

Askaris, Asymmetry, and Small Wars: Operational Art and the German East African Campaign, 1914-1918

**A MONOGRAPH
BY
Major Kenneth P. Adgie
Infantry**



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

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14. ABSTRACT This monograph analyzed whether Lieutenant Colonel Paul von Lettow-Vorbeck used operational art to defeat British forces in the East African campaign of World War I. British forces were superior in quantity of men and equipment, but slow moving and heavily dependent on secure lines of communication. Lettow-Vorbeck's forces maintained an asymmetric advantage in mobility, knowledge of terrain, and responsive logistics. An analogy was suggested that the U.S. Army in the twenty-first century is similar to British forces in 1914, and the nation's future adversaries could potentially use Lettow-Vorbeck's unconventional warfare and asymmetric tactics woven together in a comprehensive campaign plan. This monograph reviewed the origins and characteristics of operational art. The Army's emerging doctrine, Student Text 3-0, Operations defines operational art as the use of military force to achieve strategic goals through the design, organization, integration, and conduct of theater strategic, campaigns, major operations, and battles? and serves as the entry point for discussion. A synthesis of Shimon Naveh and James Schneider's theories revealed five primary characteristics of operational art and was used as the criteria to evaluate the research question. The five characteristics were: operational objectives, operational maneuver, disruption, operational approach, and operational logistics. The East African campaign was analyzed from the perspective of Lettow-Vorbeck linking his strategic aim of forcing the British to commit forces to a secondary theater of operations to his limited resources. The four-year campaign was divided into three phases based on Lettow-Vorbeck's operational objectives and the correlation of forces. Significant tactical vignettes were examined as part of an over arching campaign plan. Finally, this monograph considered how the U.S. Army would fight an asymmetric enemy in a similar environment. This monograph concluded that Lettow-Vorbeck employed operational art to defeat British forces in East Africa. Lettow-Vorbeck established operational objectives that achieved the strategic aim of forcing the British to expand their commitment in East Africa, but where achievable by his tactical units operating in resource constrained environment. The Schutztruppe's use of operational maneuver permitted freedom of action, placed his units at positions of advantage, and rarely pursued a decisive engagement unless the odds of victory were clearly to their advantage. Lettow-Vorbeck's operational approach transitioned between offensive and defensive operations, and integrated conventional, unconventional, positional, and mobile warfare. The British superiority in numbers forced Lettow-Vorbeck to focus on the disruption of the British system versus the destruction of their forces. Finally, Lettow-Vorbeck's operational logistic maintained durable formations in a hostile environment capable of conducting deep and sustained operations even through the Royal Navy blockade imports.					
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Abstract

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This monograph analyzed whether Lieutenant Colonel Paul von Lettow-Vorbeck used operational art to defeat British forces in the East African campaign of World War I. British forces were superior in quantity of men and equipment, but slow moving and heavily dependent on secure lines of communication. Lettow-Vorbeck's forces maintained an asymmetric advantage in mobility, knowledge of terrain, and responsive logistics. An analogy was suggested that the U.S. Army in the twenty-first century is similar to British forces in 1914, and the nation's future adversaries could potentially use Lettow-Vorbeck's unconventional warfare and asymmetric tactics woven together in a comprehensive campaign plan.

This monograph reviewed the origins and characteristics of operational art. The Army's emerging doctrine, *Student Text 3-0, Operations* defines operational art as the "use of military force to achieve strategic goals through the design, organization, integration, and conduct of theater strategic, campaigns, major operations, and battles" and serves as the entry point for discussion. A synthesis of Shimon Naveh and James Schneider's theories revealed five primary characteristics of operational art and was used as the criteria to evaluate the research question. The five characteristics were: operational objectives, operational maneuver, disruption, operational approach, and operational logistics. The East African campaign was analyzed from the perspective of Lettow-Vorbeck linking his strategic aim of forcing the British to commit forces to a secondary theater of operations to his limited resources. The four-year campaign was divided into three phases based on Lettow-Vorbeck's operational objectives and the correlation of forces. Significant tactical vignettes were examined as part of an over arching campaign plan. Finally, this monograph considered how the U.S. Army would fight an asymmetric enemy in a similar environment.

This monograph concluded that Lettow-Vorbeck employed operational art to defeat British forces in East Africa. Lettow-Vorbeck established operational objectives that achieved the strategic aim of forcing the British to expand their commitment in East Africa, but where achievable by his tactical units operating in resource constrained environment. The *Schutztruppe*'s use of operational maneuver permitted freedom of action, placed his units at positions of advantage, and rarely pursued a decisive engagement unless the odds of victory were clearly to their advantage. Lettow-Vorbeck's operational approach transitioned between offensive and defensive operations, and integrated conventional, unconventional, positional, and mobile warfare. The British superiority in numbers forced Lettow-Vorbeck to focus on the disruption of the British system versus the destruction of their forces. Finally, Lettow-Vorbeck's operational logistic maintained durable formations in a hostile environment capable of conducting deep and sustained operations even through the Royal Navy blockade imports.

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Section I. Introduction

It is essential to relate what is strategically desirable to what is tactically possible with the forces at your disposal.

- Field Marshall Montgomery¹

Asymmetry becomes very significant, perhaps decisive, when the degree of dissimilarity creates exploitable advantages.

- ST 3-0, Operations²

The United States Army enters the twenty-first century without a current peer competitor, but conscious of the threats associated with being the world's lone superpower. The 1990s have been anything but peaceful and small-scale contingencies and peace operations remain the Army's most likely mission for the next decade. Potential adversaries, who understand the lessons of the Gulf War and Somalia, will avoid conventional methods of warfare and seek an asymmetric advantage. To them, victory is not an absolute requirement. Extending the conflict to degrade the nation's political will, force the U.S. to commit greater resources or withdrawal, or simply not losing are all potential end states for an inferior yet determined enemy. Army doctrine anticipates future threats using complex terrain to conceal their forces as they concentrate and disperse, avoiding decisive battles, and attempting to control the tempo of operations by targeting U.S. vulnerabilities.³ Abhorrence to casualties, an over reliance on logistics and secure lines of communication, and the need for roads, bridges, and ports to facilitate the movement of motorized and mechanized forces are glaring weaknesses of the Army. A superior force fighting a mobile enemy in difficult terrain is not a new challenge, but one that has occurred throughout the history of warfare. The East African campaign of World War One suggests many parallels to twenty-first century warfare, but none more important than the use of operational art in an asymmetric environment.

An assassin's bullet fired in the summer of 1914 provided European leaders the excuse to plunge the world into chaos. The Great War introduced industrial age warfare on a grand scale dwarfing all previous conflicts in its scope, manpower involved, and degree of butchery.

Most historians focus on the static trench warfare of the Western Front where mass armies conducted tactical engagements, and men fought an unfair contest against material. Eastern Front history focuses on immense tracts of land where huge armies enveloped and destroyed each other in a test of Clausewitz's theory of *Vernichtungsschlacht*. Secondary theaters such as the Dardanelles, the Middle East, and the Balkans are woven into the history, but only as background scenery that briefly distracted leaders from their primary task at hand. The history of the First World War also centers on the actions and decisions of individuals. Men such as Kitchener, Joffre, Haig, and Ludendorff have volumes written about their every action, while little work has focused on commanders at lower echelons.

The German East African campaign began 8 August 1914 and concluded 13 November 1918 - two days after the official armistice. The belligerents fought in four different countries and over terrain that included the snow capped peaks of Mount Kilimanjaro, deserts, and disease-laden jungles. The Allied pursuit of German forces covered nearly three thousand miles, and introduced the African continent to armor vehicles, air to ground bombing, amphibious landings, and naval engagements on the Indian Ocean and Lake Tanganyika. Lieutenant Colonel Paul von Lettow-Vorbeck's force of German soldiers and African *Askaris* never exceeded ten thousand men, and during the final two years less than a few thousand strong, fought an Allied force ten times its size. Although the total commitment of Allied soldiers exceeded three-hundred thousand men over the four-year campaign, Lettow-Vorbeck was never captured, his army never defeated, and his capitulation occurring only after the announcement of Berlin's unconditional surrender.

Unfortunately, most historians categorize Lettow-Vorbeck's exploits as guerrilla or insurgent warfare. Neither of these stereotypes is technically accurate, nor do they adequately describe the complexities of the campaign.⁴ Lettow-Vorbeck, commander of all military forces in German East Africa, understood that his position in a secondary theater of war placed

significant constraints on the conduct of his operations. His contribution to Germany's war effort did not require victory, but preventing Britain from transferring colonial forces from Africa and using them in other theaters.⁵ Britain's command of the sea and garrisons in South Africa, Rhodesia, and India meant that German forces would always be outnumbered and forced to remain on the strategic defense. However, the aim of forcing Britain to commit resources in East Africa could not be accomplished from a defensive posture.

Lettow-Vorbeck's struggle against a numerically superior enemy was not a succession of small raids against British supply depots, but a coherent and logically linked campaign plan that embraced operational art. Throughout the campaign, Lettow-Vorbeck's strategic aim remained the same: force the British to expend resources that would otherwise be sent to Flanders. As the British desire for a decisive victory grew, so did their troop strength and commitment to this marginal theater of operation. He maximized his inferior force's unique capabilities by designing an operational campaign plan that focused on British vulnerabilities and the theater's varying terrain as a canvas that supported his design. This campaign moved through three distinct operations. The first phase began at the outbreak of the war and was characterized by conventional offensive and defensive operations vicinity the border between German and British East Africa. Company sized units conducted distributed operations throughout the depth of British East Africa attacking railroads, supply depots, and garrisons, disrupting their logistical system and forcing the British commander to outpost his frontier. As the British increased their troop strength, the Germans conducted defensive operations at critical times and at key terrain by increasing the density of forces at select points across the battlefield. This operation ended in February 1916 when German forces could no longer defend against the numerically superior British Army.

The second phase of the campaign began March 1916 with the British conducting their first large-scale penetration into German East Africa. Lettow-Vorbeck's forces withdrew into the

country's interior and used a combination of conventional defenses, limited objective attacks, and unconventional warfare to attrit British forces. Mobile German forces fought a British Army dependent on roads, vehicles, and a secure line of communication. The restrictive terrain and lack of infrastructure created an asymmetric advantage for Lettow-Vorbeck. He combined conventional and unconventional tactics, shifted between maneuver and positional warfare, and focused on the disruption vice destruction of British forces. German attacks and diseases such as malaria and tsetse fly fever created a synergistic effect greater than any single action or component. This phase ended November 1917 after a six hundred mile pursuit through jungles and desert, Lettow-Vorbeck's army crossing into Portuguese East Africa, and the British War Office declaring victory.

The final phase of the campaign began 25 November 1917 when German forces crossed the Rovuma River into Portuguese territory. Their fragile supply situation forced Lettow-Vorbeck to reduce his force to two thousand soldiers, and their only offensive acts were against Portuguese supply depots or in self-defense. Allied forces had an overwhelming numerical advantage, and Lettow-Vorbeck focused on the movement and preservation of his force vice enemy attrition. Lettow-Vorbeck exploited the tension that exists between attrition and maneuver, and how it relates to decisive battle, force preservation, and his own operational vision. The Allies pursued the Germans the length of Portuguese East Africa before Lettow-Vorbeck reversed course and moved north through the rugged Pere Hills, re-entered German East Africa, and attacked the British colony of Northern Rhodesia - a distance of fifteen hundred miles. This operation and the entire campaign ended on 13 November 1918 when a captured courier brought news of Germany's surrender.

Student Text 3-0, *Operations* defines operational art as “the use of military force to achieve strategic goals through the design, organization, integration, and conduct of theater strategies, campaigns, major operations, and battles.”⁶ Operational art creates synergy between

time, space, and military forces to achieve a strategic objective. It recognizes what is possible at the tactical level, what must be accomplished to shape future battles, and what sequencing of actions promote the most benefit. The United States Army's doctrinal embrace of operational art occurred in the early 1980s as soldiers stared across the plains of Europe and prepared for a Soviet attack. Theorist and military leaders have spent the last twenty years debating in professional publications the characteristics and nuances of operational art, its origins, and what theories of war provide the cognitive underpinnings that translate operational art into reality. Theorists disagree whether the shift from classical strategy to modern war and operational art occurred with Napoleon, Hooker's Army at Chancellorsville, or Svechin and Tuchachevsky's theory of Soviet Deep Operations.⁷ What is constant is the overt or implied notion that operational art is inexplicably wedded to industrial age weapons, massed armies, and battlefields where terms such as front, rear, and depth have a measurable value. Unfortunately, most contemporary scholars agree that linear conflicts against a conventional enemy are the least likely employment scenario for U.S. forces. If the majority of our intellectual energy is spent reviewing well-known and traditional history at the expense of lesser known, but no less valuable campaigns that explore non-linear operations in complex terrain, then the associated theories and mental models are incomplete. Clausewitz wrote that a viable theory of war could not conflict with reality.⁸ Continuously framing operational art in a context that only considers large-scale industrialized forces fighting symmetrical enemies on a predictable battlefield limits the education process. Worse, by ignoring campaigns that most closely resemble tomorrow's battlefield, the risk of conflicting with reality increases.

To prove that Lettow-Vorbeck used operational art to defeat Allied forces in the German East African campaign several questions must be answered. First, the evolution of classical battle to modern war, and the emergence of operational art are reviewed. Operational art's two components, the physical action and the intellectual direction, are explored from the perspective

of several theorist and *Student Text 3-0*. A synthesis of both components presents five critical characteristics relative to Lettow-Vorbeck's campaign and the study of contemporary operational art. Second, Lettow-Vorbeck's four-year campaign will be studied. His use of operational art – linking tactical action to strategic aims – will be examined through tactical vignettes as part of a campaign plan. Finally, this study suggests that the U.S. Army in the twenty-first century is similar to British forces in 1914, and the nation's future adversaries could potentially use Lettow-Vorbeck's irregular warfare and asymmetric tactics woven together in a comprehensive campaign plan.

