper (School of Advanced Military Studies, Fort Leavenworth), second revision 1 March 1988, 25.

²Schneider, "Theoretical Paper No 3," 3.

³Articles representing the low intensity spectrum of operational art include: M. L. Smith, "War on Drugs - Can an Operational Artist Help Win It?," (Leavenworth: Command and General Staff College, May 1989); Howard L. Dixon and Charles M. Ayers, "Operational Art in Low Intensity Conflict," (Langley: Army - Air Force Center for Low Intensity Conflict, 1987) and Gordon C. Bonham "Special Operations Forces: The Combination Tool IN the CINC's Operational Toolbox," (Leavenworth: School of Advanced Military Studies, May 1991). Representing the high intensity end of operational art are articles by: P. D. Kopf, "Operational Art and the Marine Expeditionary Force," (Newport: Naval War College, June 1993) and Henry S. Scharpenberg, "U.S. Armed Forces and the Operational Level of War-- Are We Prepared to Win?," (Leavenworth: School of Advanced Military Studies, May 1988).

⁴U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1986), 10.

⁵An excellent discussion on this issue can be found in a School of Advanced Military Studies monograph by Major John M. House entitled "Do Doctrinal Buzzwords Obscure the Meaning of Operational Art?" (Leavenworth: 1989).

⁶Aleksandr A. Svechin, Strategy (Minneapolis: East View Publications), 311.

⁷Paul H. Herbert, Leavenworth Paper No. 16 Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, (Fort Leavenworth, Combat Studies Institute), 96.

⁸Strategic objectives may also come from a coalition of nations. In this event the word national in this definition would be replaced with coalition. In coalition operations the coalition acts similar to a nation in developing its interests.

⁹Elements taken from Joint Pub 1-02, Department of Defense Dictionary of Military and Associated Terms. (Washington: Joint Chiefs of Staff, 1 December 1989), 350.

¹⁰U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1993), 6-1

¹¹Office of the Chairman, Joint Pub 1-02 Department of Defense Dictionary of Military and Associated Terms. (Washington: The Joint Chiefs of Staff, 1989), 264

¹²FM 100-5, (1993), 6-2.

¹³Svechin STRATEGY, 70.

¹⁴FM 100-5, (1993), 6-1

¹⁵An example is the battle of the Somme in which over a million British French and German troops died during a six month period of time. In spite of the tremendous casualties the only real impact on both sides was the loss of men and materiel.

¹⁶Webster's New Collegiate Dictionary. (Springfield: Merriam Webster, 1986), 796.

¹⁷Webster's, 62.

¹⁸Carl Von Clausewitz, On War, (Princeton: Princeton University Press, 1976), 102.

¹⁹FM 100-5 (1993), 6-2.

²⁰FM 100-5 (1993), v.

²¹U.S. Army, FM 101-5-1, Operational Terms and Symbols, Initial Draft, (Washington: Department of the Army, January 1994), 171.

²²Sun Tzu, The Art of War, (Edited by James Clavell, New York: Dell) 15.

²³Christopher N. Donnelly, Red Banner: The Soviet Military System in Peace and War, (Coulson: James's Information Group, 1988), 214.

²⁴Svechin, Strategy, 69.

²⁵Svechin, Strategy, 68.

²⁶Svechin, Strategy, 290.

²⁷Svechin, Strategy, 273.

²⁸Svechin saw the "material battle" as a battle in which both men and huge amounts of equipment and ordnance are expended in a toe to toe confrontation. He references the battle of the Somme in which Foch lost 2000 men a day. This type of battle loses all operational characteristics once the initial surprise is lost. Soon the battle becomes a "noria" in which endless lines of material and men are brought to the front to be thrown into battle (noria is an endless conveyor like what is found on a dredge.)

²⁹FM 100-5, 1-1.

³⁰V. K. Triandafillov, "Nature of the Operations of Modern Armies" (Leavenworth: Reprinted in School of Advanced Military Studies: AMSP Course 1, Foundations of Military Theory, original 1929), 205.

³¹*Ibid.*,

³²Triandafillov's observations were based on the old Russian Army which had not organized for modern war. pg. 205

³³Triandafillov, 205.

³⁴*Ibid.*,

³⁵*Ibid.*,

³⁶Both Svechin and Triandafillov refer to tactical art as well as operational art. In tactical art the commander goes beyond the science of tactics by using his developed insight to achieve a limited tactical goal.

³⁷V. K. Triandafillov, "Nature of the Operations of Modern Armies" (Leavenworth: Reprinted in School of Advanced Military Studies: AMSP Course 1, Foundations of Military Theory, original 1929).

³⁸The seven criteria are found on pages 65-66 of "Theoretical Paper #4, Vulcan's Anvil" by Dr. Schneider, (Leavenworth: School of Advanced Military Studies, June 16, 1991).

