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BY

COLONEL WILLIAM C. COCKERHAM

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This paper examines Clausewitz's concept of the culminating point of victory (CPV) to analyze the World War II North African campaigns of Rommel and Montgomery. The goal of the paper was to determine how CPV is seen in the conditions under which these commanders waged their campaigns. A framework of analysis, based largely upon the ideas of Clausewitz and to a much lesser extent on Rommel, was developed to determine the status of CPV for each major battle. This framework consisted of ascertaining the state of (1) personnel, (2) fixed assets, (3) ground, (4) supplies, (5) cohesion, (over)

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(6) allies, (7) morale, (8) leadership, (9) vigor, and (10) time at appropriate periods. For the campaigns under analysis, vigor and supplies were found to be the most critical variables -- with supply having the greatest influence upon the outcome in North Africa.

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An Individual Essay

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CLAUSEWITZ'S CONCEPT OF CPV IN THE NORTH AFRICAN CAMPAIGNS OF ROMMEL AND MONTGOMERY

The purpose of this paper is to examine Carl von Clausewitz's concept of the culminating point of victory (CPV) from the standpoint of the World War II North African campaigns of Germany's Erwin Rommel and Great Britain's Bernard Montgomery. In his classic work on On War, Clausewitz points out that every offensive (even victory) can have a culminating point.[1] That is, some point in a battle or campaign is the exact point that victory can be achieved, but short of that point or beyond it, failure, defeat, or stalemate can result. It therefore becomes the particular challenge of the military leader to ascertain this point when planning operations against the opposing force.

An example of this situation is found in Clausewitz's discussion of the culminating point of the attack.[2] Clausewitz explains that in the course of the attack, the attacker's forces will generally be reduced as the attack continues. Thus, the attacker pays for his gains with a reduction of strength. If the attack leads to victory, then the expenditure of resources is likely to have been worth the price. This is especially true if the attack has been overwhelming and the defender's forces destroyed or routed. But usually the force of an attack over time will begin to diminish, requiring the attacker to go over the defense and consolidate his gains while awaiting a counterattack, reinforcements to continue the advance, or the conclusion of the war. Going beyond this point with weakened forces, the situation is likely to change in Clausewitz's view and a reaction can follow that overwhelms the original attack. Clauswitz maintains: "It would in fact be a damaging one, which would lead to a

reaction; and experience goes to show that such reactions ususally have completely disproportionate effects."[3] The attack can be turned into a retreat and losses are always heavier when retreating.

Consequently, we see that there is an erosion of the offensive. Both the attacker and defender lose resources, but the longer the attack and the conduct of the defense continues, the greater the likelihood of diminishing force -- especially for the attacker. This situation provides the prudent and skillful defender, who has maintained a strong reserve, the opportunity to counterattack effectively and change the course of battle. This approach was favored by Marshal Georgi Zhukov, for instance, in the successful Soviet defense of Moscow, Stalingrad, and Kursk during World War II.[4]

The key factor, of course, as Clausewitz observes, "is to detect the culminating point with discriminative judgment."[5] And here the experiences of Field Marshals Rommel and Montgomery can be utilized to help us better understand how the culminating point of victory influences a campaign. Such a determination is, after all, a complex process because of all the various factors that contribute to success or failure on the battleground. Yet it is at best a subjective judgment. Clausewitz explains that the commander invested with responsibility for the conduct of a campaign must consider an array of factors, both major and minor, in order to realize the possible outcome of various courses of action and fix the point in his plan where victory can be achieved. Clausewitz observes that this is no small achievement and states: "Thousands of wrong turns running in all directions tempt his perception; and if the range, confusion and complexity of the issues are not enough to overwhelm him, the dangers and responsibilities may."[6]

Therefore, Clausewitz concludes that in conditions of uncertainty, most generals will prefer to stop short of their objective instead of taking the risk of approaching too closely, or those with great courage and spirit will often overshoot it and consequently fail to attain their purpose. What makes Rommel and Montgomery of particular interest in the study of the CPV is that Rommel appears to be overzealous in his pursuit of it, while Montgomery could be regarded as over cautious and likely to stop short rather than take a risk of overshooting his objective and being repulsed in the process. Hence, in this analysis, the personality of the principal subjects is a study in contrasts as each maneuvered to achieve victory over the other.