The criteria used to assess the validity of the research question are a synthesis of Shimon Naveh's and James Schneider's theories that produce five critical characteristics of operational art.⁹ First, did Lettow-Vorbeck establish operational objectives that achieved the strategic aim of forcing the British to expand their commitment in East Africa, but where achievable by his tactical units operating in resource constrained environment? Second, did Lettow-Vorbeck use operational maneuver to vary the density of forces and gain a local advantage at specific times and geographically critical points on the battlefield? Third, did Lettow-Vorbeck strive to induce disruption into the British system, vice destruction of British forces? Fourth, did Lettow-Vorbeck's operational approach exploit the tension between offensive, defensive, conventional and unconventional operations to create a synergistic effect on the British campaign that was significantly greater than the sum of individual tactical actions? Fifth, did Lettow-Vorbeck develop and execute operational logistics as a fundamental component of his campaign plan, and transform the colony's resources into a form useable by tactical units permitting successive operations?

Section II. Operational Art

Tactics, focusing entirely on the mechanical dimension of warfare, totally lacked the cognitive tools needed to merge and direct the numerous engagements toward attaining the strategic aim. On the other hand, strategy, leaning primarily on abstract definitions of aims and policies, lacked the ability to translate its intentions into mechanical terms.
-Shimon Naveh¹⁰

Art. The power of performing certain actions especially as acquired by experience, study, or observation. A branch of learning. Systematic application of knowledge or skill in effecting a desired result.
-Webster's Dictionary¹¹

Art is creation. It begins with an idea produced by an individual harnessing a vision of what is possible. Many saw the Sistine Chapel's domed roof as part of a building, yet Michelangelo saw a great canvas that had not yet told the story of Genesis. Art moves through

the realm of the possible, but is restrained by the laws of science. The Pharaohs created some of the most awe inspiring structures the world has ever seen, but the pyramids owed as much to geometry and engineering as to the architect's dream fulfilled in the sands of Egypt. Art contains two diametrically opposed but complimentary components. The intellectual component visualizes the desired end state, how each part compliments the others, and how the whole is balanced and greater than the individual pieces. The physical component bows to science, confronts the vision with the realities of the environment, yet provides the experienced artist with the tools needed to continue his work. Art without a physical component is shapeless, ephemeral, and theoretical. Art without intellect is an imbroglio of parts that is neither functional, nor enjoyed by others. Similar to traditional mediums, operational art contains both intellectual and physical components. Yet, like Dalai, beauty is in the eye of the beholder.

This section examines five critical characteristics of operational art. First, the relationship between strategy and tactics and the development of operational objectives is analyzed. Second, operational art's primary physical expression of operational maneuver is discussed within the construct of fragmentation, simultaneity, and tempo. Third, the operational artist's requirement to differentiate between disruption of the enemy system vice destruction of the enemy force. This concept explores the intellectual direction that distinguishes operational art and tactics. Fourth, operational approach synthesizes the physical and intellectual components, creating the commanders vision of how to attack the enemy's center of gravity. The complimentary and reciprocal relationship between offensive and defensive operations creates a variety of action by combining conventional and unconventional warfare, and varying the emphasis between maneuver and positional warfare. Finally, operational logistics gathers the resources of the nation and transforms them into a form useable by tactical units, and provides a continuous flow of men and material.

The increasing complexity of battle created a need for a level of warfare between strategy and tactics. Caesar's legions would have recognized the tactics used on eighteenth century battlefields. The classical style of battle reflected the limited size of armies, the theater's scope, and the finality of a decisive victory. The mass of the army moved and fought as an entity whose goal was to confront and defeat the enemy in a single battle. The combat power of the army was focused at the decisive point, and the commander could view his force as a whole and control its action. Battles were concentrated, short, and lethal.¹² The French Revolution and the rise of a nation-in-arms presented Napoleon with an army that dwarfed his opponents. The Emperor maneuvered his corps along concentric lines of operation, but maintained the classical paradigm of concentrating them in time and space for the decisive battle. Some historians have credited Napoleon's later campaigns as ushering in the era of modern war, but that belief is contested.¹³

The Napoleonic era changed the dimensions of warfare and set the stage for revolutionary changes that continued throughout the nineteenth century.¹⁴ Previously, war was between two sovereigns, each side controlled by a single commander, and climaxed with a single decisive battle. Napoleon's threat forced the other European nations to begin conscription, form alliances, and fight across the entire continent. The ever-increasing size of armies required the mobilization of the state's resources to support the conflict. Strategy now linked the battles occurring at the front with the industrialized rear area that generated resources needed to continue operations. The Industrial Revolution's introduction of the steam engine provided the means to move huge armies, while the telegraph permitted rudimentary control of these forces. Finally, the evolution of the shoulder fired weapon from musket, to conical bullet, rifled barrel, breach loading, and magazine fed weapon increased lethality. This combination of nation-in-arms, political alliances, and technology changed the nature of battles and engagements from a

concentric, linear battlefield to one that wielded distributed armies maneuvering throughout the depth of the theater.¹⁵

The American Civil War and the Wars of German Unification ushered in a new epoch decidedly different from Napoleonic warfare. Trains provided strategic mobility to armies, but had limited application in the tactical and operational realms. However, its contribution to the logistical sustainment of widely distributed field forces was immense. Armies could now wage war indefinitely as long as their lines of communication were secure. Decisive battle was no longer viewed as the sole purpose of armed forces, but the retention or denial of freedom of action was paramount. This freedom of action permitted the momentum of the army to be vectored toward an enemy's vulnerability. Coordinating the sequential and simultaneous actions of several armies through the depth of the enemy's battle space exploited the synergy between formations.¹⁶ Unfortunately, the ability of commanders to control the armies did not evolve in proportion. The vast majority of early twentieth century military leaders and theorists did not recognize that the increased size of armies, the growing volume of the battlefield, and technological advances fundamentally changed warfare. The nearly unlimited resources of the state generated replacements to offset what classical battle defined as a crushing defeat. Decisive battles had lost their importance because a nation's armed forces could no longer be defeated in a single battle.

Student Text 3-0, *Operations* defines the operational level of war as the “the level at which campaigns and major operations are conducted and sustained to accomplish strategic objectives within the theater of operations.”¹⁷ The use of the word level illustrates a marked separation between the strategic and tactical arenas, and places aims and resources in a hierarchal context. Conversely, Army doctrine defines operational art as the “use of military force to achieve strategic goals through the design, organization, integration, and conduct of theater strategic, campaigns, major operations, and battles.”¹⁸ This definition is less prescriptive, and

describes a bridge that links strategy to tactics and converts the abstract qualities of political aims into a sequenced collection of tactical action.¹⁹ By definition, operational art must consider the ends desired by the political leadership, how the aim is accomplished at least cost to the nation in terms of resources and lives, and what instruments the commander has at his disposal to accomplish the mission. The operational artist uses these tools – ends, ways, and means – to design a new reality using military force to achieve a political objective. The intellectual component comprised of ends and ways joins the physical component of means in a three dimensional environment defined by time and space.

Operational art's two components, the physical action and the intellectual direction, not only create an internal tension within its system, but have caused theorist to approach operational art from different perspectives. Simpkin, Schneider, and Student Text 3-0, *Operations*, emphasize the physical action by describing the relational factors, capabilities and desired traits, and qualitative processes that distinguish operational art from tactics and strategy. The physical action has a decidedly techno-centric caste. Lind and Naveh examine operational art from the intellectual direction attempting to distinguish operational options available to the commander, and provide a guide to manipulate the fundamentals of operational art. Both approaches are indispensable to understand operational art as a whole.

The first critical characteristic of operational art is the development of operational objective and understanding the cognitive tension between strategy and tactics. Operational art's intellectual direction begins with determining and understanding the political and strategic aims. This provides the context in which the commander defines the needed time, space, and resources to accomplish the aim with military force.²⁰ Consideration must be given to the scope of the aim – unlimited war as France faced in 1914, or limited such as the U.S. intervention in Panama. Identification of the opponents aim is also necessary. In Vietnam, the two main belligerents had different aims, and this dictated the amount of resources committed and the level of risk

accepted. From the aim, the commander creates operational objectives. Mao referred to this as “politics with bloodshed”, and it begins the process of arraying attainable goals for military forces.²¹ These objectives must be logically linked, properly sequenced, and attainable with the resources at hand. If the resources are insufficient then the operational objective must be changed or sequenced to occur in a later phase. Desert Storm’s initial force allocation only permitted a defense of Saudi Arabia. When the aim was changed to liberate Kuwait, the operational objectives changed and General Schwartzkopf asked and received additional assets. The movement of VII Corps into theater took several weeks and changed the operational timeline, necessary maneuver space, and logistical demands.

Tactical units are the commander’s tools in operational art. Every tool has unique capabilities and limitations, and function to its fullest potential when properly employed. The operational commander’s macro perspective of the theater creates the opportunity to employ tactical units in the most effective manner. The operational objectives, the link between tactical units and the strategic aim, must be realistic in the assignment of purpose and consider the correlation of forces. Simply, attainable objectives must be set. T.E. Lawrence’s Arab forces faced the dilemma of being inferior in quantity of men and quality of arms. Any campaign plan based on conventional offensive or defensive operations would have failed. He resolved this dilemma by using his forces unique capability – mobility – to gain a local superiority at critical times and places. Lawrence reconciled the strategic aim with his tactical resources, and designed an operational campaign that was limited in scope, but used an asymmetric advantage to achieve a disproportionate result.²²

Operational objectives provide the tactical unit their purpose and definition of success. It sequences these tactical actions in a logically linked program that arrays friendly strength against enemy weakness. It prioritizes finite resources to accomplish the most critical purposes, and decides what level of risk is acceptable.²³ Operational objectives shroud the chaos of the

tactical battle with an overarching concept that guides each engagement in a systemic fashion allowing the synergistic effect to be greater than merely the sum of each component. Operational objectives are greater than winning a single battle.

The second characteristic of operational art is disruption. Disruption of the enemy system instead of destruction of the enemy armed forces required a fundamental shift for military leaders in the evolution and intellectual embrace of operational art. The exponential increase in the size of the battlefield lessened the importance of any single battle in the overall strategic aim. Clausewitz, a theorist whose tactical writings were never intended to become strategic dogma, guided a generation of military leaders. Ludendorff, Rommel, and Westmoreland each claimed numerous tactical victories where the destruction of the enemy's force was identified as the aim, to a varying degree accomplished yet each ended with the bitter taste of defeat. Why? Does operational art provide the commander with a guide that prevents "a set of disconnected engagements with relative attrition the only measure of success?"²⁴

Naveh's writing shatters the mythology of Clausewitz's battle of destruction. The Prussian's musings dictated, with catastrophic results, the military action in Europe for over a century. *On War*, especially Book Four, focuses on the destruction of the enemy force as the principle objective, the engagement being the principle means to achieve the objective, and the greatest successes obtained when a single great battle is fought and won.²⁵ Naveh views this as a distortion of reality that relegates strategy to the needs of tactics, and fails to reconcile ends, ways, and means.²⁶ Huge armies and the state's ability to continuously generate men and material made a single decisive battle less likely to produce strategic results. Hence, Naveh argues the means – men and material – needed to destroy an entire enemy state would exhaust both belligerents before a decision was rendered. Naveh also views this maximum expenditure of national treasure wasteful and time consuming. Political and strategic aims rarely require the absolute destruction of the enemy force, but only the accomplishment of the friendly aim.

Operational art's cognitive linkage of aim to action places in perspective the amount of effort needed to be expended. Rommel's assigned aim in North Africa was never the destruction of the British Eighth Army, but his tactical outlook propelled him to a campaign that over stretched his resources.²⁷ Operational art balances resources against purpose within a framework of time and space. Its requirement of shaping the environment and sequencing tactical action to make that action more effective is best achieved not through grandiose dreams of destruction, but the plausible reality of disruption.

Disruption is not theoretical alchemy, but an approach that seeks to degrade the entire enemy system allowing tactical successes to accumulate and achieve operational objectives. The theoretical renaissance that stressed disruption instead of destruction sprung from the ashes of World War One. The Soviet's abysmal performance against the Germans, and the lessons of the Warsaw campaign encouraged military leaders to reevaluate the traditional paradigms of warfare. Many historians credit A.A. Svechin with recognizing the need for a distinct category of war that surpassed tactics yet served strategy.²⁸ Decisive victories no longer guaranteed strategic results. A concept was needed that influenced the entire enemy system without necessarily involving the tactical demands of destruction. A system consists of a cybernetic component that provides orientation, purpose, and feedback to the remainder of the system, and the structural components that conduct the action and interact with each other. Military leaders and headquarters provide the cybernetic control, purpose, and orientation. Multiple subordinate formations compose the system, interact through mutual support, and maneuver to accomplish their objective. Naveh believes where components interact are a military system's main weaknesses.²⁹ Attacking the enemy system at its natural friction points is the essence of disruption.

Disruption deprives the enemy the ability to react to a dynamic situation and direct subordinate units in the accomplishment of the objective, and allows tactical units to face a degraded enemy.³⁰ How is disruption accomplished? First, distributed operations exploit deep

and inter-battle maneuver to maintain freedom of action and choose the time and place of battle.

³¹ Second, disruption of the enemy's cybernetic function prevents the enemy from creating the synergy needed between components, and synchronization between arms. Isolated and unsupported units are defeated piecemealed. Third, the use of deception conceals friendly aims and intentions, and causes an improper disposition of enemy forces. Once committed, the enemy must struggle through friendly action and the inevitable friction to regain the initiative. Finally, disruption as a concept is immensely useful when an inferior force strives to maintain the initiative. Lawrence's Palestine campaign focused on limited objective attacks where relative superiority was achievable, and the Turkish enemy was denied a symmetric target.³²

The third critical characteristic of operational art is operational maneuver, and is the primary physical component of operational art. Schneider defines operational maneuver as "the relational movement in depth that maximize freedom of action for the destruction of the enemy's capacity to wage war."³³ The concept of freedom of action detaches the tactical units from the historical requirement of decisive battle, and provides the cognitive link between strategy and tactical action, namely achieving the aim or denying the enemy his aim. Mao viewed freedom of action as a critical pre-condition to retain the initiative in a campaign, and used this concept as a guide in manipulating the density of forces to gain a relative superiority.³⁴ Operational maneuver does not implicitly require a numerical or qualitative superiority across the entire battlefield, but the creation of a local superiority at specific points throughout the depth of the battlefield. The operational commander manipulates density to increase the tactical units likelihood of success. Increasing the number of forces in a given area creates a local superiority. Conversely, decreasing the density of forces in other areas requires the operational commander to assume risk.

