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THE CENTER OF GRAVITY IS NOT AN ACHILLES HEEL

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## THE CENTER OF GRAVITY IS NOT AN ACHILLES HEEL

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The "center of gravity" has been called the key to all operational design, hence there is renewed interest in the concept within the US military. This author feels that much of what has been written has been ambiguous and sometimes contradictory. This article attempts to present an explanation of the concept consistent with the Clausewitzian use, but which fits the spirit of AirLand Battle doctrine and the operational level of war.

When examining the concept of "center of gravity," as it applies in a military sense, a dilemma arises. The term's definition and use in the works of Carl von Clausewitz are different from that used in current discussions on US Army AirLand Battle doctrine. Part of the problem is that the contemporary literature on the subject does not adequately differentiate between three distinct aspects of a military force as they relate to the center of gravity. These aspects are the opposing force's strengths, weaknesses and vulnerabilities: three distinct concepts.

Both strengths and weaknesses may or may not be vulnerable to attack. Which of these represents a center of gravity? For our contemporary use of center of gravity to be consistent with the Clausewitzian use of the same term and also with the analogy he makes with the common physical meaning of the term, we should discipline our use so it relates to an aspect of strength.

Clausewitz defined the center of gravity as "the hub of all power and movement, on which everything depends." {1} If one studies the context in which he used the concept, it becomes clear that it can be applied at the strategic or operational level. Strategically, a capital city or the will of the people could be the center of gravity. At the operational level, within a theater of operation, Clausewitz clearly implies that it is the concentration of combat power that represents

(photograph)

Israeli armor in the Sinai, October, 1973

the center of gravity. "A center of gravity is always found where the mass is concentrated most densely. It represents the most effective target for a blow; furthermore, the heaviest blow is that struck by the center of gravity." {2}

Clausewitz was very much influenced by the Napoleonic Wars and in particular, Napoleon's success. The lesson he sends to his reader is the importance of battle, of seeking out the enemy center of gravity and destroying it in battle. He admonished his reader against wasting his forces on immaterial successes. All effort should be focused on the enemy center of gravity. {3}

Some have criticized Clausewitz for this approach. B. H. Liddell Hart, for example, stressed the indirect approach to warfighting. {4} However, the spirit of AirLand Battle doctrine reconciles the apparent tension between the concepts of center of gravity and the indirect approach. {5}

In 1973, the Egyptians surprised the Israeli Defense Force (IDF) and successfully crossed the Suez Canal. The Egyptian Second and Third Armies established a lodgment on the east bank and prepared for the expected IDF counterattacks. They did not need to continue their advance because Egyptian President Anwar el-Sadat had established a limited strategic aim of seizing and holding an operational lodgment to go to the negotiating table from a position of strength.

The limited military objective accomplished Sadat's strategic aim. His plan also took into account Egyptian strengths and weaknesses and the expected IDF counter-attacks. Egyptian tanks on the east bank were protected by infantry and a dense system of ATGMs (antitank guided missiles). Furthermore, an extensive SAMs (surface-to-air missile) network on the west bank provided an effective air defense umbrella over the entire lodgment area.

After being bloodied in their piecemeal counterattacks, the Israelis refrained from further attacks on the Suez front until they first stabilized the situation on their second front, the Golan Heights, and began their attack into Syria. This attack put great pressure on the Egyptians to come out of their lodgment to relieve the stress being brought to bear on their Syrian ally. After

(photograph)

Royal Air Force GR.Mk3 Harriers (lower left), Royal Navy FRS.Mk1 Sea Harriers and Sea King helicopters aboard the HMS Hermes during the Falklands campaign, 1982.

defeating the poorly executed Egyptian offensive, the Israelis were ready for their decisive operation.