Our goal in this paper is to determine how CPV is seen in the conditions under which these Commanders waged their campaigns. And in doing so, determine the appropriate lessons for future war that emerges from the analysis. We will begin our discussion with Rommel, followed by an analysis of Montgomery, and then attempt to draw the appropriate distinctions. Our framework of analysis, as suggested by Clausewitz, consists of the following: Each major campaign by Rommel and Montgomery in North Africa will be rated on the status of (1) personnel (number of troops), (2) fixed assets (depots, fuel and ammunition sites, ports and loading facilities, etc.), (3) ground (the gain or loss of territory), (4) supplies (level of supply including availability of fuel and combat-ready tanks), (5) cohesion, (6) allies, and (7) morale. The accumulation of assigned positive versus negative status indicators will be used to show how CPV can be utilized to analyze the ultimate outcome of the fighting.

However, as our analysis was underway, it was found that the seven variables suggested by Clausewitz in his section on CPV did not provide a complete framework for assessing CPV. For example, at the end of the 1941-42 Winter Campaign in North Africa, the ratings showed Rommel with more negative conditions (personnel, fixed assets, ground and supply) than positive (cohesion, allies, and morale). Yet Rommel was subsequently to take the offensive, something these ratings do not seem to reflect is likely given the negative conditions facing him. What is missing from the analysis is suggested by Clausewitz in his chapter on military genius and Rommel himself in The Rommel Papers.[7]

First, leadership or what Clausewitz describes as military genius is needed as an eighth variable since it is the leader's "genius" that determines the CPV and provides his soldiers with the psychological environment to achieve it. Leadership is essentially a quality of mind and character in Clausewitzian terms. From the standpoint of mind, Clausewitz refers not only to intellect and insight, but also to courage and determination since the latter are created by the intellect. Character consists of energy, firmness, staunchness, emotional balance, and strength of character. Each of these factors combine to form an image of leadership on behalf of the commander and this image determines the degree to which he is able to project his will upon his soldiers. Rommel, likewise, notes the importance of leadership in achieving objectives and believed in leading from "the front," that is, in being an example to his men. Therefore, leadership cannot be overlooked as a key variable in assessing CPV.

Furthermore, although Clausewitz includes energy as part of military genius, its significance suggests that it should be a variable in its own

right. Clausewitz points out, after all, that "it is primarily this spirit of endeaver on the part of commanders at all levels, this inventiveness, energy, and competitive enthusiasm, which vitalizes an army and makes it victorious."[8] But it is Rommel who makes the distinction between mind and energy seem particularly important when he states: "A commander's drive and energy often counts for more than his intellectual powers--a fact that is not generally understood by academic soldiers, although for the practical man it is self-evident.[9] Consequently, a ninth variable aded to our list is vigor which refers to the energy by which the campaign is prosecuted by the leadership.

Another factor that is suggested through reading of The Rommel Papers is that of time. Rommel comments:

> Probably never before in modern warfare had such a completely unprepared offensive as this raid through Cyrenacia been attempted. It had made tremendous demands on the powers of improvisation of both command and troops, and in some cases commanders had been unable to reach their objectives. One thing particularly evident had been the tendency of certain commanders to permit themselves unnecessary delays for refueling and restocking with ammunition, or for a liesurely overhaul of their vehicles, even when an immediate attack offered prospects of success. The sole criterion for a commander in carrying out a given operation must be in the time he is allowed for it, and he must use all his powers of execution to fulfill the task within that time.[10]

Thus, for Rommel, vigor in the prosecution of the campaign is essential, but also critical is the amount of time available to achieve success before the situation changes. In other words, Pommel maintains that a commander must take advantage of opportunities as they present themselves. but such opportunties are lodged in a particular point in time and failure

to act at that point signifies loss of the opportunity. Time passes and brings different circumstances. hence, failure to act in concert with the time window means that the commander is left to deal with conditions and situations at the next time period where opportunities to exploit a weakness on the part of the opposing force may no longer exist or exist in a less positive manner than before. Clausewitz also recognizes the importance of time by pointing out that in the defensive an army plays for time, while the offensive minimizes the loss of tire. Consequently, the variable of time will be added to our analysis as the tenth factor to be considered in determining the influence of CPV on the campaigns reviewed.

Before proceeding, however, it is interesting to note a characteristic of Rommel's as indicated in the previously cited quotation (footnote ten) which ultimately came to be an essential factor in the fighting. If it was a question of attack, or be resupplied, Rommel clearly favored the timely attack. Vigor and time, therefore, seem to be important at the expense of supply in Rommel's view, which underscores his tendency to overreact his CPV. And yet supply, as will be seen, is eventually his undoing--although vigor and time allowed him to achieve surprising results while in a negative supply situation.

