



Determining centers of gravity and critical vulnerabilities

By Sid Heal

Every tactical operation has some obstacle, factor or influence that is necessary to overcome for success. It goes without saying, then, that an ability to reliably identify these factors and influences has momentous implications for planning, especially when adversaries are involved, because it provides the essential focus necessary for success. The military long ago recognized their importance and the Prussian military theorist Carl von Clausewitz is credited with being the first to describe them in detail in his treatise, "On War," published in 1832.

So critical to success are these attributes that they are called "centers of gravity." A center of gravity refers to something upon which a force is dependent for success, and which, if eliminated, damaged, diminished or destroyed, will severely impact opportunities for success. A center of gravity is best understood as a source of strength. Accordingly, it is not restricted as to how it manifests itself. It may be physical, such as a terrain feature or locale, or it may be intangible, such as superb training, preparedness or morale. Accordingly, because a center of gravity is a source of strength it tends to be resistant to attack.

A related but contrary concept is "critical vulnerability." A critical vulnerability identifies a weakness, which if exploited, will create failure. By definition, a critical vulnerability cannot also be a center of gravity since they are polar opposites; one a strength, the other a weakness. Since it makes more sense to attack a weakness than a strength, once identified, critical vulnerabilities provide opportunities for exploitation.

While easy to describe in concept, both centers of gravity and critical vulnerabilities may be difficult to identify in actual situations. To make them more conspicuous, two additional concepts are useful. The first is

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called "critical capabilities." Critical capabilities are defined as those inherent abilities that enable a center of gravity to function.¹ Because all critical capabilities have necessary conditions and resources to enable them to operate, they in turn have "critical

requirements." Critical requirements² are those conditions, means and resources that enable a critical capability. More simply put, critical requirements are inherent preconditions for critical capabilities. Furthermore, each critical capability may need a number of critical requirements to be fully operative. For example, cars need fuel, helicopters need pilots and fuel, and so forth. It follows that interfering, inhibiting or degrading a critical requirement then impairs the capability it supports.

To illustrate how these concepts work, let's use an example. A law enforcement agency has been assigned to handle a protest scheduled in the near future. The issue is highly controversial but the activists have not gained much support from the community. Consequently, the activist group has begun resorting to provocative acts which have succeeded in gaining both media attention and successful civil actions when police were deemed to have reacted inappropriately. These actions result in sympathy, if not outright support, from the community.

At the initiation of planning, the incident commander conducts the following analysis. In order to succeed, the activist group must conduct actions that will result in a confrontation with law enforcement, coupled with behavior by police that could be viewed as inappropriate. These factors constitute critical capabilities. In order to achieve these capabilities there are any number of critical requirements. Just a few examples might be the necessity of being in close proximity to police coupled with excessive or unnecessary reactions, media coverage favorable to their actions and so forth. Inhibiting any of these adverse factors provides an advantage. Furthermore, their center of gravity becomes more conspicu-

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ous. While they may seek a confrontation with police, they do not need to win it. Indeed, the more they are seen as down-trodden and victimized, the more sympathy they can expect. Thus, their center of gravity is the perceived legitimacy of their actions. Failure to achieve this perception would be a calamity to their ultimate goal of gaining support from the community and thus constitutes their center of gravity. Likewise, their critical vulnerabilities are more conspicuous. If the community views their actions as self-serving, outrageous or contemptible, they will have little sympathy.³ In fact, law enforcement will be expected to intervene.

Based upon this understanding, all sorts of possibilities become apparent. For example, educating the media as to past actions of the activists, preferred courses of action of law enforcement, and available tools and tactics, can serve as part of an information campaign⁴ to inform the community. An informed public is far less likely to be swayed by exaggerations and misinformation. The use of fencing, barricades and roadblocks reduces friction points between provocateurs and law enforcement and therefore directly affects the activists' critical requirement of proximity. Training and briefing police officers specifically for the expected confrontation also reduces the likelihood of inappropriate responses. Conspicuously filming agitators and provocateurs for later identification and prosecution puts the activists on notice that bad behaviors will have consequences. Evidence can be gathered, reports written and arrest warrants obtained without having to confront suspects and their compatriots altogether and in a public forum. Photographs and videos of unidentified suspects can later be made available to media outlets seeking the public's assistance in their identification. This serves the dual purpose of striking directly at the activists' desire to gain public sympathy while strengthening the view of law enforcement's restraint and need to intervene.

By now it should be clear that the understanding derived from a critical analysis of these four concepts allows a commander to craft a plan focused precisely on those nodes most essential for success. The success of many tactical operations have hinged on far less. ◀

Endnotes

1. This definition, as well as much of this article, is taken from the excellent book by Dr. Joe Strange, Marine Corps War College, entitled *Perspectives on Warfighting, Number Six, Capital "W" War: A case for Strategic Principles of War*, Marine Corps University, Quantico, VA, 1998.
2. For simplicity, each of these concepts is often identified by its initials, center of gravity (CG or COG or CoG), critical vulnerability (CV), critical capabilities (CC) and critical requirements (CR).

3. It is important to note that "lawless" acts are not always included. Barring significant exasperation, Americans tend to overlook minor infractions, like blocking streets, sidewalks, entrances, etc., as mere annoyances in the larger context of legitimate protest. This is why rules of engagement are so critical in handling situations of this type. For more information see, "Rules of Engagement," *The Tactical Edge*, Spring 2003, p. 44.
4. For more information on information operations, see "Shaping Operations," *The Tactical Edge*, Spring 2008, p. 66.

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