The IDF attacked along the boundary between the Egyptian Second and Third Armies, crossed the canal and wrecked the vulnerable SAMs on the west bank. This helped gain freedom of action to execute operational maneuver on the west bank. They quickly exploited the situation to encircle the Third Army and threaten its annihilation. Superpower intervention then helped bring about a cease fire. {6}

This campaign can help us to understand the center of gravity. The combined armed forces on the east bank were the Egyptian center of gravity, the Second and Third Armies. These forces represented the concentrated strength of the Egyptians at the operational level. These were the forces that could achieve, for Sadat, his strategic and operational aims.

This center of gravity was too strong for the Israelis to attack directly, even after they had repulsed the ill conceived Egyptian offensive. Because the center of gravity was not vulnerable to direct attack, the Israelis attacked an Egyptian weakness.

By attacking along the army boundary, they were able to secure a fragile bridgehead on the west bank. They then attacked a vulnerable link in the overall Egyptian defense, the air defense network. This was also an indirect attack against the center of gravity, because without this umbrella, the strong center of gravity begins to weaken and becomes vulnerable to encirclement by ground forces and attack by Israeli airpower.

It would be wrong to consider, as centers of gravity, the army boundary, the air defense system or, for that matter, the fragile lines of communication and supply to the Third Army which the Israelis eventually cut. While these were the focus of Israeli attacks, they were only attacked because they were vulnerable, whereas the two armies were not. These attacks had a direct relevance in weakening the cohesion of the real center of gravity.

The test of the center of gravity must answer the question, "What could win for the Egyptians?" Only the powerful, combined armed armies on the east bank could accomplish Sadat's operational and, hence, strategic aims. The air defense net alone could not

(photograph)

win. On the other hand, if the air defense network was destroyed, the Israelis would still need to deal with the Second and Third Armies through either direct or indirect attacks.

This campaign offers a clear example of how the center of gravity fits into the operational art even though it was not the direct objective of the Israeli attack. Operational art for the Israelis consisted first in blocking the enemy center of gravity and, second, because it was too strong to destroy with direct attacks, in finding and attacking enemy vulnerabilities that could unhinge that center of gravity and make it susceptible to attack and encirclement. It is a classic example of Liddell Hart's indirect approach, but with a strong focus on the Clausewitzian center of gravity.

Can the center of gravity change in the course of a campaign? The battle for the Falklands/Malvinas in 1982 offers an example of a situation where it did change. On 2 April 1982, Argentina invaded and seized the Falkland Islands. By 6 April, the British had assembled and dispatched a naval task force out of Portsmouth, England. This task force consisted of Britain's only two aircraft carriers, HMS Invincible and HMS Hermes; the assault ship, HMS Fearless; nine frigates and destroyers; plus other support ships. Seven other frigates and destroyers from Gibraltar joined the task force in the Atlantic Ocean.

The task force was to be further reinforced and supplied from the British base on Ascension Island in the South Atlantic. The Royal Marine's 3 Commando Brigade, Britain's only thoroughly trained and prepared force capable of executing immediate amphibious operations, was totally embarked on the 45,000 ton cruise liner SS Canberra which was requisitioned for the operation.

It is clear that the aircraft carriers should be considered the center of gravity during the first phase of the campaign, that period up to and including the amphibious assault at Port San Carlos by the Marines on 21 May. Although Argentina could have significantly unbalanced the task force, possibly even quickly ending the war, by sinking either an aircraft carrier or the Canberra,

only the carriers should be defined as the center of gravity.

The Canberra actually represented an operational weakness and, as such, should not be termed the "center of gravity." Because of the lack of troop transport capability, the entire Marine brigade sailed on the single ship. Fortunately for the British, the Canberra, while under the protection of the carriers, was not vulnerable to attack. Only the carriers could win for the British. Without these carriers, and the air power they were capable of projecting, there could be no possibility of protecting the task force and attempting the amphibious landing.