If operational maneuver is the defining physical manifestation of operational art, requires freedom of action throughout the depth of the enemy's area, and manipulates density of forces to

achieve a local superiority, then a tension between the tactical and operational level occurs in defining concentration. Tactical concentration emphasizes the massing of combat power against a single enemy component in a relatively small geographical area. Operational concentration emphasizes the massing of combat power against multiple components simultaneously. An *a priori* fact is striking multiple components simultaneously requires friendly forces to focus on different components. This tension reveals one of the fundamental differences between tactics and operational art. In tactics, the general action focuses on a specific enemy unit, capability, or geographical location. In operational art, the enemy is viewed as a complete system and operational objectives are designed to disrupt the synergy between components.

Operational maneuver flourishes when combined with the concepts of fragmentation, simultaneity, and tempo.³⁵ Fragmentation is the opposite of synergy. It seeks to deprive the enemy intellectual and physical cohesion. Fragmentation does not seek to hammer the enemy, but force its to separate from within. Action directed at the enemy system delays his ability to understand dynamic situations, and prevents developing the necessary synergy between subordinate formations. Physical cohesion is denied by conducting operations against not just the enemy mass, but also the space between the mass. The enemy's future maneuver occurs in this unoccupied space, and the insertion of friendly mass between adjacent units prevents synchronization. Insertion of friendly mass between hierarchical levels such as force generating support units and operational reserves prevents the enemy from exploiting the depth of his battle space, or the ability to project into friendly battle space. The use of both dimensions of space, front and depth, increase the friction points that can be influenced, separates formations to prevent mutual support and reinforcement, and prevents the enemy from either withdrawing or moving reserves forward. Fragmentation emphasizes space. Simultaneity emphasizes time.

Simpkin credits Tukhachevskii as the first theorist to explore the concept of simultaneity, defining it as “bringing the largest number of troops into contact at the same time” within the

context of operations over a broad or deep front, and the interaction of the turning and holding force.³⁶ Tukhachevskii's work embraced the synergy of action between components. Webster's dictionary provides two interesting definitions of simultaneity. The first is "having the quality or state of occurring at the same time" and the second is "the presentation of different views of the same object in one work of art," such as Egyptian portraits depicting both a profile and a full face in the same etching presenting the same person from two perspectives.³⁷ The former expresses concurrent action and readily translates to tactical units synchronizing combat power against an enemy. The latter definition is more complex, and aptly describes Tukhachevskii's vision of time, synergy, and operational art.

Simultaneity harnesses the action of multiple components into a single system that strikes the enemy from different perspectives to accomplish three purposes. First, simultaneity establishes a common time scale to assist the commander in coordinating the action of dispersed units possessing different characteristics and functions. Second, simultaneity links the entire system not just effects. By coordinating the action of subordinates spread across a theater of operations the commander increase the interactive bond between units. Third, simultaneity encompasses all friendly action occurring within a single enemy decision cycle. Where tactical action seeks concurrent activity to heighten the effect, simultaneity seeks to shape the enemy across its battle space and cause disruption before the enemy reacts.³⁸ The concept of simultaneity increase in importance when conducting non-contiguous, non-linear operations where the synergy of operations is not cemented by common geographic references, but through time and purpose.

Student Text 3-0 defines tempo as the "rate of military action."³⁹ Though this is a simplistic definition, the concept of tempo is critical in operational maneuver. Tempo is not solely rate of movement, but the relational movement of all the components, physical and cybernetic, in a system focused on an operational objective. Tempo is restrained by physical

considerations such as mobility, rate of acceleration, and logistical preparedness, but also command functions such as information processing, development and distribution of orders, and timings of decisions. However, tempo is only relative when discussed in relation to enemy action. Its purpose is to exceed the enemy's ability to understand and react to the changing environment, and increases through simultaneous operations, avoiding unnecessary battles, and maintaining decision-making at the most appropriate command level.⁴⁰ Making quantitatively better decisions faster than the enemy, designing and executing an operation in which each component's speed is linked to the entire system, and exploiting the cumulative effects achieves what Simpkins refers to as the "ruthless reinforcement of success."⁴¹

Operational approach is the fourth characteristic of operational art and is "the manner in which a commander attacks the enemy center of gravity."⁴² It arrays the friendly force's unique capabilities and advantages against the enemy to create an asymmetric advantage. Applying force directly against the enemy strength requires a favorable force ratio, superior technology and equipment, or when a decisive outcome is time sensitive. The indirect approach avoids the enemy strength and focuses on its vulnerabilities. This approach accepts decisive battle only on favorable terms, seeks to achieve a local superiority against a valuable target, or sequences several decisive points in which the sum degrades the enemy. Operational approach is the creative force in campaign design. By assigning components a purpose, allocating areas of operations, and harmoniously blending different and complimentary capabilities to achieve the operational objective, the commander creates different war fighting methods. Variations of offensive and defensive operations include the use of unconventional forces or missions, balancing maneuver and attrition, or mobile and positional warfare.

Offensive operations seek decisive results by imposing the commander's will on the enemy. Defensive operations are temporary, allowing the commander to shape the theater, create a relative superiority in specific areas, and permit future offensive operations.⁴³ Both operations

stress initiative, tempo, and defeating the enemy. A significant difference involves the purpose and aim. The offense seizes the operational objective and has a positive aim; the defense denies the enemy his objective and has a negative aim.⁴⁴ Blending both in operational art requires an understanding of the relationship between the holding and striking force and a conceptualization of space. Offensive operations, from tactics to operations, require a smaller holding force denying the enemy reposition ability, and facilitating the striking force's penetration and freedom of action. Defensive operations require a larger holding force to shield the attacker's blows, fix the enemy in a static state, and provide the time and maneuver space for the striking force to disrupt the enemy system. Additionally, an inverse relationship between front and depth occurs in offensive and defensive operations.⁴⁵ The offense requires the operational artist to decrease the linear frontage assigned to the force and allocate an area of operations deep enough to permit fragmentation and disruption of the enemy control system. Defensive operations require greater frontage, but still anticipate and execute deep operations to break up the enemy attack and regain the initiative.

The fifth characteristic of operational art is operational logistics, and it is the process of planning and executing the movement and sustainment of forces in pursuit of military objectives.⁴⁶ The operational artist ensures that his tactical tools are finely honed and operating at their peak performance. When a tool is used it loses its edge, and must be deliberately returned to its highest level. The erosion of the tool is expected and predictable, requiring the artist to plan for periodic pauses. Schneider considers logistics "the final arbiter of operations" because it dictates the tempo of operations, where operations can be conducted; the depth into enemy territory the fight can be pressed, and permits the flexibility needed for freedom of action.⁴⁷ Operational logistics is greater than simply keeping tactical units supplied. It must anticipate the force's needs on a timescale greater than the initial operation. Operational logistics provides the connectivity between national resources and the tactical units. National

resources enter a theater at a centralized point, or are produced by the industrialized rear of the nation. Both enter the military supply system configured in bulk that facilitates efficient shipping to theater but ineffective distribution to users. Operational logistics package resources in a base of operations, and projects needed supplies forward along lines of communication. The establishment of supply depots close to tactical units reduces movement times, but the location must be balanced against the enemy threat. A network of supply depots connecting along secure lines permits continuous operations, but has a finite reach. The echelonment of theater supply bases must occur before any operation or failure occurs.

The intellectual direction of operational art begins with understanding the relationship of the strategic aims and available tactical resources, and developing operational objectives that satisfy the former and are achievable by the latter. Disruption destroys the synergy between the enemy's components by focusing on the natural friction points in the system. It allows the tactical units to face a degraded enemy without demanding the resources necessary for destruction. Operational maneuver, the physical component of operational art, maximizes freedom of action through relational movement, and harnesses space and time to achieve its aim. Operational approach combines these broad, yet critical concepts into a mosaic that exploits capabilities, protects weaknesses, maximizes the influence of terrain, and array forces to achieve a relative superiority. Operational logistics tethers forces to a base of operations, but creates durable formations capable of successive operations. Without it, failure occurs. The *Schutztruppe* used these five characteristics to force their quantitatively superior enemy to fight an asymmetric battle that the British were neither physically nor mentally prepared to fight.

Lettow-Vorbeck was a man in the middle of a maelstrom. Blind in one eye, surrounded by his enemies, he was a Joint Force Commander in a theater of operations twice as large as Germany. His force was barely two thousand strong, comprised of 246 German officers and non-commissioned officers with the remainder being *Askaris* – Africans serving in the German Army.

His men were armed with vintage rifles, he had no artillery, and the Royal Navy ensured resupply was improbable. Lettow-Vorbeck remained undaunted and envisioned a campaign that harnessed his meager resources to force the British to expend men and material in East Africa. His initial operational objectives – ports, railroads, and garrisons – would force a British reaction. As the British force increased so did the German’s operational approach: attacks, mobile defenses, raids, ambushes, and a slow withdrawal extracted a toll on British endurance. While his companies were distributed across the theater, Lettow-Vorbeck focused on establishing supply depots along lines of communication, sowing crops hundreds of miles distant but where he thought he would be fighting in a few months, and teaching civilians and his soldiers how to make boots, uniforms, quinine from bark, and gasoline from coconuts. Lettow-Vorbeck’s operational campaign plan evolved with his enemy, the terrain, and his resources, but his aim remained constant during four years of fighting.

Section III. The East African Campaign

So long as we continue to resist, so long the enemy must pour resources into

Africa and thus weaken his reinforcements in Europe. We were a knife in his side, and the more we turned it, the more he bled.

*Lettow-Vorbeck*⁴⁸
January, 1918

Paul von Lettow-Vorbeck was the son of a Prussian General, but his career was not a traditional Junker career. He was a member of the German General Staff when he deployed as part of an international force sent to China to quell the Boxer Rebellion in 1900. This was followed by duty in German South West Africa as adjutant to General Trotha and the brutal crushing of the Herero Rebellion. Working with British, Boer, and native forces provided a unique perspective and appreciation of the differences between the fields of Europe and the jungles of Africa. Shot and blinded in one eye he was invalided back to Germany by way of German East Africa. His career took another twist when assigned as commander of a *Kriegsmarine* battalion at Wilmershaven. This presented Lettow-Vorbeck an opportunity to appreciate the capabilities of small vessels, littoral operations, and the firepower available from the sea. In January 1914, Lettow-Vorbeck returned to German East Africa as the military commander. His small force of two hundred Germans and less than two thousand *Askaris* distributed across the colony in sixteen companies was designed to secure the European settlers not fight a war. War clouds on the horizon prompted Lettow-Vorbeck to begin an immediate reconnaissance of the German colony, and establish a training regime for the willing but unready *Schutztruppe*.⁴⁹

Potential enemies surrounded German East Africa. To the north, British East Africa and British Uganda connected by the Mombasa port and Ugandan railroad that ran from the Indian Ocean to Lake Victoria. To the west lay Lake Victoria and Lake Tanganyika, the two largest fresh water lakes in the world. The former separated the two British colonies, the latter separated Lettow-Vorbeck's western flank from the Belgium Congo and most of British Rhodesia. Lake Tanganyika, over four hundred miles long and between ten and thirty miles across, covered most of the western border. Germany, Britain, and Belgium each had a ferry service operating on the

lake. To the southwest, lay British Rhodesia and Nyasaland, and to the south lay Portuguese East Africa.⁵⁰ German East Africa's six hundred mile eastern border was the Indian Ocean controlled by the Royal Navy. Mount Kilimanjaro dominated the border between British and German East Africa, and spewed forth-smaller ridges, valleys, and draws that presented both attacker and defender numerous options and challenges. The country's interior was a mixture of fertile highlands, disease laden river valleys and jungles, dry savannah, and low-lying coastal plains. The countries two largest cities resided on the Indian Ocean. Tanga, the northern port city and terminus of the German Northern Railway that stretched 270 miles from the Indian Ocean to the foothills of Kilimanjaro, resided on the British-German border. Dar es Salaam, the colony capital, resided half way down the coast and controlled the Central Railway. This rail line connected the capital city to Lake Tanganyika – a distance of 760 miles. Its inaugural opening celebration was scheduled for 6 August 1914.

Britain declared war on Germany August 4, 1914 and word quickly passed around the globe. Germany had five overseas colonies: Kia-Chow in China, Togoland, German South West Africa, Cameroon, and German East Africa.⁵¹ British foreign policy viewed these detached outposts as valuable and worthy objectives. Publicly, their seizure prevented German surface raiders from using them as ports, and protected neighboring colonies from future Hun invasions. Privately, Britain saw these colonies as choice territory that added to their overseas holdings, and could prove useful as bargaining chips at the peace table.⁵² On 8 August 1914, the cruisers *Astrea* and *Pegasus* entered the Dar es Salaam port, fired the opening salvo of the war, and destroyed the German wireless tower. The Great War had come to Africa.

