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<b>14. ABSTRACT</b> Strategic deterrence reliant upon nuclear weapons has been a keystone of U.S. national security since the end of World War II. This essay makes the case that, amidst modern great power rivalry and gray zone competition, U.S. strategic interests require wider and more prominent incorporation of non-lethal weapons and intermediate force capabilities in order to deter armed conflict and preserve our position as the preeminent global superpower.					
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**Strategic Weapons, Redefined:  
Capitalizing on the Strategic Effects of Intermediate Force Capabilities**

Following the Allied victory in World War II, the United States was uniquely positioned to establish itself as the preeminent global superpower. Unlike much of Asia and Europe, the American homeland escaped the war relatively unscathed. Wartime production had pulled its economy out of a depression and left the United States in position to finance the recovery of much of Europe. Perhaps most significant in cementing the United States' status as a great power was that it was the only state in possession of the technology to both build and deliver nuclear weapons, as demonstrated at Hiroshima and Nagasaki in the war's waning weeks. As such, nuclear weapons have been at the center of American national defense strategy for the last three quarters of a century. Nuclear weapons have become so central to our grand strategy—maintenance of the global status quo—that they have acquired the reputation as the sole “strategic” weapons in the American military's arsenal. However, as the United States' great power rivals continue to assert their own dominance through strategic positioning and gray zone competition, nuclear weapons have proven to no longer be sufficient for singlehandedly achieving the country's strategic aims. Policy makers and military planners should re-evaluate the meaning of a truly “strategic” weapon. In doing so, it will become clear that non-lethal weapons and other intermediate force capabilities add strategic value by providing options at the lower end of the force continuum that are tailor made for gray zone competition. They will aid the United States in maintaining its global status without unnecessary or unintentional escalation to full conflict, and, as a result, they should be featured more prominently in tactical and operational doctrine to take advantage of this strategic effect.

The concept of strategic deterrence is fairly simple. Assuming all are rational actors, “the overwhelming destructive power of nuclear weapons (inhibits) decisionmakers from resorting to their use, out of fear of retaliation by the adversary.”<sup>1</sup> If faced with equally destructive

consequences, even a small, but credible, probability of retaliation makes a nuclear first strike opposed to one's self interest. Strategic deterrence has been crucial for American national defense since the late 1950s when advances in Soviet weapons and delivery capability gave the U.S. a nuclear peer, and it remains a cornerstone of national defense strategy to this day. Admiral Charles Richard, commander of U.S. Strategic Command (USSTRATCOM), emphasized when discussing the 2022 National Defense Strategy (NDS) that "every operational plan in the Department of Defense and every other capability we have rests on an assumption that strategic deterrence and, in particular, nuclear deterrence is holding. And if strategic or nuclear deterrence fails, no other plan and no other capability in the Department of Defense will work as designed."<sup>2</sup> Fortunately, strategic deterrence has been highly effective. In addition to preventing any further use of nuclear weapons in combat since World War II, the strategy has even deterred head-to-head conventional warfare between nuclear powers, for fear that it could escalate to nuclear war. However, the United States' nuclear capability has been unable to prevent conflict entirely, whether that meant proxy wars with the Soviet Union in efforts to contain Communism, suppressing insurgencies in states that served American interests, or in gray zone competition with their modern-day great power rivals, China and Russia. As a result, over a period of decades, the United States' global position has slowly eroded. So why is our defense lexicon on strategic capabilities still centered so fully on nuclear weapons rather than supplemented by capabilities that could deter or shorten the conflicts that are slowly ceding our advantage?

The answer lies within the culture of the Department of Defense, which has become so hyper focused on "lethality" that it is counterproductive. Fielding a capable fighting force has always been a priority for the military department, but the current emphasis on "lethality"

became a central tenet of James Mattis's tenure as Secretary of Defense. Perhaps unsurprisingly for a battle-hardened Marine infantryman who is known for catch phrases about annihilating the enemy, he listed building a more lethal force as the first step of his strategic approach in the 2018 NDS.<sup>3</sup> As the "lethality" buzzword gained momentum within the Pentagon, the concept was attached to so many initiatives that the word lost its meaning. "Increased lethality" and efforts to "build a more lethal force" have been used to promote everything from more nutritious menus in Air Force dining facilities<sup>4</sup> to allowing female sailors to wear ponytails<sup>5</sup> to, perhaps most dubiously, humanitarian assistance provided by the Hawaiian Army National Guard in response to lava flows.<sup>6</sup>

Secretary Mattis's reasoning for the focus on lethality was clear in the 2018 NDS, as he stated, "The surest way to prevent a war is to be prepared to win one."<sup>7</sup> This captures the essence of strategic deterrence, the results of which, as previously noted, are hard to dispute. However, nuclear weapons' ability to deter conventional war has resulted in perennial gray zone competition between the U.S. and its great power rivals. Gray zone competition with a near peer rival is a modern problem, but sole reliance on overwhelming force is an old-fashioned solution. For this, Mattis misses the mark. The gray zone can be defined as "an operational space between peace and war, involving coercive actions to change the status quo below a threshold that, in most cases, would prompt a conventional military response, often by blurring the line between military and nonmilitary actions and the attribution for events."<sup>8</sup> The result is "a long series of limited *fait accomplis*" where the aggressor dares the defender to either respond and risk escalating the conflict or accept a new normal.<sup>9</sup> When forces have few options between "shout" and "shoot," they have no choice but to raise the threshold of where a military response is appropriate. The employment of lethal force would undoubtedly escalate the conflict, just as

aggressors are daring them to do, so the more desirable option becomes no response at all.

Ironically, thanks to the Department of Defense's emphasis on lethality, a lack of non-escalatory response options gives the military little choice but to concede, directly counter to the nation's best strategic interest.