ROMMEL

Rommel's World War I experience is relevant to understanding his approach to CPV. During this war he proved himself to be a daring and courageous soldier as he led small infantry units in combat on the Western, Rumanian, and Italian fronts--winning Germany's highest decorations for heroism (the Iron Cross first and second class, and the Pour le Merite). It is interesting to note that Rommel's combat experiences tool place on

fronts where the fighting was relatively open and German forces were dominant, rather than being tied down to the trench warfare that was to turn the Western Front into a bloody stalemate after 1914. Thus, Rommel's style of warfare remained one of mobility and offensive spirit. Lewin maintains that had Rommel remained on the Western Front he likely would have been killed because of his aggressive temperment. Lewin says this about Rommel:

> But he missed the Western front; and this is an important factor in an interpretation of his personality and his method of command. Because his practical experience was gained in mobile operations with infantry, he found no difficulty in adjusting later to mobile operations with armour. Because he escaped the trenches in the West, he was never affected by that 'seige warfare' mentality which, consciously or subconsciously, distracted commanders in the Second World War who had been junior officers in Flanders.[12]

Rommel's first opportunity to achieve CPV as a major commander came in France in 1940 during World War II. His performance in France was superb as he turned in an impressive demonstration of the use of armor in spearheading the advance. The speed and distance covered by Rommel's division, the 7th Panzer Division, across France earned it the nickname of the "Ghost Division". Rommel's troops forced a crossing at the Meuse River and exploited the crossing so successfully that French defenses in the area of northern France were decisively disrupted. In six weeks, the 7th Panzer Division advanced 350 miles (220 miles in the last four days), captured 97,000 prisoners, 485 tanks and armored cars, 4,000 trucks, and hundreds of artillery pieces while sustaining light casualties in the process. Douglas-Home states:

> His campaign in France was the only one he fought--six weeks--as a divisional commander. Looking back on his life it is probably the summit of his military achievement or the one of which one could say that his capacity for it was most complete, his military qualities most appropriate. Yet it was Rommel's African campaigns, rather than the French one, which are best remembered now.[13]

Thus, when it came to be that a German commander was needed to reverse Axis fortunes in North Africa, Hitler decided Rommel was the right man to restore the situation. Hitler reportedly selected Rommel because he knew how to inspire his troops and was not tainted with the defeatism associated with the theatre.[14]

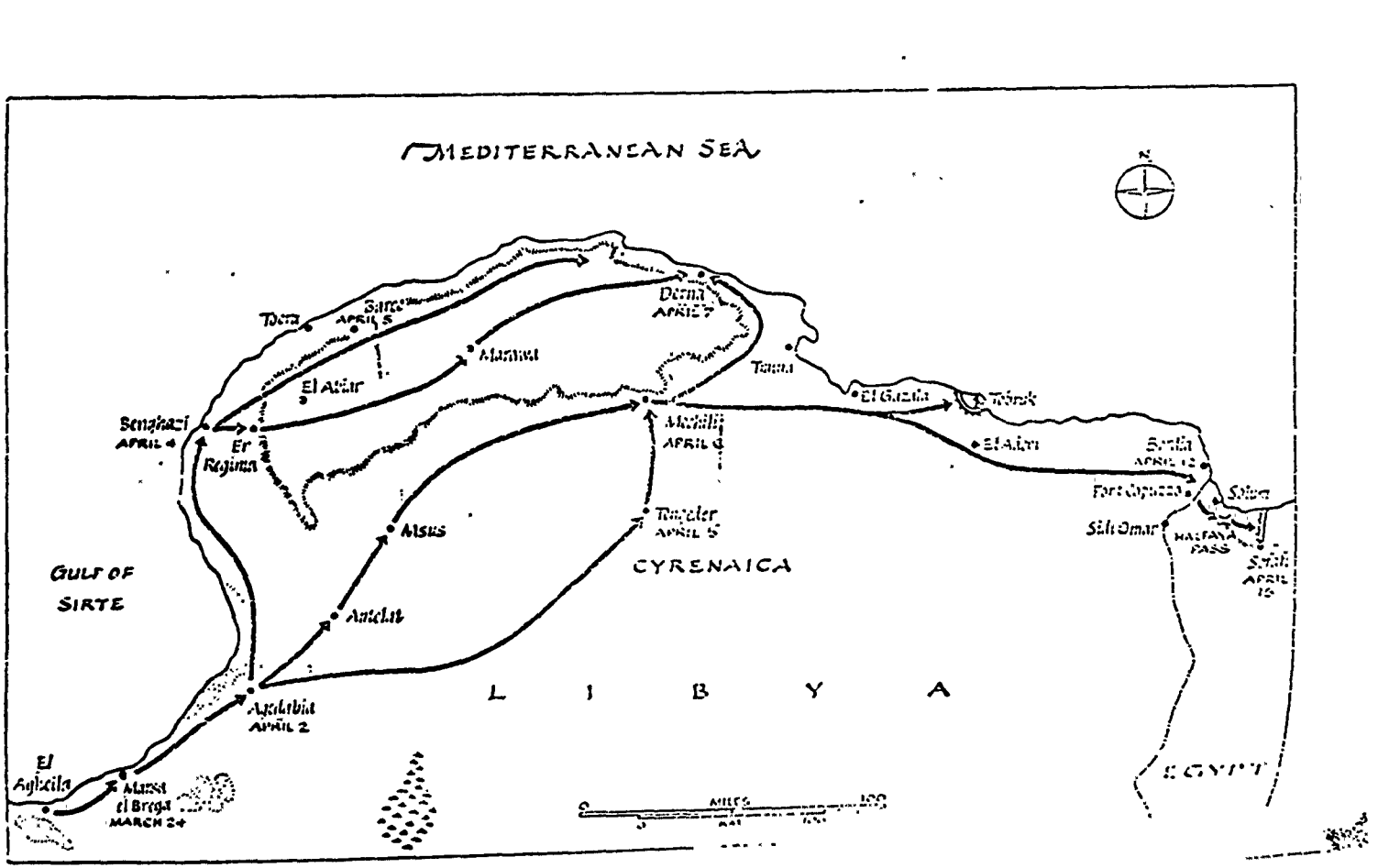
Rommel arrived in Libya on 12 February 1941 and found the Italian army in full retreat toward Tripoli. His orders were to hold existing Axis positions in the province of Tripolitania and establish the basis for future operations. Previously, British and British Commonwealth forces under General Sir Richard O'Connor had pushed the Italians back 400 miles from the Egyptian border and in the process destroyed ten divisions, taken 130,000 prisoners, and seized large amounts of supplies and equipment. Rommel was not expected by either the Axis or Allied high commands to undertake any serious operations in the immediate future because he had only one reliable unit available--the German 5th Light Division. The rest of his forces were comprised of the Italian Ariete Armored Division and four low quality Italian infantry divisions. Opposing him, however, were only two untried and understrength divisions in the adjacent province of Cyrenaica, the British 2nd Armored Division and the 9th Australian Division. An Indian motorized infantry brigade completed the Allied contingent in the area. Other British and Allied units had been sent to Greece to repel the German invasion there or were refitting in Egypt.