Fifteen hundred soldiers of the King's African Regiment garrisoned British East Africa. British war aims focused on securing their colony, allow the export of raw materials, eliminate German raiders from the Indian Ocean, and conquer German East Africa for use in peace negotiations or profit. The means available to both sides was equal at the war's outset, but

Lettow-Vorbeck realized that his force could only increase through recruitment while the British had numerous regiments postured throughout the hemisphere. Lettow-Vorbeck's plan required a disparate force ratio if he was to succeed in his aim. His analysis of the aim reconciled with tactical resources available is best described in his own words:

It was to be considered that hostile troops would allow themselves to be held only if we attacked, or at least threaten the enemy at some sensitive point. It was further to be remembered that, with the means available, protection of the colony could not be ensured even by purely defensive tactics, since the total length of the land frontier and coast line was about equal to that of Germany. From these considerations, it followed that it was necessary, not to split up our small available forces in local defenses but on the contrary, to keep them together, to grip the enemy by the throat and force him to employ his forces in self defense.⁵³

Lettow-Vorbeck developed several operational objectives to accomplish his aim. First, the interdiction of the Ugandan railroad that was critical to landlocked Uganda, British troops in the interior, and the Mombassa port. This would force the British to commit troops to protect an exposed vulnerability. Second, the British must be prevented from using Mombassa as a naval base. Third, Tanga and Dar es Salaam must be secured. If the British seized the ocean terminus of the Northern or Central Railway than the enemy could introduce and sustain forces in German East Africa indefinitely. Finally, economy of force objectives throughout the remainder of the colony: preventing Belgium from crossing Lake Tanganyika and landing ground forces on the colony's western flank, preventing British Rhodesia from threatening a two front war, and securing the countries interior to ensure a continuous flow of men and logistics.⁵⁴

Lettow-Vorbeck's theater design allocated forces and areas of operation to accomplish these operational objectives. Major Kraut, Lettow-Vorbeck's most experienced and proficient leader, was assigned his colony's Northern Railway as a base of operation with a line of operation projecting into British East Africa, the Ugandan rail line, and Mombassa. Major General Wahle, a retired German officer visiting his son, was assigned the task of maintaining the lines of communication and logistics around the Central Railway, and controlling the movement of supplies throughout the theater. Count Falkenstein was assigned the southwest

region. Lieutenant Commander Zimmerman of the German Navy was assigned Lake Tanganyika and its three German vessels. He was to prevent the free movement of Allied troops and supplies either attacking the western border, or moving by ferry from Uganda to South Africa. Finally, Captain Max Loof, Commander of the *Koenigsberg*, conducted raiding operations against British shipping in the Indian Ocean. Lettow-Vorbeck never gave Loof instructions, nor would have Loof accepted any. The *Koenigsberg* conducted operations for a year without any detailed coordination with German land forces.⁵⁵

The British envisioned a Napoleonic decisive battle where mass and superior firepower would overwhelm the Germans. Their campaign plan specified securing Tanga as a base of operations; proceed along the Northern Railway destroying pockets of resistance, then turn south thru the interior of German East Africa until they reached the Central Railway. The British would then repeat the process heading east toward Dar es Salaam. This campaign plan would accomplish both of Kitchener's war aims: bring the entire colony under British control, and deny German raiders their ports.⁵⁶

The British bombardment of Dar es Salaam on 8 August 1914 prompted Lettow-Vorbeck to move several companies to that region. The British took no further action, and the *Schutztruppe* defended the port by emplacing dummy minefields with empty drums and logs. Lettow-Vorbeck used the lull in operations to prepare the theater for an extended conflict. His biggest concern was logistics and how to sustain a distributed force across difficult terrain. Lettow-Vorbeck was convinced that the effort required transporting and supplying a company in Africa equated to the effort needed to supply a division in Europe.⁵⁷ To facilitate his operation, Lettow-Vorbeck directed the building of roads from the rail lines to supply depots, and the *Schutztruppe* adopt the colonialist method of using native carriers vice pack animals or mechanical transport.⁵⁸ This decision, not taken by the British until the third year of the war, had far reaching consequences. Lettow-Vorbeck also conducted extensive reconnaissance of the road

network vicinity Tanga and Dar es Salaam. Small villages and plantations lined both railways and owned predominantly by retired German soldiers. This proved a boon to the *Schutztruppe* in terms of manpower, recruitment, safe havens, and supply depots.

A few isolated incidents occurred between 8 August and 2 November 1914. At the outset of the war, Lettow-Vorbeck ordered the Ugandan rail line telegraph wires cut and rail stations destroyed. These actions, focused vicinity Kilimanjaro, were short duration missions. The British responded as predicted, and Brigadier General Stewart arrived with four thousand soldiers of the Indian Expeditionary Brigade. Stewart deployed these soldiers across the four hundred mile border with half this area being desert. The *Schutztruppe's* northern force began small-scale attacks near watering holes to create gaps in the British picket line and continued their attacks against the Ugandan rail line. Lettow-Vorbeck seized Taveta, a British town a few miles north of the borders that sat astride the main avenue of approach between Kilimanjaro and the Pere Mountains and was the gateway into German East Africa.⁵⁹ The Germans also achieved their first operational objective on 22 August 1914 when the German ship *Wissamen* and *Kingani* sank the Belgium and British ships on Lake Tanganyika. The Germans completed the *Gotzen* a few months later, and these three ships were a fleet in being that effectively guarded their western border for the next two years.⁶⁰

The British reaction to the threat to the Ugandan rail line was to increase the number of troops committed to British East Africa. Three additional brigades arrived in Mombassa during October 1914 bringing the British strength up to twelve thousand men. These units came from across the empire, a majority from India, and none acclimatized to the oppressive equatorial heat and rugged terrain. Major General Atkins commanded the British forces and his orders stated, "The object of the expedition under your command is to bring the whole of German East Africa under British authority."⁶¹ His units were a disparate collection unaccustomed to each other, and the complex plan exceeded their ability. Atkins envisioned a brigade attacking Longido as a

deception while two brigades attacked Tanga by land and amphibious assault. Longido is nearly two hundred miles from Tanga and controls no key terrain. Tanga was critical to the Germans and would be stoutly defended.

The Battle of Tanga was a tactical fight with operational and strategic implications. Lettow-Vorbeck's spy network permitted him to know the exact location of the British land and sea forces moving south.⁶² His intent for the defense of Tanga was to "collect all available troops as rapidly as possible toward the obviously impending attack on Tanga."⁶³ The British feint at Longido was defeated 3 November. Lettow-Vorbeck gathered these soldiers and others along the Northern Railway and moved them two hundred miles overnight to augment the forces in Tanga. This concentration of forces brought the *Schutztruppe* strength to over one thousand, but he faced a British contingent numbering eight thousand.

The British selected a poor landing site for their amphibious force, and friction began to take its toll. The British attack was delayed twenty-four hours until 4 November 1914. Tanga, a town with solid brick houses and surrounded by dense hedges or cleared ground, was ideally suited for a defense. The British attacked in the finest European tradition of lines and columns. German machine guns and snipers disrupted the British attack, but the weight of numbers permitted the British to gain a foothold. Both commanders maintained a reserve to commit at the decisive moment. Unfortunately, Atkins positioned himself aboard a ship and his reserve was kept within two hundred yards of the front lines remaining under fire throughout the battle. Lettow-Vorbeck's reserve consisted of two companies that moved the length of the Northern Railway, de-trained within the sounds of the guns, and immediately entered the fray. The German commander committed them into the rear and flank of the British forces and their enfilade fire broke the attack. The British retreated, reloaded the ship, leaving tons of supplies on the beach. The Germans suffered seventy casualties. British casualty estimates ranged from

eight hundred in the Official British history, to two thousand as told to Lettow-Vorbeck by British prisoners.⁶⁴

The repercussions of the Battle of Tanga were swift. Kitchener recalled Aitkin, reduced him to Colonel, and put him on half pay for the remainder of the war. He also ordered all British forces to remain on the defense.⁶⁵ The Germans retained a secure port and lines of communication, and continued the interdiction of the Ugandan rail line. This provided Lettow-Vorbeck with the time and space needed to complete the logistical build up, and finish placing the country's industry on a war footing. Tanga was also a German propaganda coup. Their recruitment of local natives to become *Askaris*, and support from colonist exponentially increased. Yet, Lettow-Vorbeck realized that conducting operations against four hundred miles of rail lines was disrupting the British logistical system, but his operational objective of preventing the British from using the Mombassa port had not been accomplished.

Jassini was a small plantation village two miles south of the German border, and sat astride the main coastal road that led the fifty miles to Mombassa. The thick jungle created an unhealthy environment with a large tsetse fly and anopheles mosquito population. Christmas Day, 1914 the British seized the lightly defended town and garrisoned it with three companies of Indian troops. Lettow-Vorbeck's operational objective of disrupting the Mombassa port could not be accomplished in a single bold attack. His plan linked several smaller battles that would decrease the enemy's numerical advantage and place German forces in a position to strike Mombassa directly. Lettow-Vorbeck knew that if the advanced post at Jassini was attacked, the British main body would move south. His plan was to attack Jassini with a small portion of his force, and place the remainder on the likely routes the British main body would approach Jassini. This gave the *Schutztruppe* the advantage of choosing the time and location of battle, and the ability to prepare hasty defensive positions. Jassini itself was not an important objective, but necessary to use as a base of operations and project into British East Africa.⁶⁶

Lettow-Vorbeck moved nine companies by train from across the northern area of operation and consolidated them near Tanga. He allocated four companies to the assault of Jassini, and the remainder were to occupy defensive positions and await the British main body. The British had three companies in Jassini, and another three thousand troops near Mombassa. German forces departed Tanga on 16 January 1915 and were in position two days later. The assault began 18 January. The battle was fiercely contested, but the British defenders held. Unfortunately, the Jassini water supply was outside the perimeter forcing the British surrender on 19 January. The British counter attack from Mombassa arrived only a few hours before the Jassini garrison surrendered. The thick jungle terrain made identification of friend or foe difficult, and the five *Schutztruppe* companies, of two hundred soldiers per company, and three thousand British forces became intermingled. Casualties on both sides were high, and on the evening of 19 January, the British main body broke off the attack and moved back to Mombassa.

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The *Schutztruppe*'s attack on Jassini was a success, but the heavy losses forced Lettow-Vorbeck to reexamine his methods. He did not possess the resources to disrupt the Mombassa port making ownership of Jassini immaterial. His operational approach of using direct attacks against prepared defenses exceeded his resources, and did not achieve his aim. This cognitive tension between the strategic aim and the capabilities of his tactical units forced Lettow-Vorbeck to reevaluate his methods. He had lost six of his forty-two regular officers and expended over two hundred thousand rounds of ammunition – fully one third of his stocks.⁶⁸ Although British casualties and prisoners exceeded seven hundred, Lettow-Vorbeck knew that Jassini had been a mistake:

Although the attack carried out at Jassini with nine companies had been completely successful, it showed that such heavy losses as we had also suffered could only be borne in exceptional cases. We had to economize our force in order to last a long war.....The need to strike great blows only quite exceptionally, and to restrict myself principally to guerilla warfare was evidently imperative.⁶⁹

A decisive battle is comprised of decisive engagements. The dichotomy between maneuver and attrition, set piece engagements, and the high cost of victory, convinced Lettow-Vorbeck that his operational approach was not reconciled with his aim or resources and must change.

After the Battle of Jassini, both sides ceased any large-scale offensive operations. Kitchener was furious at a second British drubbing and issued a stern warning to the new British commander to remain on the defensive.⁷⁰ Lettow-Vorbeck used this respite to reorganize his force structure and operational approach. The Ugandan rail line was still the primary operational objective, but Lettow-Vorbeck wanted to increase his units' effectiveness by stressing their asymmetric advantage: mobility, use of *Askaris*, and flexible logistics. He reorganized the *Schutztruppe* from company-sized elements into organizations capable of specific functions. Raids were conducted by eight man patrols that moved and lived in the desert for days and even weeks. The *Schutztruppe's* ability to send multiple patrols across the four hundred miles of railroads kept the British off balance. These patrols were immensely successful and destroyed thirty-two trains and nine bridges between March and May 1915.⁷¹ The second organization was built around a thirty-man platoon and organized as a combat patrol. They carried additional machine guns and sought contact with isolated British detachments. Their mission was to attrit British forces, and steal supplies and horses. By the summer of 1915, Lettow-Vorbeck had enough horses to form two mounted companies. This increased the *Schutztruppe's* operational reach deep within the British interior, creating a freedom of movement exceeding the infantry, and allowing concentration against multiple targets. These actions forced the British to increase their military presence throughout the country, establish base camps along the entire Ugandan rail line, and have soldiers ride every train. This diffusion of strength was exactly what Lettow-Vorbeck wanted.⁷² Continuous success was also a boon for German recruitment. By the fall of 1915, the *Schutztruppe* strength was at its high water mark for the campaign, having nearly three thousand Germans and eleven thousands *Askaris* under arms.⁷³

The lack of a British offensive threat permitted Lettow-Vorbeck to focus on the logistical preparation of the theater. The *Schutztruppe* employed over eight thousand carriers to move supplies from the producers to the user. Depots were established behind the fighting force and rail spurs built for easier movement. As the British build up continued, Lettow-Vorbeck sensed that the campaign might be entering a new phase. He directed additional supply depots be established between the two rail lines in case withdrawal was necessary. He contracted for crops to be planted in regions south of the Central Railway to be ready months in the future. He also harnessed the indigenous population and colonialist to transform their agrarian economy to a semi-industrial one capable of producing supplies. Looms were built and uniforms made. Soldiers and civilians produced boots from wild animal skins. The German medical department experimented and developed Lettow Schnapps - a quinine-based liquid used to prevent malaria. Candles, rubber, and a fuel made from coconuts were also produced.⁷⁴ The British blockade prevented any resources from entering German East Africa, but the resourceful *Schutztruppe* continued to build their logistical stocks.

The British strength of nine thousand soldiers in the spring of 1915 was doubled by the summer with the addition of a British infantry brigade, a South African brigade, two thousand mounted Boers, several Indian battalions, and twenty-five field pieces.⁷⁵ British strategy changed with their strength and a railroad spur from the Ugandan rail line to the Northern Railway was begun. This spur ran from Voi to Moshi, passing through Taveta and the gateway to the interior. Theoretically, it could sustain several divisions in the attack. The route of the new rail line passed between Mount Kilimanjaro and the Pere Mountains – a gap four miles wide. German reconnaissance detected the construction, and Lettow-Vorbeck surmised the British intention and further route. He directed Major Kraut's force to begin preparing a deliberate defense through the depth of the sector. The British rail line would come at a high cost.

British aerial reconnaissance identified a three hundred-man defense blocking the British approach east of Taveta.⁷⁶ The British commander, Brigadier Malleson, convinced the War Office that he could mass six thousand soldiers on this isolated detachment and open the route into German East Africa. The British attacked 14 July 1915 over open ground and suffered six hundred casualties. Lettow-Vorbeck commanded the heights overlooking the unfinished British rail line, and could not be dislodged. The *Schutztruppe* increased their patrolling in the area, continued defensive preparation in the mountain passes, and logistical preparation. The remainder of 1915 passed without any major engagement between the belligerents, but men and heavy equipment continuously flowed into Mombassa.