³⁹James J. Schneider, classroom discussion, Seminar 3, Lesson 1-25 School of Advanced Military Studies, Fort Leavenworth, Kansas, August 1993.

⁴⁰Dr. Schneider also provides a list (below) of what he views are the characteristics of operational art. These characteristics are closely related to the conditions required for operational art. "Vulcan's Anvil" pg. 30.

CHARACTERISTICS OF OPERATIONAL ART
DISTRIBUTED OPERATIONS
THE DISTRIBUTED CAMPAIGN
CONTINUOUS LOGISTICS
INSTANTANEOUS COMMAND AND CONTROL
OPERATIONALLY DURABLE FORMATION
OPERATIONAL VISION
DISTRIBUTED ENEMY
DISTRIBUTED DEPLOYMENT

⁴¹Dr. James J. Schneider, classroom discussion, Seminar 3, Lesson 1-26, August 1994.

⁴²Dr. James J. Schneider, "Theoretical Paper #4, Vulcan's Anvil," (Leavenworth: School of Advanced Military Studies, June 16, 1991), 55.; FM 100-5, 6-2.

⁴³Schneider, "Vulcan's Anvil," 55-56.

⁴⁴FM 100-5, 6-2

⁴⁵James W. Shufelt Jr., "Operational Art in the Sioux War of 1976," (Leavenworth: School of Advanced Military Studies, May 1, 1993).

⁴⁶Shufelt, 41.

⁴⁷Shufelt, 40.

⁴⁸Gordon C. Bonham, "Special Operations Forces: The Combination Tool in the CINC's Operational Toolbox," (Leavenworth, School of Advanced Military Studies, 1991.), 9,39.

⁴⁹Bonham, 8.

⁵⁰FM 100-5, 6-2.

⁵¹Schneider, "Vulcan's Anvil," 65.

⁵²FM 100-5, 2-17.

⁵³Schneider, "Vulcan's Anvil" 6.

BIBLIOGRAPHY

Government Publications

- HQ. Department of the Army. FM 100-5. Operations. Washington D.C.: Department of the Army, June 1993.
- HQ. Department of the Army. FM 100-5. Operations. Washington D.C.: Department of the Army, May 1986.
- HQ. Department of the Army. Draft FM 100-23. Peace Operations (Version 6). Washington D.C.: Department of the Army, January 1994.
- HQ. Department of the Navy. FMFM 1-1 Campaigning. Washington D.C.: Headquarters United States Marine Corps, January 1990.
- HQ. United States Training and Doctrine Command. Draft FM 100-7. The Army In Theater Operations. Ft. Monroe: Department of the Army, July 1990.
- HQ. United States Training and Doctrine Command. TRADOC Pam 11-9. Blueprint of the Battlefield. Ft. Monroe: Department of the Army, April 1990.
- Office of the Chairman. Joint Pub. 1-02. Department of Defense Dictionary of Military and Associated Terms. Washington D.C.: The Joint Chiefs of Staff, December, 1989.

Books

- Brown, Fredrick J. The U.S. Army in Transition II. Landpower in the Information Age. Washington: Brassey's, 1993.
- Clausewitz, Carl von. On War, edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1989.
- Cohen, Elliot A and John Gooch. Military Misfortunes: The Anatomy of Failure in War. New York: The Free Press, 1990.
- De Landa, Manuel. War in the Age of Intelligent Machines. New York: Zone Books, 1991.
- Donnelly, Christopher N. Red Banner. The Soviet Military System in Peace and War. Coulsdon, England, Jane's Information Group, 1988.
- Hastings, Max and Simon Jenkins. The Battle for the Falklands. New York: W W Norton & Company, 1983.
- Herbert, Paul H. Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5. Operations. (Leavenworth Paper No. 16), Fort Leavenworth: Combat Studies Institute, 1988.

Naisbitt, John and Patricia Aburdene. Megatrends 2000: Ten New Directions for the 1990's. New York: William Morrow and Company, 1990.

O'Bellance, Edgar. Malaya: The Communist Insurgent War, 1948-60. Hamden, Archon Books, 1966.

Simpkin, Richard E. Human Factors in Mechanized Warfare. Oxford: Brassey's, 1983.

Svechin, Aleksandr A. Strategy. (Edited by Kent D. Lee) Minneapolis: East View Publications, 1992.

Sun Tzu. The Art of War. (Translated by Samuel B. Griffith), London: Oxford University Press, 1963.

Sun Tzu. The Art of War. (Edited by James Clavell), New York: Dell, 1983.

Warden, John A. III. The Air Campaign: Planning for Combat. Washington D.C.: National Defense University Press, 1988.

Webster's Ninth New Collegiate Dictionary, Springfield: Merriam-Webster, Inc., 1986.