Rommel's First Offensive (March-October 1941)

Rommel had not been specifically ordered to refrain from offensive operations and the situation in Cyrenaica appealed to him. Aggressive patrolling in late March soon turned into a reconnaisance in force. But El Agheila fell easily on 24 March and by 31 March Rommel turned his actions into a full offensive (see map 1) that was to last until October. Next Rommel took some other small villages and, defying orders from his superiors who believed his forces to be inadequate, he took Agedabia on 2 April. Pushing his troops even harder, Rommel drove to within 100 miles of Tobruk on 9 April. To complicate the situation for the British, Rommel had captured General O'Connor and his staff. General Sir Archibald Wavell, the British Commander-in-Chief for the Middle East, responded by leaving Tobruk heavily garrisoned and placed his remaining forces on the Egyptian frontier.

Rommel immediately launched attacks against Tobruk, but they were piecemeal, poorly coordinated, and lacked air support. Tobruk held as Rommel awaited reinforcements and worried that the Allies would have time to become much stronger. While some Axis forces invested Tobruk in early April, other units pressed eastward toward the Egyptian border and established a defensive line inland from the Sollum and Halfaya Passes. The line rested on the sea in the north with the fortified town of Bardia in the rear; to the south, the position ran until it simply ended since there was nothing to anchor it on the desert. Rommel employed Italian infantry units, with some German support, to hold the defensive line. German and Italian mobile troops were left in the rear to forestall any attempt to turn the southern flank. On 15 June the British counterattacked,

MAP 1: ROMMEL'S ADVANCE



but were stopped by a determined defense using 88 mm anti-aircraft guns effectively in an anti-armor role. With the newly-arrived 15th Panzer Division in the vanguard, Rommel delivered a counterstroke on 16 June which left the Allies with heavy losses and little to show for their offensive. Wavell was replaced by General Sir Claude Auchinleck and the front remained quiet for the next five months as both sides made preparation to continue the war.

In Rommel's first offensive, we see that his initial objective was the conquest of Cyrenaica, the second was northern Egypt, and the ultimate CPV was the Suez Canal. If Rommel could reach the Suez, it appears reasonably certain that he would achieve victory. Allied strength would likely have been spent and there was strong anti-British sentiment in Egypt.