Germany's Joint Force Commander in Africa contended with several challenges to his naval forces. The *Koenigsberg*, scourge of the Indian Ocean, had been playing a game of cat and mouse with the Royal Navy near the Rufji River Delta. The delta, a maze of shallow water inlets, swamps and tributaries, prevented the larger British ships from finding and sinking her. Eventually, British technology and weight of numbers took its toll. Aerial reconnaissance located the hidden vessel and directed fire from the battleship *Goliath* and several shallow draft ships. The *Koenigsberg* sank 11 July 1915 after confounding the British for nearly a year and tying down a British contingent of twenty-seven ships.⁷⁷ The resources needed to support the Dardanelles campaign had instead focused on the *Koenigsberg*. The *Schutztruppe* salvaged the ten 4.1 inch guns from the ship and configured caissons and limbers to create mobile field pieces. The guns, distributed across the colony, continued to wreck havoc on Allied forces. The three hundred sailors of the *Koenigsberg* moved in land and were integrated into *Schutztruppe* units.

German naval supremacy was also being challenged in Lake Tanganyika. First Sea Lord John Fisher reaction to the German fleet on the lake was, "It is both the tradition and duty of the service to sink enemy ships wherever there is enough water to float them", set in motion an incredible sequence of events.⁷⁸ Two small gunboats, *HMS Mimi* and *HMS Toutou*, were

shipped to South Africa in June 1915. These boats were placed on a train and moved eighteen hundred miles to the Belgium Congo, carried one hundred and twenty miles overland by tractor and brute strength including over a six thousand foot mountain range, and a final two hundred miles by train to Lake Tanganyika.⁷⁹ The ships launched 23 December 1915 and sank the *Wissamen* and *Kingani* in February 1916. The remaining German ship *Gotzen* was struck by an aerial bombardment in July 1916 and scuttled by the crew. The Allies controlled Lake Tanganyika and could land troops any where on the German western flank. In February 1916, Lettow-Vorbeck received word that the British were receiving a new commander. Lieutenant General Jan Smuts, South African, veteran of the Boer Wars, and expert bush warrior arrived in Mombassa 19 February 1916. The war in East Africa entered a new phase.

Smuts' Army in the spring of 1916 was vastly different than the army defeated at Tanga. He controlled nearly thirty thousand soldiers outfitted with the latest military technology: heavy artillery, armor cars, reconnaissance airplanes, and numerous trucks necessary for his robust logistical tail. His force of European, Indian and South African created a mix of customs, training level, and vulnerability to disease, creating a babel of languages that stressed the unity of Smuts' command. Smuts identified the *Schutztruppe* as the center of gravity, and believed his overwhelming strength and superior mobility of the South African mounted brigades would outmaneuver Lettow-Vorbeck and force a decisive battle. Smuts synchronized the effects of the Allies across the theater designing a concept of concentric attacks that would encircle and annihilate the *Schutztruppe*. His British force consisted of two divisions and a mounted brigade. The 2nd Division consisting of fifteen thousand soldiers would conduct a frontal attack through the Taveta Gap and orient on the Northern Railway. This would force Lettow-Vorbeck to mass the *Schutztruppe*. The South African Mounted Brigade would envelope the German defense from the west and prevent a withdraw. Van Deventer's 1st Division would conduct a turning movement through Longido sixty miles west of the main effort.⁸⁰ Simultaneously, Belgium

forces would cross Lake Tanganyika and attack along the Central Railway, while a British Rhodesian force attack from the southwest.⁸¹ Smut's aim was a decisive battle. He would fix the *Schutztruppe* with a strong frontal attack and use independent maneuvering forces to attack deep into the *Schutztruppe* rear. This combination of a holding and striking force would be repeated for the next two years. The British strength in men, material, and multiple columns operating on exterior lines was viewed by Lettow-Vorbeck as decisive points that could indirectly weaken the enemy's center of gravity.

Lettow-Vorbeck understood that his center of gravity was the *Schutztruppe*. His strengths of interior lines, superior mobility, and knowledge of the terrain permitted him to retain the initiative and concentrate forces at specific points in the theater. His lightly armed but fast moving force created an asymmetric advantage against the heavily armed but slow moving British. Lettow-Vorbeck's operational objective was to trade space for time and fight only when conditions were favorable. The British weakness was their mobility. The terrain would challenge troop movement and logistics, while the harsh climate and plethora of diseases would decimate foreigners. Lettow-Vorbeck knew that if he could disrupt the British advance, frustrate their efforts by positioning forces between components to fragment their efforts, and never relinquish his freedom of action, he could dictate the tempo of operations, chose the time and place of engagements, and use his asymmetric advantages to avoid a decisive battle.⁸² The contest between the military Goliath owning superior quantity of men and equipment versus the smaller and quicker David had begun.

The *Schutztruppe* wisely used their time and built a defense in depth from Taveta south nearly fifty miles. Lettow-Vorbeck massed four thousand soldiers in prepared positions across a twelve-mile front. He detached an additional one thousand against van Deventer's column near Longido, and kept several companies in reserve. On 8 March 1916, Smuts initiated a massive artillery bombardment that was adjusted by aerial reconnaissance planes. The artillery had

excellent effects – on dummy positions. Smuts assault force was halted without any gains. The attack continued for nearly a week before a false report of enemy in the *Schutztruppe* rear forced Lettow-Vorbeck to withdrawal.⁸³ The *Schutztruppe* grudgingly concede ground to the infantry, while the reserve oriented on Smuts' enveloping cavalry brigade. Their purpose was to disrupt movement and fragment the synergy between the British holding and striking forces. As the *Schutztruppe* slowly withdrew along the Northern Railway, Lettow-Vorbeck sensed an opportunity to strike van Deventer's isolated division. Lettow-Vorbeck took nearly two thousand soldiers from the Northern Railway and moved them three hundred miles to Kondoa Irangi and van Deventer's penetration.

Van Deventer's division plowed through the county's interior and suffered terribly. The *Schutztruppe*'s delaying tactics of snipers, ambushes, and counterattacks against the British supply lines slowed their progress to a crawl. Worse, nature began to take its toll. Tsetse fly fever killed six hundred horses of the cavalry brigade in ten days. Malaria, dysentery, and constant *Schutztruppe* attacks disrupted British movement. Van Deventer's force reached Kondoa Irangi on 18 April. Out of the ten thousand-man force, less than three thousand reached their final objective.⁸⁴ Lettow-Vorbeck's thousand-man reinforcement arrived as the British were preparing their defense of Kondoa Irangi. He did not know the true state of British strength, but saw the force ratios were about even. Lettow-Vorbeck declined battle and withdrew all but a small screening force.

Spring turned into summer and Smuts continued to inch south. The British captured a succession of towns without a battle as the *Schutztruppe* withdrew hours before the British main body would arrive: Longido and Moshi on 13 March, Kahe on 19 March, Kondoa Irangi on 18 April, Tanga on 5 July, Dodoma on 31 July, and Morogoro on 26 August 1916. Smut's offensive had taken six months to cover nearly three hundred miles. They had captured thousands of square miles of worthless land, towns, and both Railways, but at great cost to themselves. Smuts

now contended with lines of communication stretching three hundred miles to Mombasa, harassed by guerillas, and attempting to sustain a force decimated by disease. Smuts believed that Lettow-Vorbeck would never concede his last rail line and would fight to the end at Morogoro. He was wrong. British troops entered the town to the sounds of a coin operated music machine playing *Deutschland Uber Alles*.⁸⁵

Smuts had seized numerous towns without opposition, but a decisive fight had been the purpose of the entire expedition.⁸⁶ Lettow-Vorbeck had correctly identified the British requirement for maneuver space and good roads that allowed massing of combat power and sustainment of the force. By distributing his force across the theater and conducting a slow withdraw on interior lines, the *Schutztruppe* had lured a modern army into their worst nightmare. Hacking roads through jungles and rebuilding bridges at every river slowed the British progress. Landmines, snipers, and ambushes made difficult work impossible, lowered British morale, and disrupted the tempo and synergy between the columns. Lettow-Vorbeck's operational approach avoided British strength and focused indirectly on its movement and sustainability. Trading space for time, Lettow-Vorbeck controlled the tempo of operations and allowed the African environment to claim its victims.⁸⁷

Lettow-Vorbeck's operational objective was not to win victorious, but to tie down enemy troops. By avoiding decisive engagement, he was able to preserve his combat power and slowly reduce the enemy's ability to fight. Critical to the *Schutztruppe*'s success was never being forced into an engagement. Lettow-Vorbeck's description of this dilemma succinctly relates the tension between his strategic aim and tactical resources, and nicely describes Schneider's and Naveh's theories:

I ask the reader to imagine himself in the position of the commander, with insufficient means and exposed to attack by superior numbers, who has to continuously ask himself, what must I do in order to retain freedom of movement and hope?⁸⁸

Lettow-Vorbeck's six-month delaying operation had cost the Allies dearly, but the weight of numbers began to press on the *Schutztruppe* vicinity Morogoro and the Central Railway. The *Schutztruppe* maneuver space had become dangerously small. Lettow-Vorbeck sensed the need to make a stand.

Dar es Salaam fell to the British on 3 September 1916 and ended the *Schutztruppe's* operation on the Central Railway. The defense of the port was appropriately left to Captain Loof and his two hundred men of the *Koenigsberg*. Stripping the city of anything of value, destroying what could not be carried, and sabotaging any equipment needed for port operations, the capital became a shell of its former self. The actual defense of Dar es Salaam was more deception than prepared positions: dummy mines in the port, elaborate signals and flares to replicate a large force, and constant movement of the lone 4.1 inch gun convinced the British that they were in for a fight. The British finally attacked with two thousand soldiers and fifteen warships, and all they found were eighty casualties in the hospital.⁸⁹ Major General Wahle and four thousand *Askaris* located in the country's interior slowly withdraw as the Belgium's marched east. Lettow-Vorbeck had 1100 Germans, 7300 *Askaris*, and 16 field pieces versus 80,000 Allied soldiers closing on his position.⁹⁰ He needed time and maneuver space to complete the movement of logistical stores south, and decided that a defensive stand would not be passed up by the weary but eager British. The Uluguru Mountains form a fifty-mile barrier perpendicular to the Central Railway. Its rugged terrain and narrow cross mobility corridors were passable by small units and easily defended. Smuts continued his pursuit and saw the mountains as providing an opportunity to defeat isolated detachments in detail. He sent the 1st Division to the east, the newly formed 3rd Division to the west, while van Deventer's division continued to move east along the Central Railway. Smuts vision of a fixing and enveloping force failed to consider the mountains preventing timely mutual support. Lettow-Vorbeck viewed the two independent divisions as the opportunity to defeat each separately.

The *Schutztruppe* prepared defensive positions near the town of Kisaki. Lettow-Vorbeck massed thirty-two hundred soldiers near the town, positioned one thousand for a mobile defense in the west, and maintained a thousand man reserve that moved across the mountain as the situation developed. On 5 September 1916, the British conducted a frontal assault on the *Schutztruppe* prepared defense. German field pieces and the 4.1-inch *Koenigsberg* guns hidden in the rocky outcroppings blasted the British linear formations. The South African Mounted Brigade began maneuvering around the flank and prepared for the first cavalry charge since Kitchener's 21st Lancers at the Battle of Omdurran.⁹¹ Unfortunately, the British expected the German reserve to be positioned in the rear not off to the exposed flank. As the cavalry formed for their charge, the *Schutztruppe* struck with machine guns, rifles, and cold steel. The mounted brigade was routed nearly to a man. Smuts called off the attack on 11 September and withdrew his forces to the Central Railway. Months of disease-laden jungles, poor diet, and the latest defeat forced Smuts' culmination.⁹² Lettow-Vorbeck had gained his space and time and pushed his troops south. The fall rains began in October and eliminated any further British pursuit. Smut's logistical problems had still not been solved. The rains crippled his fragile supply system and his force lay trapped in a sea of mud. Disease wrecked both man and animal. Between October and December 1916, fifteen thousand British and twelve thousand South African troops were invalided home. During that same period over twenty-eight thousand horses, mules and oxen died from tsetse fly fever.⁹³ It was all Smuts could do to keep his army from starving.

Smuts had captured most of German East Africa, controlled both rail lines, the entire coast, and every major town in the country. However, Lettow-Vorbeck remained undefeated and a viable threat. Smuts was recalled to Britain and replaced with General Hoskins. Hoskins had a fundamentally different view of the war and began to change the British force structure, organization, and strategy. He eliminated pack animal and mechanical transports in favor of native carriers, and replaced British and Indian Regiments with native East Africans. Borrowing

a page from the *Schutztruppe* manual, the indigenous personnel proved to be more resilient to local disease.⁹⁴ Hoskins also realized that European tactics that stressed mass armies and vast quantities of artillery were a false paradigm in Africa. His smaller but more mobile force would meet Lettow-Vorbeck on a level playing field. Hoskins recognized that Lettow-Vorbeck would not fight a decisive battle, and his campaign plan targeted the *Schutztruppe*'s primary weakness – logistics. The British divided the operational area into zones and assigned forces to patrol areas and conduct a scorched earth campaign to eliminate the *Schutztruppe*'s food supply. Operations were directed not at the *Schutztruppe*'s main body, but at the maneuver space they wanted to occupy in the future. This insertion of British forces into unoccupied space and between Lettow-Vorbeck's columns denied the *Schutztruppe* the synergy they had enjoyed for three years.