Winter, J.M. The Experience of World War I. New York: Oxford University Press., 1989.

Unpublished Dissertation, Theses, and Papers

Ayers, Charles M. "Operational Art in Low Intensity Conflict." Air Force Center for Low Intensity Conflict, Langley AFB, VA. September 1987.

Bonham, Gordon C. "Special Operations Forces. The Combination Tool in the CINC's Operational Tool Box." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1, 1991.

Cox, Robert D. "India and the Operational Art of War." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1, 1991.

Crain, William F. "The Heart of Operational Art: Translating Strategic Objectives into Tactical Missions." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1990.

Cushman, John H. "Thoughts for Joint Commanders." (Privately printed by author) Annapolis, 1993.

Dixon, Howard L. and Charles M. Ayers. "Operational Art in Low Intensity Conflict" Army-Airforce Center for Low Intensity Conflict, Langley AFB, VA, September 1987.

Dubik, James M. "A Guide to the Study of Operational Art and Campaign Design (A Draft Suggestion)". School of Advanced Military Studies, Fort Leavenworth, Kansas, May 30, 1991.

Estilow, Rex A. "Campaign Planning: The Search for Method". School of Advanced Military Studies, Fort Leavenworth, Kansas, May 6, 1991.

- Giantz, David M. "The Soviet Conduct of War" Soviet Army Studies Office, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, 30 March 1987.
- Houss, John M. "Do Doctrinal Buzzwords Obscure the Meaning of Operational Art?" School of Advanced Military Studies, Fort Leavenworth, Kansas, June 16, 1991.
- Jones, Michael G. "The Operational Level of War: A Primer." U. S. Army War College, Carlisle Barracks, PA, April 16, 1988.
- Kohler, Jeffery B. "Peace-Enforcement: Mission, Strategy, and Doctrine." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1, 1993.
- Kopf, Peter D. "Operational Art and the Marine Expeditionary Force (MEF)" Naval War College, Newport RI, June 18, 1993.
- Matheny, Michael R. "The Development of the Theory and Doctrine of Operational Art in the American Army, 1920-1940" . . . School of Advanced Military Studies, Fort Leavenworth, Kansas, March 22, 1988.
- Riley, Don T. "The Evolution of Operational Art--The Reconquest of Burma, 1943-1945" . . . School of Advanced Military Studies, Fort Leavenworth, Kansas, May 29, 1987.
- Rios, Leon H. "The Linkage of the Strategic and Operational Levels of War." School of Advanced Military Studies, Fort Leavenworth, Kansas, May, 12, 1986.
- Schneider, James J. "Theoretical Paper NO. 3: The Theory of Operational Art." School of Advanced Military Studies, Fort Leavenworth, Kansas, March 1, 1988.
- Schneider, James J. "Theoretical Paper NO. 4: Vulcan's Anvil: The American Civil War and the Emergence of Operational Art." School of Advanced Military Studies, Fort Leavenworth, Kansas, June 16, 1991.
- Schneider, James J. "Theoretical Paper NO. 5: The Eye of Minerva: The Origin, Nature and Purpose of Military Theory and Doctrine." School of Advanced Military Studies, Fort Leavenworth, Kansas, undated.
- Sharpenberg, Henry S. "U.S. Armed Forces and the Operational Level of War--Are We Prepared to Win? ." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 6, 1988.
- Shufelt, James W. Jr. "Operational Art in the Sioux War of 1876." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1, 1993.
- Thornton, Skip "A Working Theory of Operational Art in Modern War." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 16, 1989.
- Triandafilov, V. K., "Nature of the Operations of Modern Armies," Reprinted in School of Advanced Military Studies: AMSP Course 1, Foundation of Military Theory. (Ft. Leavenworth, KS.).
- Tucker, Terry L., "Peacekeeping In Europe: How can the United Nations do it?", School of Advanced Military Studies, Fort Leavenworth, Kansas, May 1, 1993.
- Tukhechevsky, Mikhail, "New Problems in Modern Warfare," Reprinted in School of Advanced Military Studies: AMSP Course 1, Foundation of Military Theory. (Ft. Leavenworth, KS.).

Wansley, William J. "American Art: Toward an American Theory of Peace." School of Advanced Military Studies, Fort Leavenworth, Kansas, May 13, 1992.

Wentzel, Seaton R. "Operational Art and Low Intensity Conflict" U.S. Army War College, Carlisle Barracks, PA. March 23, 1987.

Wojdakowski, Walter "Today's Operational Challenge: Defining Victory in Operations Short of War." School of Advanced Military Studies, Fort Leavenworth, Kansas, April 19, 1988.

Wurmser, David and Nancy Bearg Dyke. "The Professionalization of Peacekeeping", United States Institute of Peace, Washington, August 1993.