Once the landing succeeded and 3 Commando Brigade was ashore, a transition occurred that made the Marine brigade the operational center of gravity. British victory in this campaign depended upon seizing terrain, and only ground forces could do that. The mission of the Marines was to move cross country to Stanley, retake the capital and force the surrender of the Argentine forces there. Conceivably, Argentina could still have won its campaign, forced Britain to accept the negotiated loss of the islands, by inflicting a decisive defeat on the Marines. Unfortunately for them, neither their soldiers' leadership nor training was adequate to accomplish that task. {7}

In summary, we can say several things about the center of gravity that should help in its identification:

- o The center of gravity represents a concentration of enemy strength. It is the most concentrated aspect of the enemy's combat power; that which is most vital to him in the accomplishment of his operational aims. If you could knock it out directly, it would be the most effective target for your blows. However, this target may not be vulnerable to direct attack, nor is it always likely you will have sufficient means to support a direct attack.
- o Considering a single component of the enemy's combat power as the center of gravity does not have the utility of the above approach. A single component, such as the Egyptian air defense network, may be vulnerable to attack, but its destruction in itself would rarely lead to victory. Rather, it would probably represent a means to an end, a way to make the actual center of gravity vulnerable to attack. Lines of supply and communication also fall into this category.
- o The center of gravity is not an enemy weakness. These weaknesses may or may not be vulnerable to attack. Even if vulnerable and even if attacked, success will only be relevant and lead directly to victory if the exploitation of the weakness helps in destroying the center of gravity. It is absolutely essential that friendly combat power not be wasted in attacking enemy vulnerabilities for the sake of simply "gaining the initiative" or achieving tactical successes.
- o The aim of the enemy must be considered in determining his center of gravity. The question to be asked is "What is he

attempting to accomplish?" His center of gravity is the essence of his combat power which will enable him to achieve that goal. Thus the aim and the combat power allocated to achieve that aim are intimately linked.

o Each level of war has a different center of gravity. For clarity, the question must be asked: "Center of gravity of what?" At the strategic level, the will of the people or government might be the factor that allows the war to be won. Such could be said was the case with the American people and Vietnam. At the operational level, within a theater of operations in NATO, it might be a particular Soviet front or a particular army of a particular front.

The role of the center of gravity in operational art should be clear. Having identified the enemy's center of gravity, if it is vulnerable or if you are relatively strong enough, it can be attacked directly. If you have identified the center of gravity correctly, your success will be decisive. If the enemy's center of gravity is not vulnerable to attack, the operational commander should take steps to neutralize it while throwing his center of gravity at an Achilles heel of the enemy, a weakness which is vulnerable, but yet leads to a decisive result. However, US doctrine should not confuse this Achilles heel with the center of gravity.

Finally, we should not expect to be able to use a cookie cutter approach in identifying the enemy center of gravity. Modern warfare is complicated, multidimensional and broad in scope. Even though we may not always come up with the same answer, trying to identify the enemy's center of gravity at the operational level of war will help because it will focus our thoughts on how to achieve operational victory rather than mere tactical success. The center of gravity is not the entire recipe for success, it is only one important ingredient.

#### NOTES:

1. Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton, NJ; Princeton University Press, 1976), 595-96.

2. *Ibid.*, 485.

3. *Ibid.*, 596.

4. B.H. Liddell Hart, *Strategy* (New York: Signet Classics, 1974), 319-53.

5. US Department of the Army, *Field Manual (FM) 100-5, Operations* (Washington, DC: US Government Printing Office, May 1986), 179-80. FM 100-5 allows for the use of the indirect approach in the execution of operational art; however, it provides an ambiguous definition for the center of gravity. This allows readers of the manual to derive two different concepts from the definition; one revolves around the enemy's

strength, the other focuses on an Achilles heel of the enemy. This article attempts to reconcile this error.

6. Avraham (Bren) Adan, *On the Banks of the Suez: An Israeli General's Personal Account of the Yom Kippur War* (Presidio, CA: Presidio Press, 1980).

7. Max Hastings and Simon Jenkins, *The Battle for the Falklands* (New York: W.W. Norton & Co., 1983).

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