Spring rains arrived early in 1917 and lasted until May. This several month interlude permitted Hoskins to recruit and train East Africans and form an additional twenty battalions of the King's African Rifles. Hoskins was unexpectedly replaced with van Deventer, but the new policies were continued. Van Deventer used the strategic mobility of the Royal Navy to project forces from the coast and the burning of maize fields and crops began to force Lettow-Vorbeck into a corner. The density of British forces and available maneuver space shrank. By the fall of 1917, Lettow-Vorbeck had divided his forces into two groups separated by fifty miles. His force of two thousand was near Lindi. Wahle's force of two thousand was located at Mahiwa. Mahiwa overlooked a dry riverbed to the north, and a large mountain to the south. Between the two was excellent defensible terrain. Lettow-Vorbeck needed to decrease the British pressure and guerrilla tactics were insufficient. Lettow-Vorbeck instructed Wahle to stand and fight⁹⁵

The British force closing on Mahiwa consisted of six thousand inexperienced soldiers commanded by Brigadier Beves; a soldier as persistent and imaginative as Haig. On 14 October 1917, Beves initiated a frontal assault into the teeth of Wahle's defense. Fifteen hundred *Askaris* manned the trench line with several machine guns and *Koenigsberg* guns in support. Beves

continued the assault for an entire day, with bayonet charges and hand to hand combat creating a killing field for both sides. Lettow-Vorbeck counterattacked with one thousand *Askaris*, covering the fifty miles in a little more than a day. His flank attack against the British artillery, supply lines, and forward positions hurt, but did not discourage Beves. Finally, on 18 October, Beves issued the command to withdraw. It was the worst British defeat of the campaign. The British suffered twenty-seven hundred casualties out of the forty nine hundred combatants. The *Schutztruppe* lost five hundred out of twenty-five hundred. Miller describes this battle as the African Gettysburg. Lettow-Vorbeck had created the time and space needed, but at a heavy cost.⁹⁶

Even though the British had suffered greater casualties, the *Schutztruppe* had no means of replacing their losses. Lettow-Vorbeck force marched his men south to the Rovuma River and the border with Portuguese East Africa. On 6 November, Lettow-Vorbeck gathered his subordinate leaders together and took stock of their situation. They had only four hundred thousand rounds of ammunition, food for only six weeks, and enough quinine for a month. Their force of four thousand *Askaris* and an equal number of carriers could not continue fighting.⁹⁷ Lettow-Vorbeck's strategic aim remained unchanged, but his tactical means no longer permitted the accomplishment of his operational objectives. He was too weak to continue the campaign of delaying the British through unconventional tactics, and limited objective attacks and defenses. He had only one choice: attack Portuguese East Africa. In his own words:

In the unlimited territory at our disposal, it would be possible to withdraw from an unfavorable position. The enemy would be compelled to keep an enormous amount of men and material continually on the move and to exhaust his strength to a greater extent proportional to ours.⁹⁸

Lettow-Vorbeck reduced his army's strength by leaving all wounded and sick behind. On 25 November 1917, the *Schutztruppe* crossed the Rovuma River into Portuguese East Africa with three hundred Germans and seventeen hundred *Askaris*.

Concurrent with Lettow-Vorbeck's crossing of the Rovuma River, an unknown and exotic weapon was being introduced to the African continent by the German High Command. A zeppelin, L59 and code named *China Show*, departed Bulgaria on 21 November 1917 carrying fifteen tons of supplies for the beleaguered *Schutztruppe*. On 23 November, while above Khartoum, the zeppelin received a message that Lettow-Vorbeck had surrendered and to return to base. The zeppelin returned after flying forty-two hundred miles in four days.⁹⁹ Why would Berlin go through so much trouble for such a small quantity of supplies? There is evidence that L59's real purpose was not resupply, but to return Lettow-Vorbeck to Germany and a higher command on the Western Front.¹⁰⁰

Lettow-Vorbeck's operational objective during the initial phase of the campaign was to interdict British supplies and attack high value targets to force British expenditure of men and resources. His subsequent operational objective was to maintain contact with the enemy and conduct a slow withdrawal through difficult terrain forcing the increased commitment from the British Army. Crossing the Rovuma River changed Lettow-Vorbeck's operational objective yet again. He now wanted British forces to expend energy and formations pursuing the *Schutztruppe*. Lettow-Vorbeck's operational maneuver remained consistent through the three phases. He distributed his forces across the theater to strike, delay, or screen enemy columns. Using interior lines to concentrate units in time, space, or both permitted the *Schutztruppe* to gain a localized advantage on a superior force. Throughout the campaign, disrupting the synergy between British components and not necessarily destroying formations remained the focus. Lettow-Vorbeck's operational approach of indirect action against British weakness was synchronized with unconventional action and positional offensive or defensive operations that served a specific purpose. Lettow-Vorbeck's operational logistics changed drastically. Previously, the *Schutztruppe* used a highly developed system of supply depots, carriers, and lines of communication to maintain durable formations. In Portuguese East Africa, the *Schutztruppe*

survived by direct attack against supply depots and foraging. Ultimately, Lettow-Vorbeck's strategic objective remained the same.

Miller calls the Rovuma River Lettow-Vorbeck's Rubicon, and compares his operational campaign with Grant's crossing south of Vicksburg. The analogy is poor. Grant crossed the Mississippi to facilitate the maneuver of his force toward enemy formations along the most favorable approaches. Lettow-Vorbeck used maneuver to avoid British forces.¹⁰¹ Immediately after crossing the Rovuma, a Portuguese fort was discovered and attacked. The hardy *Schutztruppe* overwhelmed the ill trained garrison killing two hundred and capturing several hundred more. The garrison was well stocked and Lettow-Vorbeck's supply problems were temporally solved. To force a British pursuit, Lettow-Vorbeck marched his troops eight hours a day covering on average twenty miles a day. To increase security and foraging, the *Schutztruppe* formed three columns, each possessing an advanced guard, main body, and rear guard with a days march in between formations. Lettow-Vorbeck accepted the risk of forming small detachments knowing that the British could not maintain the rate of movement or tempo. The *Schutztruppe* continued south and captured five additional forts over the next two months before establishing a base of operation in the country's interior vicinity Chirumba.¹⁰² Crops were planted for a February harvest, and patrols dispatched to maintain observation of Portuguese garrisons and British columns. Lettow-Vorbeck's personal life became more difficult in March 1918 when a blade of grass punctured his one remaining eye. Nearly blind and unable to read maps or his own handwriting, the *Schutztruppe* commander considered his options.¹⁰³

The spring rains would delay any major British offensive operation until April. The most probable British course of action was the movement of a divisional size force from the coast city of Porto Amelia while supporting efforts moved from Nyasaland heading east. The British were massing multiple formations along exterior lines capable of mutual support only when the four hundred mile separation had been reduced. Lettow-Vorbeck sensed an

opportunity to defeat isolated British columns sequentially using his interior position, but prior to the enemy closing the vice.¹⁰⁴

Lettow-Vorbeck's campaign of movement began in earnest once the crops had been harvested and his reconnaissance patrols informed him that the British columns had begun to march. Lettow-Vorbeck instructed Koehl to lead an eight hundred-man detachment and delay van Deventer's eight-thousand man division from moving freely in the country's interior. Unconventional methods disrupted the British movement costing men, animals, and most importantly the time and synergy between converging forces. Koehl delayed the British for six weeks allowing the remainder of the *Schutztruppe* to concentrate and defeat several battalions of the King's African Regiment. On 22 May 1918, the British forces linked up, but the *Schutztruppe* was not to be found.¹⁰⁵

Lettow-Vorbeck's operational objective was to remain a viable fighting force. As he maneuvered his army south, game and foraging proved bountiful, but ammunition could only be gained from raids on supply depots. By the summer of 1918 six Allied columns, the smallest being a regiment, and totaling nearly thirty thousand soldiers pursued Lettow-Vorbeck.¹⁰⁶ The *Schutztruppe* maneuvered closer to the port cities on the Indian Ocean to attack large garrisons. In June 1918 the supply depot at Namacurra was seized after a two-day fight. While enjoying the spoils of victory, the *Schutztruppe* also captured a riverboat carrying medicine, and a trainload of British soldiers who arrived at the garrison surprised to find it operated by Germans. Lettow-Vorbeck used the maps, journals, and records found in the supply depot offices to learn the disposition of British forces and locations of Portuguese supply depots in the area. The *Schutztruppe* departed Namacurra hours ahead of the British columns and marched northeast where this process was repeated at Namirre on 23 July and Numarroo on 24 August 1918. At each, Lettow-Vorbeck confounded his British pursuers by drastic changes in direction. This upset the spatial relationships between the British columns and forced van Deventer to turn

around his divisions, reconfigure his lines of communication, and develop new bases of operation. Each move cost time and permitted the *Schutztruppe* band of fast moving raiders to outdistance and frustrate the Allies.

Lettow-Vorbeck faced a decision after the battle of Numarro. He could continue west and enter British Nyasaland or turn north and reenter German East Africa. Each possessed lucrative political and propaganda value. The British War Office had pronounced the Germans defeated the previous year. His sudden appearance would ignite panic in the British colony, or instigate rebellion in the Germany colony. Ultimately, Lettow-Vorbeck chose to return to German East Africa feeling that the British knowledge of their local terrain presented a disadvantage to the *Schutztruppe*.¹⁰⁷

The British were well aware of the impact of Lettow-Vorbeck moving into German East Africa. They surmised that his objective would be Tabora, the largest city in the western portion of the colony, and strategically located on the Central Railway. Van Deventer's choices was to continue to pursue the *Schutztruppe* through the countries interior and lengthen his supply lines by fourteen hundred additional miles, or too move his main body to Porto Amelia, sail to Dar es Salaam, and use the Central Railway to reach Tabora before the *Schutztruppe*. Van Deventer chose the latter, but maintained a sizeable force based out of Nyasaland and British Rhodesia to maintain the pursuit.¹⁰⁸

Multiple British and Belgium battalions contested the *Schutztruppe*'s movement north. On 30 August 1918, the master of fragmentation received a doze of his own medicine when British columns maneuvered between his advanced guard, rear guard, and main body formation. The battle of Lioma began as a small contact between Lettow-Vorbeck's main body and a British detachment in thick terrain. Unfortunately, the British detachment was a regimental size force. As both British and *Schutztruppe* formations moved to the sounds of the guns, Lettow-Vorbeck lost control of his forces, units became intermingled, and British superiority in artillery and rifles

began to take its toll. The non-linear battle raged for two days and over several square miles of thick jungle. The *Schutztruppe* lost over a hundred men and most of its baggage carriers, but escaped the British trap. Lettow-Vorbeck claimed Kiowa was the closest the *Schutztruppe* ever came to annihilation.¹⁰⁹ British losses were numerically greater, but Lettow-Vorbeck had lost twenty percent of his fighting strength. The *Schutztruppe* began an immediate force march to separate from the enemy, and on 28 September 1918 re-entered German East Africa. They had traveled fifteen hundred miles in nine months, had lost one of every four soldiers, but continued the fight and remain a viable threat to British interests.¹¹⁰

The *Schutztruppe*'s route paralleled Lake Nyasa and on 31 October 1918, Lettow-Vorbeck invaded British Rhodesia. His objective Fife, a British supply town, was heavily defended so the decision to bypass and continue into Rhodesia's interior was made. The *Schutztruppe* seized the town of Kasema on 12 November. Lettow-Vorbeck assessed his situation. Though less than fifteen hundred strong his force was well armed and relatively healthy. His next move could be north into the Belgium Congo to disrupt the copper mining industry, or turn west and march the thirteen hundred miles to the Atlantic Ocean. While debating the *Schutztruppe*'s future, a patrol captured one of van Deventer's couriers. He carried the announcement of Germany's unconditional surrender and signing of the armistice.¹¹¹

Lettow-Vorbeck accepted his nation's decision and marched his Army to Abercorn. On 25 November 1918, the *Schutztruppe* proudly paraded into the British camp, receiving a welcome fitting an honorable opponent rather than the surrender of a defeated enemy. The Germans kept their weapons, and over one hundred Germans boarded a Royal Navy ship on 17 January 1919 and sailed for Germany. In March, the *Schutztruppe* paraded through Berlin's Brandenburg Gate, a victorious and undefeated Army.

Lettow-Vorbeck's adventure did not end with the armistice. He commanded a Reichswehr Division after the war, retired to enter the Reichstag, and served as a deputy until

1930. His retirement from public service coincided with the rise of Hitler and National Socialism. In 1935, Hitler offered Lettow-Vorbeck the Ambassadorship to England. His negative response, though humorous, is unprintable. The next great war of the century claimed both his sons, and Lettow-Vorbeck lived in poverty in Hamburg, surviving only on packages sent by Smuts and other British officers. An unconfirmed but interesting story involves Lettow-Vorbeck and the end of World War II. When asked who would be a suitable leader for post-war Germany, Churchill's immediate response was Lettow-Vorbeck.¹¹²

Section IV. The Army Versus an Asymmetric Enemy

Adversaries will develop war-fighting doctrine that takes perceived U.S. strengths and vulnerabilities into account. They will try to prevent projection of U.S. forces and control the nature and tempo of U.S. actions through asymmetric operations and adaptive forces.... Adversaries will adapt non-linear, simultaneous operations conducted throughout the AO. They will use conventional and unconventional means to destroy U.S. national will and the capability to wage war... conduct force oriented operations...avoid decisive battle...conduct sophisticated ambushes... concentrate and disperse as opportunities allow.

Student Text 3-0, Operations¹¹³

General Smuts could have easily written the epigraph that introduces this section after his army culminated in the fall of 1916. U.S. Army doctrine predicts that future adversaries will use many of the same methods that the *Schutztruppe* employed against the British. However, studying the lessons of previous eras, and attempting to apply them to modern conditions risks learning the wrong conclusions. Worse still is a military leader ignorant of the past. Lettow-Vorbeck's army fought and won battles and the campaign when every measure of combat power was weighted toward the Allies. Why? What lessons can military leaders learn from a campaign that ended nearly a century ago? Arguably, the most significant lessons gathered from a study of great captains are how they applied operational art. The East African campaign lacks many of the physical components theorist associate with operational art. Mass formations, especially considering the area of operation, never maneuvered or fought against each other. Mechanization, save the railroads, had minimal influence on the outcome. Operational maneuver was not the bold strokes of X Corps at Inchon or the coalition of Desert Storm, but rather small

units that measured distances by how far they could march in a day. Conversely, the intellectual direction that Lettow-Vorbeck guided his campaign includes qualities the Army stresses in its emerging doctrine. Underlying the relationship between strategy and tactics and developing operational objectives matched to resources is as valid today as it was during the Great War. Military leaders understanding both friendly and enemy strengths and weakness, identifying centers of gravity, recognizing the type of conflict being fought and its relation to level of commitment and risks, and weighing the dilemma of offering or refusing decisive battle are all paramount in the design of an operational campaign.