Rommel took his first objective, but still had his second objective and the CPV at the Suez in front of him. Nevertheless, as we look at Table 1 it appears that the end of his initial offensive, Rommel stood in a relatively good position. Table 1 shows positive (+) or negative (-) ratings for Rommel's situation in relation to personnel, fixed assets, ground, supplies, cohesion, allies, morale, leadership, vigor, and time. Table 1 reflects the fact that only in supplies (because of Allied interdiction of the sea and air lanes of communication, plus the length of his supply lines along the northern coast from Tripoli and the damaged port at Benghazi) is the rating negative. In terms of German personnel, Rommel had been reinforced with the 15th Panzer Division. He redesignated the 5th Light Division as the 21st Panzer Division and formed a new division, the 90th Light, from a number of extra units in the theater. In addition, he

now had six Italian divisions instead of five. he had gained fixed assets and ground, while morale and cohesion remained good.

Rommel had also gotten along well with the Italian troops under his command (despite problems with the Italian general officers who were nominally his superiors). Rommel thought ordinary Italian soldiers were good, but their officers were worthless.[15] And his level of leadership and vigor remains highly positive. But the negative rating for supplies is critical because it signifies an eroded position in both supplies and equipment, especially tanks. Yet in October 1941, Table 1 suggests that Rommel's situation in relation to achieving the ultimate CPV is promising. however, it should be noted that the ultimate CPV for Rommel was not realistic given his eventual personnel and logistical situation. He never was given the resources to achieve it. A more realistic CPV under the circumstances would have been the taking of Cyrenaica and the defeat of the Allies at Tobruk.

It was Auchinleck who attacked first. On 18 November 1941 the Allies attacked the Sollum-Halfaya line frontally, while armor forces attempted to envelop Rommel's southern flank. While progress was made against the Axis front, a major tank battle developed southeast of Tobruk which was complicated by the British Tobruk garrison attempting to push out of its encirclement and linking up with the oncoming Allied forces. Instead of fighting the battle where he stood, Rommel made a mistake by trying to launch a sweeping blow against the British rear area by raiding into Egypt. But the command and communications structure of the Axis forces was simply not up to task, particularly after the three days of confused

TABLE 1. Assessing Rommel's Potential for CPV

	Rommel's 1st Offensive (Mar.-Oct. 1941)	Winter Campaign (Nov. 1941-Jun. 1942)	Rommel's 2nd Offensive (Jun.-Jul. 1942)	Alamein (Aug.-Nov. 1942)	Rommel's Retreat (Nov.-Dec. 1942)
Personnel	+	-	+	-	-
Fixed Assets	+	-	+	+	-
Ground	+	-	+	-	-
Supplies	-	-	-	-	-*
Cohesion	+	+	+	+	+
Allies	+	+	+	+	+
Morale	+	+	+	+	+
Leadership	+	+	+	+	+
Vigor	+	+	-	+	+
Time	+	+	+	-	-

*Accumulated Effect Decisive

fighting that had just about taker place among the armor units south of Tobruk. Many units never received their orders and others were unable to get underway on time. The attack failed and, in the meantime, British formations approaching Tobruk from the south were able to effect a junction with the Tobruk garrison on 27 November.

Rommel's raid to the east had allowed him to regain some of the ground he had lost initially to his front, but his armor units were depleted and he withdrew to the Gazala line on 4 December. In the retreat, an Italian division was left to surrender in Bardia and considerable equipment was abandoned. In order to save his army, Rommel fell back from Gazala and reestablished his defenses at El Agheila where he had begun his first campaign in March. At this point, Rommel seemed beaten and the British did not expect anything from him for some time to come.

Yet, as Table 1 shows for the Winter Campaign of November 1941 - June 1942, Rommel maintained his positive rating with respect to cohesion, allies, morale, time, and most significantly, vigor (personnel, fixed assets, ground, and supplies were negative indicators). Thus, on 21 January 1942 with only 160 tanks, of which half were unreliable Italian vehicles, Rommel caught the British by surprise in a counteroffensive and advanced to the old Gazala line before being halted more by lack of fuel and supplies than anything else.

Rommel's Second Offensive (June-July 1942)

For four months the Axis and Allied Armies faced each other across the Gazala line while making preparations to renew the battle at some future

date. Both commanders were under pressure to resume the fighting, but neither intended to take the offensive with less than the optimum supply situation. Meanwhile, the logistics posture of both forces improved considerably. By late May 1942 it had become obvious to Rommel, however, that Allied preparations for an offensive were beginning to outpace his own.

He therefore determined to launch an offensive before the Allies were too strong and did so on 26 May - 13 June. The attack did not go according to plan. Rommel was able to turn the British flank, but could not smash through to their rear and, at one point, his armor units were actually surrounded. Rommel managed to reestablish his lines of communication and move forward toward Egypt, capturing Tobruk with nearly 35,000 prisoners and considerable supplies on 20-21 June. The remaining Allied forces fell back to the Alamein line and Rommel continued to press the attack even though his momentum had slowed and his supply situation worsed because of Allied interdiction of his sea LOCs through their base in Malta (Rommel had refused to release aircraft attached to him for his offensive which were scheduled to attack Malta). Toward the end of July the fighting at the First Battle of Alamein ended in a stalemate as both sides were exhausted. Yet for the British it was a major victory as Rommel had squeezed every ounce of energy from himself and his troops to break the Allied defense and failed.