The Army of the twenty-first century expects to fight a force like the *Schutztruppe*. Terrorist, non-state actors and guerrillas share the characteristics of being difficult to identify, target, and defeat with traditional mental models. American forces and their expansive logistic, command centers, and communication nodes present lucrative targets to an enemy who is not seeking victory, but only a delay in the decision. The purpose of this section is twofold. First, determine if Lettow-Vorbeck employed operational art by assessing the campaign against the five critical characteristics synthesized from Naveh and Schneider's theories. Second, suggest parallels from the campaign that are relative to the American Army at the dawn of a new century.

First, Lettow-Vorbeck's operational objectives and understanding of the cognitive tension between his strategic aim, forcing the British to expand their commitment in East Africa, to his limited tactical resources was the most important factor enabling him to guide the campaign to fruition. His operational objectives balanced the dynamic relationship between ends, ways, and means. As the relative strength of both sides changes over time so did the objectives. The lessons of Jassini in January 1915 taught Lettow-Vorbeck that his tools – tactical units – have a finite capability. Tempering the operational objective to agree with his army's resources reduced the risk of decisive defeat. The evolution of operational objectives from offensive operations against vulnerable targets, to a delay that highlighted the

Schutztruppe's asymmetric advantage, to finally a withdrawal that focused on force preservation and denying the British a victory, did not limit Lettow-Vorbeck's use of tactical battles to create an effect. Tanga, Kisaki, and Mahiwa were tactical battles that contributed to the broader operational objective. The relation of tactical battle to operational objectives and strategic aim creates what Naveh calls cognitive tension. This tension is the commanders "dilemma of the decision". Strategic requirements at odds with subordinate tactical commanders desires. The commander resolves this dilemma by imparting a shared operational vision with his organization, displaying leadership in difficult circumstances, and understanding and acceptance of risk when necessary.

The dilemma of the decision is a greater challenge in the twenty first century. Instantaneous communication, situational awareness technology, and the ability for senior leaders to reach to the lowest level of the organization exponentially increase the quantity of information and the speed in which decisions must be made. Unfortunately, the technology that eliminates Clausewitz's friction has yet to be developed. Adding to the commander's burden is the CNN factor. Every action has the potential to make the evening news. Every decision examined by pundits and politicians. Similar to Smuts, the US Army maintains an offensive, techno-centric focus. Where Smuts failed and the Army is at risks is focusing extensively on friendly capability at the expense of a detailed analysis and honest assessment of the enemy's war aims, strengths and vulnerabilities, and what he is willing to risk to achieve his aim. LZ Albany, Mogadishu, and the *USS Harlan County* are each examples of American forces displaying over confidence and underestimating the enemy's intentions and determination.¹¹⁴

Second, the *Schutztruppe*'s operational maneuver shaped the battlefield permitting successive operations. The freedom of action that Lettow-Vorbeck demanded placed his units at positions of advantage and rarely pursued a decisive engagement unless the odds of victory were clearly to their advantage. Using the *Askaris*'s tactical advantages of mobility, knowledge of

terrain, and a logistical system responsive to the needs of the fighter, Lettow-Vorbeck was able to decide the time and place of battle. This combination of initiative and action permitted Lettow-Vorbeck to control the tempo of the campaign, create a local superiority, and concentrate his force against a British vulnerability. The British tactic of using a fixing, enveloping, and turning force became predictable. Lettow-Vorbeck's insertion of the *Schutztruppe* into the space between maneuvering columns fragmented British synergy and prevented their concentration. Unconventional methods directed at the British support generating units fractured the bond with combat units, limited their tempo and constrained their operational reach. Tukhachevskii's simultaneity was probably not possible due to the lack of communication between distant formations. Tactical commanders operated from Lettow-Vorbeck's intent, but the coordination necessary between units was not possible. Lettow-Vorbeck's operational maneuver was also strengthened through his lines of operation. The *Schutztruppe's* use of interior lines, especially during the withdraw from the Northern Railway to Morogoro permitted mutual support and rapid concentration of combat power.

The maneuver challenges that the British faced are very similar to U.S. Army legacy forces. The larger the British Army became the slower they moved in East Africa's restrictive terrain. Both legacy and interim forces face the same challenge if deployed to a failed nation-state. Infrastructure such as roads, bridges, and choke points that are easily blocked or defended by cheap landmines and anti-tank systems reduces the Army's technological advantage. The need to retain freedom of action and not become decisively engaged in areas that limit the employment of all combat systems will be difficult, and places a premium on situational understanding and a common operating picture. The interim and objective forces anticipated ability to develop situations out of contact, maneuver to positions of advantage, and conduct decisive operations relies on knowing the enemy's disposition and projecting forces into unoccupied space enabling the commander to determine the time and place of battle.¹¹⁵

Enhancing the operational maneuver will be the knowledge of friendly forces positioning, and the commander's ability to strike from multiple directions, with different systems, and before an enemy reaction. Simultaneity will begin to dominate the information driven battlefield.

Third, British superiority in men and equipment made their destruction impossible, but the *Schutztruppe* was able to disrupt their system for four years. Lettow-Vorbeck focused his efforts at vulnerable components of the British system at specific times. His interdiction of the Ugandan railroad forced the British to change their tactics and spread their forces across a broad area. Isolated detachments guarding critical sites were individually defeated. Battles such as Longido, Tanga, and Taveta frustrated the British efforts and eroded their capabilities over the long term. The accumulation of tactical success against the British as they crawled through German East Africa's inhospitable interior disrupted the British ability to bring combat power to bear. Slowing the British rate of movement increased the time spent in the jungle, and made disease the most lethal threat on the battlefield.¹¹⁶ The British wire and radio communication system was well to the rear, and the *Schutztruppe* rarely disrupted the system's link between the cybernetic and maneuver components. However, other means of communication such as messenger and mail were intercepted. The *Schutztruppe's* use of deception complimented their disruption efforts. Passive measures such as camouflage and movement at night and under jungle canopy prevented British aerial reconnaissance from accurately reporting their disposition. Active measures such as emplacing dummy minefields in the port of Tanga and Dar es Salaam slowed British operations and forced them to choose alternate courses of action. The naval engagements on Lake Tanganyika prevented the Allies from opening a second front in the campaign, and the *Koenigsberg's* eight-month stand as a ship in being forced the British to divert shipping and commit an extraordinary number of ships to a secondary effort. A small, but motivated and well-led army, prevented a force ten times its size from ever achieving its aim of a decisive battle.

Enemies acknowledge that the U.S. is the world's lone super power, and few dare to directly confront the nation's military. This unfortunately is not a blessing, but exposes vulnerabilities not protected by tank armor, stealth technology, or precision guided munitions. The impact of casualties on both politicians and public support is viewed as the Achilles heel of the U.S. military. Avoiding a battle of destruction and seeking to disrupt Army operations through port and airfield denial, interdiction of lines of communication, and spoofing of intelligence gathering systems are all low risk, high payoff enemy courses of action. Positioning weapon systems in civilian areas increases the risk of collateral damage, and decreases the willingness to employ munitions. The Serbian Army, a third rate organization at best, withstood seventy-eight days of bombing from the combined efforts of nineteen NATO nations. A non-permissive entry of ground forces would have guaranteed a *Schutztruppe* like response: landmines, snipers, and attacks on soft targets to decrease U.S. tempo and occurring in restrictive terrain favoring the defender.

Fourth, Lettow-Vorbeck's operational approach exploited the dichotomy between offensive and defensive operations serving two purposes. As the force ratio between the *Schutztruppe* and the British Army changed, Lettow-Vorbeck's methods changed. His offensive operations during the initial phase of the campaign succeeded only due to his ability to concentrate forces across multiple targets simultaneously without incurring an unacceptable level of risk. Once the British accrued three times the number of soldiers, offensive operations risked a decisive engagement that the *Schutztruppe* could not win. Lettow-Vorbeck's transition to defensive operations that used tactical formations to delay British and force them into positions where the terrain neutralized their military might. Lettow-Vorbeck demonstrated his superior maneuverability in the final phase of the campaign by forcing the British to pursue his force. He fought only when necessary. Throughout the campaign, the *Schutztruppe* used unconventional methods to complement their offensive or defensive operation. This frustrated the British

leadership and ruined the synergy between arms. Exploiting the dichotomy between offensive and defensive operations also arrayed the *Schutztruppe* strength against British vulnerability. The indirect approach against the enemy center of gravity was demonstrated in the mobile defenses at Kisaki and Mahiwa. It also served to preserve the *Schutztruppe* combat power. By declining decisive battle when conditions were unfavorable, or accepting combat when he needed to create maneuver space and retain freedom of action, Lettow-Vorbeck was able to create positive conditions at both the tactical and operational level. The combination of offensive and defensive operations combined with unconventional, positional, and mobile warfare created a synergistic effect on the British system that was greater than the sum of individual actions.

Fifth, Lettow-Vorbeck's operational logistics provided the connectivity between national resources and the tactical units. The Royal Navy's blockade of ports made resupply nearly impossible. Lettow-Vorbeck's main concern in September 1914 was not combat against the British, but how to establish and sustain a logistical system capable of supporting units distributed across a country the size of Germany. Major General Wahle's assignment as commander of the interior and lines of communication reveals the importance Lettow-Vorbeck placed on this mission. The *Schutztruppe* constructed depots, roads, rail spurs, and used native carriers to provide structure to a difficult mission. By October 1915, eight thousand carriers were transporting goods, stocking depots, and planting crops hundreds of miles behind the combat units, but where Lettow-Vorbeck anticipated he would need them months in the future. However, operational logistics is greater than keeping tactical units supplied. Lettow-Vorbeck was able to harness the creativity and resourcefulness of the *Schutztruppe* and civilians, and transformed an agrarian based society into a semi-industrious one capable of sustaining a small army. The production of uniforms, boots, medicine, rubber and fuel products, soap and toothpaste, and other items necessary for survival minimized the erosion caused by the harsh environment and British blockade.

Lettow-Vorbeck understood his main weakness was logistics and he was completely dependent on what he could grow, make, or capture. He stressed never allowing the British to get behind his formations. The *Schutztruppe* grudgingly gave ground, but rarely risked being surrounded. Lettow-Vorbeck's prioritization of logistics also influenced combat operations. The battle of Kisaki was fought primarily to allow his base of operations to complete their movement south. The *Schutztruppe* never manufactured ammunition, but survived by capturing ammunition beginning with the battle of Tanga and ending with the operations in Portuguese East Africa and British Rhodesia. Certainly, Lettow-Vorbeck's logistics was the "final arbiter of operations," but through significant efforts, the *Schutztruppe* remained a durable formation, capable of high tempo, and continuous operations.¹¹⁷

Student Text 3-0, *Operations* states, "Asymmetry becomes significant, perhaps decisive, when the degree of dissimilarity creates an exploitable advantage."¹¹⁸ Lettow-Vorbeck combined his asymmetric advantages with the fundamental characteristics of operational art. He achieved his aim by designating achievable objectives with the resources on hand, consistently retained freedom of action, avoided decisive battle and focused on disrupting the enemy, and varied his methods to maximize his capabilities against enemy vulnerabilities. Lettow-Vorbeck's campaign is not anachronistic. The U.S. Army's challenge in the twenty-first century is understanding how technology influences operational art. The machine gun and artillery increased the killing zone and the defense dominated the Great War. The development of armor vehicles and airplanes blossomed in the Second World War, and freedom of action and offensive *élan* returned to the battlefield. The introduction of nuclear weapons caused the atrophy of operational thinking. The Arab-Israeli War and the Active Defense doctrine validated the return of defensive superiority with the addition of anti-tank guided missiles and air defense systems.¹¹⁹ As the Interim force begins its fielding the Army is presented with an array of sensors that promise information dominance, precision munitions, and stealth technology. How will these new systems change the

battlefield? The question cannot be answered by historians in the distant future, but must be resolved by today's leaders. Regardless of technological marvels, military solutions to strategic aims must effectively apply the fundamentals of operational art to preserve the nation's most precious treasure – the soldier.

Originally printed in Charles Miller, *Battle for the Bundu: The First World War in East Africa*. New York, New York: Macmillan Publishing Company, 1974.



¹ Bernard L. Montgomery, *The Memoirs of Field Marshall Montgomery* (New York, New York: World Publishing Company, 1958), 197.

² Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 1-9.

³ *Ibid.*, 1-9.

⁴ Webster defines guerilla warfare as “military action carried out by small forces in the rear of an enemy with the object of harassing the enemy, interrupting his lines of communication, and destroying his supplies.” It defines insurgent as “a person who rises in revolt against civil authority or an established government.” Neither satisfactorily describes Lettow-Vorbeck’s comprehensive campaign. *Webster’s Third International Dictionary* (Springfield, Massachusetts: G and C Merriam Company, 1976).

⁵ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 3.

⁶ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 2-3.

⁷ Scholars have proposed various definitions and characteristics attempting to distinguish between classical and modern war, and the emergence of operational art. Epstein defines modern war having the following characteristics: strategic war plans that effectively integrate the various theaters of operations; the fullest mobilization of the resources of the state, which include the raising of conscript armies; and the use of operational campaigns by opposing sides to achieve a strategic objective in the various theaters of operation. Robert M. Epstein, *Napoleon’s Last Victory* (Lawrence, Kansas: University Press of Kansas, 1994), 7. Schneider selects several attributes found in operational art: distributed operations, distributed campaign, continuous logistics, instantaneous command and control, operationally durable formations, operational vision, distributed enemy, and distributed deployment. His discussion strongly links technological changes to the birth of operational art. James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, California: Presidio Press, 1994), 31-53. Naveh believes that Soviet operational theory played a key role in the development of U.S. Army doctrine and operational theory. Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Portland, Oregon: Frank Cass Publishing, 2000), 165.

⁸ Carl von Clausewitz, *On War*, ed. and trans by Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1976), 142.

⁹ Shimon Naveh details nine criteria necessary for a concept to be considered operational: First, it must reflect the cognitive tension between the strategic aim and the tactical mission. Second, it must be based on industrious maneuver that expresses interaction between the various elements. Third, the planned action must be synergistic throughout its entirety, produce a product significantly greater than the sum of its components, and synthesis combined arms,, various forms of war, various forces and formations. Fourth, the concept should not aim for tactical destruction but disruption of the system. Fifth, it must reflect a contemplative attitude towards randomness and the interrelation between contentious systems. Sixth, the plan should be non-linear in nature, and should be hierarchally structured and express depth.. Seventh, it must reflect the deliberate interaction between maneuver and attrition. Eighth, the concept must considered ends, ways, and means, and must stand alone within the scope of its mission. Finally, the concept must be related to a broad and universal theory. Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Portland, Oregon: Frank Cass Publishing, 2000), 13-14. Schneider states that the fullest expression of operational art is manifested through several key attributes: distributed operations, the distributed campaigns, continuous logistics, instantaneous command and control, the operationally durable formation, operational vision, a distributed enemy, and distributed deployment. James J. Schneider, *The*

Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State (Novato, California: Presidio Press, 1994) 35-53.

¹⁰ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Portland, Oregon: Frank Cass Publishing, 2000), 10.

¹¹ *Webster's Third International Dictionary* (Springfield Massachusetts: G and C Merriam Company, 1976), 122.

¹² James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, California: Presidio Press, 1994) 26.

¹³ Robert M. Epstein, *Napoleon's Last Victory* (Lawrence, Kansas: University Press of Kansas, 1994), 6-32.

¹⁴ Bruce W. Menning, *Operational Art's Origins*, *Military Review* (September 1997), 14.

¹⁵ James J. Schneider, *The Theory of Operational Art: Theoretical Paper No. 3* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, School of Advanced Military Studies, 1988), 8-9.

¹⁶ James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, California: Presidio Press, 1994), 15.

¹⁷ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 2-2.

¹⁸ *Ibid.*, 2-3.

¹⁹ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Portland, Oregon: Frank Cass Publishing, 2000), 8.

²⁰ *Ibid.*, 126.

²¹ Mao Tse Tung, *Selected Military Writings* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, Combat Studies Institute, 1991), 229.

²² T.E. Lawrence, *The Evolution of a Revolt* (Fort Leavenworth, Kansas: U. S. Army Command and General Staff College, Combat Studies Institute, 1991), 10.

²³ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 2-5.

²⁴ *Ibid.*, 2-4.

²⁵ Carl von Clausewitz, *On War*, ed. and trans by Michael Howard and Peter Paret (Princeton, New Jersey: Princeton University Press, 1976), 258.

²⁶ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, (Portland, Oregon: Frank Cass Publishing, 2000), 11 and 81.

²⁷ James R. Robinson, "The Rommel Myth", *Military Review* (September 1997): 84.

²⁸ Both English and Kipp agree on this point. See John English, "The Operational Art: Development in the Theories of War, and Jacob Kipp, "Two Views of Warsaw: The Russian Civil War and Soviet Operational

Art, 1920-1932. Both essays appear in B.J.C. McKercher and Michael A. Hennessy's, *The Operational Art: Development in the Theories of War* (Westport Connecticut: Praeger Publisher, 1996).

²⁹ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, (Portland, Oregon: Frank Cass Publishing, 2000), 16-17.

³⁰ John English, "The Operational Art: Developments in the Theories of War", ed. B.J.C. McKercher and Michael Hennessy, *The Operational Art: Development in the Theories of War* (Westport, Connecticut: Praeger Publishers, 1996), 14.

³¹ James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State* (Novato, California: Presidio Press, 1994), 30-32.

³² T.E. Lawrence, *The Evolution of a Revolt* (Fort Leavenworth, Kansas: U. S. Army Command and General Staff College, Combat Studies Institute, 1991), 10.

³³ James J. Schneider, *The Structure of Strategic Revolution: Total War and the Roots of the Soviet Warfare State, State* (Novato, California: Presidio Press, 1994), 32.

³⁴ Mao Tse Tung, *Selected Military Writings* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, Combat Studies Institute, 1991), 235.

³⁵ Naveh's elements of operational maneuver are fragmentation, simultaneity, and momentum. Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, (Portland, Oregon: Frank Cass Publishing, 2000), 215-221.

³⁶ Richard Simpkin, *Deep Battle: The Brainchild of Marshall Tukhachevskii* (New York, New York: Brassey Defense Publishing 1987), 32.

³⁷ *Webster's Third International Dictionary* (Springfield, Massachusetts: G and C Merriam Company, 1976), 2122.

³⁸ Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare*. 2nd ed. (London, England: Brassey Defense Publishing, 1986), 148.

³⁹ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 5-12.

⁴⁰ *Ibid.*, 5-12.

⁴¹ Richard Simpkin, *Deep Battle: The Brainchild of Marshall Tukhachevskii*, 260.

⁴² Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 5-10.

⁴³ *Student Text 3-0 Operations*, Offensive operations are discussed in Chapter 7 and defensive operations discussed in Chapter 8.

⁴⁴ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory*, (Portland, Oregon: Frank Cass Publishing, 2000), 219.

⁴⁵ *Ibid.*, 212.

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- ⁴⁶ Joint Staff, Publication 4-0, *Doctrine for Logistic Support in Joint Doctrine* (Washington D.C. :” Government Printing Office, 6 April 2000), IV-7.
- ⁴⁷ James J. Schneider, *The Theory of Operational Art: Theoretical Paper No. 3*, 23.
- ⁴⁸ Hugh Lane, *The East African Campaign 1914-1918* (Fresno, California: California State University, Thesis for Masters Degree, December 1994), 76.
- ⁴⁹ *Schutztruppe* is the German term for colonial soldier.
- ⁵⁰ British East Africa is now known as Kenya, the Belgium in now known as Zaire, Portuguese East Africa is now Mozambique and German East Africa is now the countries of Tanzania, Rwanda, and Burundi.
- ⁵¹ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 13.
- ⁵² United States Military Academy, *The Great War*, (West Point, New York: Department of History, 1979), 145.
- ⁵³ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 4.
- ⁵⁴ Barry Taylor, “Prussian Jungle Tactics”, *Military History* (August 1992), 8.
- ⁵⁵ G.G. Parks, *A Critical Analysis of the Operations in German East Africa 1914-1918* (Fort Leavenworth, Kansas: Command and General Staff School, 1934), 8.
- ⁵⁶ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 30.
- ⁵⁷ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 30.
- ⁵⁸ David Rooney, “A German Guerilla Chief in Africa,” *Military History Today* (November 1999) 28.
- ⁵⁹ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 125.
- ⁶⁰ Charles Turquin, “Dreadnoughts on the Lake,” *Military History* (August 1991), 26. Hugh Lane, *The East African Campaign 1914-1918* (Fresno, California: California State University, Thesis for Masters Degree, December 1994), 40.
- ⁶¹ Aitkens was a thirty-five year veteran of the British Army who had last seen overseas duty as a subaltern in 1870. He was overweight, describe as physically and mentally lazy, and had never served with the infantry. He was immensely unqualified to hold this command and his short lived tenor as commander of British East Africa was labeled as an embarrassment in the British Official History. Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 163.
- ⁶² Aitkins kept some of his Indian army units afloat for up to two weeks before the attack causing a significant health and moral problems. The fourteen troop transport ships and two escort cruisers remained within visual range of the coast the entire movement south. The brigade attacking by land traversed some of the most disease infested low country in East Africa and arrived at Tanga in equally poor condition. The deception effort to Longido was poorly planned. The men crossed twenty miles of trackless desert with only a vague notion of the enemy they were to attack. They arrived at Longido out of water, were easily

defeated by a three hundred man force in dug in positions, and forced to withdraw across the desert with wounded and still no water. The distance between Tanga and Longido is 175 miles – to distant to be a worthwhile deception effort and added nothing to the main efforts attack on Tanga.

⁶³ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 36.

⁶⁴ The supplies the German captured included 600,000 rounds of ammunition, new rifles, sixteen machine guns, clothes, food, and medicine. Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 44.

⁶⁵ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 181. Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 48.

⁶⁶ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 57.

⁶⁷ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 201.

⁶⁸ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 63.

⁶⁹ *Ibid.*, 63.

⁷⁰ The new British commander was General Tighe. Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 65.

⁷¹ The tactics used by the small patrols resemble twenty-first century Special Forces operations. They were to conduct clandestine action against fixed structure using explosive, gather intelligence about large bodies of soldiers, and avoid detection and engagements. The innovative Germans built very effective pressure detonated land mines to destroy locomotives. When the British began to place empty cars in front of the locomotive, the Germans developed a delay fuse that detonated after a certain number of wheels passed over the mine. Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 64.

⁷² Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 66-67.

⁷³ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 72.

⁷⁴ George King, *A Study of the Operations in German East Africa During the World War, 1914-1918* (Fort Leavenworth, Kansas: U.S. Army Command and Staff School, 1930), 6.

⁷⁵ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 250.

⁷⁶ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 80.

⁷⁷ Winston Churchill, First Lord of the Admiralty stated on 5 September 1914, “ No convoys or transports are to go across the Indian Ocean or Red Sea unless escorted by at least two war vessels, one of which must

be stronger than the *Koenigsberg*.” Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 48. Lane discusses the *Koenigsberg*'s operations in detail. Hugh Lane, *The East African Campaign 1914-1918* (Fresno, California: California State University, Thesis for Masters Degree, December 1994), 33.

⁷⁸ Charles Turquin, “Dreadnoughts on the Lake,” *Military History* (August 1991), 26.

⁷⁹ Hugh Lane, *The East African Campaign 1914-1918* (Fresno, California: California State University, Thesis for Masters Degree, December 1994), 41.

⁸⁰ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 98.

⁸¹ Bryon Farwell, *The Great War in Africa, 1914-1918* (New York, New York: W.W. Norton and Company, 1986), 269.

⁸² Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 100.

⁸³ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 123.

⁸⁴ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 114.

⁸⁵ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 191

⁸⁶ *Ibid.*, 150.

⁸⁷ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 119.

⁸⁸ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 140.

⁸⁹ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 131.

⁹⁰ *Ibid.*, 136.

⁹¹ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 228.

⁹² An example of the starting strength of several regiments in March 1916 and their strength after the Battle of Kisaki: the North Lancashire Regiment went from 900 to 345 soldiers; the 25th Fusiliers went from 1200 to 200; and the Ninth South African Infantry went from 1135 to 120 soldiers. Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 138.

⁹³ Miller quotes 28000 animals dying during the period September to December 1916. Farwell cites 70000 animals dying from June to December. Hoyt states that the British brought 60000 animals south in March. By December 54000 had perished from the long march, disease or simple exhaustion. The British were dependent on pack animals to maintain their lines of communication and this was a crippling blow. Charles

Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 275.

⁹⁴ British use of carriers went from 7500 in January 1917 to 135000 in a few months. By the summer of 1917, ninety percent of the British force was East African. Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 256.

⁹⁵ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 212.

⁹⁶ *Ibid.*, 212.

⁹⁷ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 289. Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 214.

⁹⁸ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 222.

⁹⁹ The L59 was 740 feet long, powered by 1200 hp engines, and could cruise at 68 mph for a distance of 10,000 miles. Hugh Lane, *The East African Campaign 1914-1918* (Fresno, California: California State University, Thesis for Masters Degree, December 1994), 84.

¹⁰⁰ Captain King cites two independent German sources for this story. First, an unnamed officer described as the “highest ranking officer of the German Republic” who visited Fort Benning on 10-11 November 1927. When questioned by a member of the Infantry School’s Historical Section on what was the purpose of L59, the German officer said it was to bring Lettow-Vorbeck to the Western Front. Kings second source was Major N.C. Cureton, a faculty member of the Command and General Staff School, Fort Leavenworth. Cureton met a Captain Speidel of the Germany Army during his visited Fort Leavenworth in March 19130. Captain Speidel admitted that L59’s purpose was to return Lettow-Vorbeck for duty on the Western Front.

¹⁰¹ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 295.

¹⁰² Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 231-235.

¹⁰³ *Ibid.*, 249.

¹⁰⁴ *Ibid.*, 250.

¹⁰⁵ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 305.

¹⁰⁶ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 188.

¹⁰⁷ *Ibid.*, 195.

¹⁰⁸ Edwin P. Hoyt, *Guerilla: Colonel von Lettow-Vorbeck and the East African Campaign* (New York, New York: Macmillan Publishing Co, 1981), 195.

¹⁰⁹ Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 315.

¹¹⁰ Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 301.

¹¹¹ Ironic yet appropriate that Lettow-Vorbeck seized a captured courier and knew before van Deventer that the war was over. Paul von Lettow-Vorbeck, *My Reminiscence of East Africa*, 2nd Edition (London, England: Hurst and Blacket, 1924), 315.

¹¹² Barry Taylor cites the story of Churchill naming Lettow-Vorbeck as a choice for German leader in post war Germany. Barry Taylor, "Prussian Jungle Tactics", *Military History* (August 1992) 15. Charles Miller, *Battle for the Bundu: The First World War in East Africa* (New York, New York: Macmillan Publishing Co, 1974), 331.

¹¹³ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 1-9.

¹¹⁴ The infamous US Navy ship that was denied access to Port-au-Prince, Haiti in October 1993, and was eventually driven off by hired thugs and drunken dockworkers.

¹¹⁵ Michael Mehaffey, "Vanguard of the Objective Force," *Military Review* (September 2000), 6.

¹¹⁶ John S. Brown, "Of Battle and Disease," *Parameters* (June 1982) 16-24.

¹¹⁷ James J. Schneider, *The Theory of Operational Art: Theoretical Paper No. 3*, 23.

¹¹⁸ Department of the Army, *Student Text 3-0, Operations* (Fort Leavenworth, Kansas: U.S. Army Command and General Staff College, October 2000), 4-31.

¹¹⁹ David Glantz, "The Intellectual Dimension of Soviet Operational Art." Ed. B.J.C. McKercher and Michael Hennessy. *The Operational Art: Development in the Theories of War*. Westport, Connecticut: Praeger Publishers 1996.

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