Thus, at the end of the first battle for Alamein, negative conditions predominated for Rommel not only in regard to vigor (Rommel himself was ill and went on leave to Germany), but also for supplies. These two variables,

shown in Table 1, were decisive in reflecting the reality of Rommel's situation. On the surface, Rommel's position looked satisfactory with the British pushed back to Egypt and positive ratings for personnel (reinforcements were coming in), fixed assets, ground, cohesion, allies, leadership, and even morale was high. He still had time to achieve the utlimate CPV. But negative ratings for vigor and supplies undermined Rommel's circumstances fatally.

Alamein (August-November 1942)

As both armies began rebuilding their strength, General Sir Bernard Montgomery took command of the British Eighth Army which comprised the Allied ground forces facing Rommel. Montgomery was the second choice for the position, but received the command when the first choice (General Gott) was killed in a plane crash. The Allied buildup outstripped kommel's, as the long distances from Rommel's ports in western Libya consumed scarce fuel just to deliver supplies to frontline forces. Rommel's units were always short of ammunition, supplies, and fuel. Rather than allow the Allies to buildup a preponderance of force, Rommel again decided to attack. In this circumstance, it might have been prudent for Rommel to redefine his CPV. But he did not and the Axis ran into strong and well-planned British defenses as they attacked on 30-31 August. They were also hampered by significant fuel shortages. The Axis were stopped after a two-day battle at Alam al-halfa Ridge and withdrew. Montgomery did not pursue and Rommel was able to reestablish his defensive line at Alamein.

But for all practical purposes the battle for Alamein was over. In many ways the famous (Second) Battle of El Alamein (23 October-4 November)

was anti-climatic. Rommel's last chance to win was at Alam al-Halfa. His defensive action against Montgomery in October was hopeless before it began. For by October, Allied material superiority was so great that the British could trade tanks and troops with the Axis and still come away the victor. Montgomery had 1,029 tanks compared to 230 German and 320 (poor quality) Italian tanks, and 195,000 troops compared to 46,000 (of whom 29,000 were fit to fight) for Rommel. For weeks, the Axis had been on half rations because of the supply shortage. There was fuel for only three days of sustained combat. In addition, Operation Torch had deposited a large Allied army in Morrocco and Algeria that threatened Rommel's rear with overwhelming force. Montgomery basically fought a World War I-style battle of attrition against Rommel, but had the resources to do it. Moreover, through the use of Ultra, Montgomery had radio intercepts of Rommel's plans and troop dispositions, as well as a strong supply situation. Montgomery clearly had the upperhand.

The Germans and Italians put up a stiff fight initially, causing heavy Allied casualties as Montgomery sought to push a hole in their lines with a massive assault at one point. Rommel, who was sick and had been hospitalized in Germany, was forced to return. Although tired and ill, Rommel threw himself into the fight and counterattacked. The attacks failed and the British, in turn, achieved their breakthrough which they exploited with tanks. Rommel might have gotten away with most of his army, but Hitler ordered him not to retreat and the Axis troops held their ground for some 36 hours before Hitler finally agreed to a withdrawal. The delay cost Rommel 25,000 infantry troops (mostly Italian) who were left without transport. But the bulk of Rommel's armor forces escaped in the face of sluggish pursuit.

Table 1 shows that Rommel was in a negative status for personnel, ground, and supplies at the conclusion of Alamein. He was also running out of time. Despite being sick, however, he still showed vigor and had positive ratings for fixed assets, cohesion, allies, and morale, and leadership. The positive rating for vigor indicated that Rommel was still dangerous more so than any other variable listed.

The Retreat (November-December 1942)

Rommel retreated from Alamein with the equivalent of two divisions which was all that he could salvage from the twelve understrength divisions present for duty at the beginning of the battle. Yet the survivors came out in good order, with their morale high and a determination to survive. With an insignificant force, half German and half Italian, Rommel fought a brilliant delaying action against the British. The Axis troops would halt, set up a defensive position, and then fall back as the Allies failed in achieving a turning movement to pin the Axis against the coast. Energetic use of mines, both real and dummy, helped hinder the Allied advance and resupply efforts. But there was really no hope for Rommel as by 9 November he had only twenty-one tanks and some 7,500 men. The only other force in Libya was a weak Italian infantry division without transport. Libya was completely abandoned and by January the Axis forces had retired to Tunisia.

At the conclusion of the retreat, Table 1 shows Rommel with "negative" ratings for personnel, fixed assets, ground, supplies and time. Positive ratings are still maintained for cohesion, allies, morale, leadership, and vigor. The major lesson to be drawn from the ratings in Table 1, however,

is that throughout his campaign to achieve CPV, Rommel had a negative supply status and eventually the accumulation of this handicap proved decisive--even over vigor and time.

Once in Tunisia and with the war in North Africa essentially lost, troops and supplies were poured into the country to try to save the situation. Rommel was replaced as commander-in-chief and returned to Germany in March 1943. Before leaving, he launched a highly successful ambush against the Americans at Kasserine in mid-February and a thwarted counter-attack against Montgomery in early March. For Rommel, the war in Africa ended without realization of the CPV.

MONTGOMERY

Montgomery's World War I experience, like Rommel's was important in understanding his manner of assessing CPV.[16] Montgomery served on the Western Front where he earned the D.S.O. as a platoon leader. After recovering from wounds, he spent the remainder of the war as a staff officer. Montgomery was left after the war with a strong revulsion about the unnecessary casualties he witnessed; while he recognized that casualties were inevitable in battle, he rejected the notion troops should be fed into combat when there was no advantage to be gained from it. Losses mattered in his view and individual soldiers needed to feel that they were important. In order to accomplish the above, Montgomery came to believe that soldiers should not be sent into battle unless every effort has been made to provide for their success. This meant meticulous and thorough planning, as well as strong staff support at every level.

Between the wars, Montgomery served in a variety of troop assignments, as a Staff College Instructor, and directed the writing of a new manual on infantry tactics (which, by the way, lacked a strong concept of exploitation following a successful attack--something that was to be seen in Montgomery's own operations in North Africa).

For Montgomery, the ultimate CPV was to eject the Axis forces from North Africa. In his first battle, the second battle for Alamein, Montgomery showed his characteristics of careful and detailed planning, rehearsals, coordination of fire, and thorough preparation throughout the command. As noted, Rommel's attack was halted with heavy losses and Montgomery was able to penetrate the Axis defenses with a straightforward infantry assault heavily supported by armor. According to Chalfont, Montgomery's plan was not especially imaginative but what distinguished his conduct of the battle was that as the plan faltered in the face of an effective defense, he kept up the pressure and eventually broke through.[17] Of course, he had the manpower and material superiority to cause a gradual suffocation of Axis' units. While Montgomery may not have been dashing in his approach, he was nonetheless effective as he brought quantity to bear on his enemy whose logistics system lacked the capability to withstand sustained heavy pressure.

Table 2, assessing Montgomery's CPV, shows that Montgomery at the conclusion of the fight for Alamein had virtually a lock on victory with positive ratings for all variables. The positive status continues for the final two components in Table 2, Rommel's retreat and the final assault. The victory at Alamein was decisive and at that point it was just a matter of time until Montgomery achieved CPV unless Rommel would be able to

TABLE 2. Assessing Montgomery's Potential for CPV

	Alamein (Aug.-Nov. 1942)	Rommel's Retreat (Nov.-Dec. 1942)	Final Assault (Jan.-May 1943)
Personnel	+	+	+
Fixed Assets	+	+	+
Ground	+	+	+
Supplies	+	+	+
Cohesion	+	+	+
Allies	+	+	+
Morale	+	+	+
Leadership	+	+	+
Vigor	+	+	+
Time	+	+	+

achieve a relatively equal position. The fact that Montgomery failed consistently to exploit his advantage with a strong pursuit after his first attacks made no real difference. As Chalfont notes, Montgomery was working on a deliberate time scale. He had the resources to mount an attack the next day, and the next and so on until the door was finally pushed in which it eventually was.

CONCLUSION

The ratings shown in Tables 1 and 2 suggest that Rommel never really had a chance against Allied forces because of his lack of adequate supply. North African had been considered a sideshow by Hitler and the German High Command. Hitler had provided an able commander and weak force to the theatre, hoping Rommel could accomplish the impossible with few resources while Germany prepared for the invasion of the Soviet Union. It is interesting to speculate what Rommel might have accomplished had he been provided greater forces and his air and especially sea lines of communication had been protected.

As for Montgomery, Chalfont points out correctly that judgement on his achievements must take into account the fact that he had tremendous material superiority.[18] Consequently, his victory, Chalfont adds, does not seem as astonishing now as it must have been in Great Britain in 1942-43, when Rommel's fame was at its height. Montgomery failed to exploit his advantage with a strong pursuit at either El Alamein after the battle of Alam al-halfa Ridge, nor during Rommel's retreat to Tunisia. Yet Montgomery was able to accomplish the CFV and do so in a way that the Battle of El

Alamein and the campaign in North Africa became the foundations of his fame.

What we have learned about CFV in this analysis is that two variables--vigor and supply--were critical, but that supply alone was the single greatest influence upon the outcome of the campaign in the North Africa. Montgomery had supply, Rommel did not. Both commanders had vigor and generally used time well with Rommel, on balance, being the better tactician. But Rommel's brillance at maneuver could offset his deficiency in supply only for so long.

The ten variables used to depict the status of CFV--(1) personnel, (2) fixed assets, (3) ground, (4) supplies, (5) cohesion, (6) allies, (7) morale, (8) leadership, (9) vigor, and (10) time--appear to be a good method for assessing movement either toward or away from its achievement. Additional utilization in studies of other campaigns and wars, however, is necessary to fully assess the merits of its particular approach. The contribution of this framework of analysis for this particular project on the North African campaign of 1941-43 is that it striking illustrates how the supply factor was eventually Rommel's undoing. As Clausewitz points out, as war unfolds, armies are constantly faced with factors that increase their strength and others that reduce it.[19] Thus, a military campaign presents changing circumstances as the various factors work their calculus to put one side or the other at an advantage or, conversely, a disadvantage. Furthermore, it should be noted that the concept of CFV is not static; rather CFV has a dynamic nature and is open to change itself. A redefinition of CFV by Rommel or the German High Command might have brought diff-

ferent results. At least, it is interesting to speculate how the North African Campaign might have turned out if Rommel had established a CPV more consistent with his resources, or received resources consistent with his CPV.

Clausewitz suggests that when it comes to CPV, it is only the man who can achieve great results with limited means who has really hit the mark. Rommel seems to fit this description better than Montgomery, but in the end it is Montgomery and not Rommel who has the CPV largely because his means are not limited. Nevertheless, Clausewitz's initial insight still provides us with the understanding of what CPV is all about. As Clausewitz observes, theory fulfills its main task when it is used to analyze the basic elements of war, to explain the properties involved and show their probable effect, to define clearly the nature of the ends in view, and illuminate the phases of war through critical inquiry.[20] Clausewitz's notion of CPV is one of the ways theory can be utilized to accomplish deeper understanding of war fighting as seen in this discussion. It is quite clear that without supply, CPV was unobtainable for Rommel. And it is to this end that German efforts should have been focused.

NOTES

1. Carl von Clausewitz, On War, eds. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1967), pp. 566-73.

2. Ibid., p. 528.

3. Ibid., p. 570.

4. Igor Vitukhin (ed.), Soviet Generals Recall World War II (New York: Sphinx Press, 1981).

5. Clausewitz, op. cit., p. 528.

6. Ibid., p. 573.

7. Ibid., pp. 110-112. B.H. Liddell Hart (ed.), The Rommel Papers, trans. Paul Findlay (London: Collins, 1953).

8. Clausewitz, op. cit., p. 105.

9. Hart, op. cit., p. 119.

10. Ibid.

11. This discussion of Rommel is based on the following sources: Hart, op. cite.; David Irving, The Trail of the Fox: The Search for the True Field Marshal Rommel (New York: Dutton, 1977); Correlli Barnett, The Desert Generals (Bloomington: Indiana University Press, 1982); Desmond Young, Rommel (London: Collins, 1950); Ronald Lewin, Rommel as Military Commander (New York: Reinhold, 1968); Charles-Douglas-Home, "Field-Marshal Erwin Rommel," in M. Carver (ed.), The War Lords (Boston: Little, Brown, 1976), pp. 274-84; and Wolf Heckmann, Rommel's War in Africa, trans. S. Seago (Garden City, N.Y.: Doubleday, 1981).

12. Lewin, op. cit., p. 7.

13. Douglas-Home, op. cit., pp. 278-9.

14. Irving, op. cit., p. 64.

15. Ibid., p. 215.

16. Ronald Lewin, "Field Marshal the Viscount Montgomery", in M. Carver (ed.), The War Lords (Boston: Little, Brown, 1976), pp. 500-8; other works on which this discussion of Montgomery are based include: Hart, op. cit.; Irving, op. cit.; Barnett, op. cit., Alun Chalfont, Montgomery of Alamein (New York: Atheneum, 1976); and Nigel Hamilton, Monty: The Making of a General, 1887-1942 (New York: McGraw-Hill, 1981) and Master of the Battlefield: Monty's War Years, 1942-1944 (New York: McGraw-Hill, 1983).

17. Chalfont, op. cit., p. 185.

18. Ibid., p. 202.

19. Clausewitz, op. cit., p. 566.

20. Ibid., p. 141.