This lack of flexible response options severely limits the military's utility as a tool of national power in gray zone competition. While other tools—through diplomatic maneuvering, information operations, and economic sanctions—are routinely employed at varying degrees in support of U.S. strategic aims, the military has limited means of employing non-escalatory force when power projection fails. With wider implementation of non-lethal and intermediate force capabilities, this would not be the case. If forces are given additional non- and less-lethal options, the threshold of action that triggers an appropriate and proportional military response can be lowered, threats can be answered with less risk of escalation, aggression can be deterred at an earlier and less impactful stage, and the United States' decision-makers can rest assured that all tools of national power are equally available in any phase of competition.

The Air Force Strategic Air Command was founded in 1946, developed into a combat ready force under General Curtis LeMay, and grew to incorporate coordination of all elements of the nuclear triad in the 1960s.<sup>10</sup> Strategic Air Command carried out some conventional bombings in Korea and Vietnam, but as time passed and operational plans were developed, the terms “strategic” and “nuclear” became synonymous in the context of weapons. Strategic Air Command was replaced by the new unified command USSTRATCOM in 1992, which now vaguely promises to create “a variety of global strategic effects day to day in support of national objectives.”<sup>11</sup> However, their clear and stated purpose remains strategic deterrence and preparation to deliver a decisive nuclear response if deterrence should fail. In a military whose

planners are focused on lethality, strategic weapons—those intended to apply maximum destructive force on strategic targets—have reliably deterred great power conflict and maintained the United States’ global position for decades. But strategic weapons alone will not be sufficient in the environment of modern great power competition unless the scope and definition of what makes a strategic weapon “strategic” is revisited, and the aperture widened to incorporate the strategic benefits of less lethal weapons in achieving national objectives.

Pentagon planners should recognize that the “strategic” label is warranted for weapons on both ends of the spectrum of force that most directly complement efforts to achieve strategic victories. In his book *The Meaning of Military Victory*, Robert Mandel defines a strategic victory as being one that “entails the victor exercising full informational control and military deterrence against foes; attaining stable political self-determination, economic, reconstruction, and social justice within the vanquished state; and enjoying unbridled internal and external diplomatic respect.”<sup>12</sup> For the United States, strategic victory in gray zone competition requires simply preventing conflict, therefore preserving the status quo and, thus, its great power advantage. It is important to note, as well, that preventing conflict in regions and against foes other than great power rivals is also of great strategic benefit. Two decades of fighting in Iraq and Afghanistan have been enormous drains on resources, and have left the United States vulnerable in other theaters. Deterring prolonged conflict in other hot spots is of near equal importance.

With this in mind, nuclear weapons clearly rate the strategic weapon label based on Mandel’s criteria. They provide military deterrence in spades, and states with nuclear capability undoubtedly enjoy political self-determination and diplomatic respect. It is no coincidence that the five permanent members of the United Nations Security Council are the five nuclear-

weapons states, and North Korea's brazen nuclear aims are clearly driven by the international clout that comes with achieving them. Non-lethal weapons are by no means expected to be a replacement for the strategic value of nuclear weapons. As long as nuclear weapons exist in the world, the United States' security will first and foremost depend on having that capability. However, non-lethal weapons undoubtedly have a role to play in fulfilling Mandel's criteria for strategic victory and slowing the erosion of the United States' great power advantage. And they can do so without ever firing a shot.

Carl von Clausewitz described warfare in terms of a trinity of the wills of a nation's government, its military, and its people. Media, the people, and public perception have had an increased effect on strategic planning since Vietnam era news reports first broadcast the realities of combat into American's living rooms. In general, people find the violence of warfare—particularly toward non-combatants—increasingly unpalatable. While millions of civilian casualties resulted worldwide from operations in World War II, a recent Pentagon report cited U.S. responsibility for a total of 12 civilian deaths in “a declared theater of active armed conflict” in 2021.<sup>13</sup> Due to their relative novelty, a single instance of excessive or misplaced force can dominate the modern news cycle. Furthermore, social media platforms have made information sharing easier and faster than ever, and our adversaries have learned to use this to their advantage. Russian ships frequently push the envelope of safe passage when operating in the vicinity of American warships at sea, and swarms of Chinese fishing vessels have been known to execute similar tactics in the South China Sea. With cameras rolling, they dare United States forces to either fire a warning shot and present themselves as the aggressor or to do nothing due to lacking the tools for a proportional response.<sup>14</sup> In either case, a dependence solely on lethal weapons has created a strategic disadvantage.

This is where non-lethal weapons and intermediate force capabilities can contribute to Mandel's first criteria for strategic victory: informational control. For instance, Col. Wendell Leimbach, Director of the Joint Intermediate Force Capabilities Office (JIFCO), has outlined the ideal response to an aggressive fishing vessel. An operator could first give a verbal warning to the vessel using an Acoustic Hailing Device, which is capable of projecting scalable tones or voice commands over long ranges. If the vessel fails to respond, the non-damaging, eye-safe beam of an Optical Interrupter could be directed at the driver as a further warning or deterrent. Finally, if the vessel must be disabled, a Radio Frequency Vessel Stopper can be used to disrupt the craft's engine and electronics, leaving it dead in the water without the risk of collateral damage from an attempted disabling shot with a lethal round.<sup>15</sup> That can also ensure the adversary does not get the media attention they hoped would benefit them in the Information Warfare domain. Other scenarios, such as crowd control situations, could also benefit from the strategic effects of new age non-lethal weapons. The media optics of more traditional and familiar agents, such as tear gas, pepper spray, and non-lethal sponge rounds or rubber bullets can suggest excessive force or a lack of situational control. A weapon like the Active Denial System (ADS), which emits 94-95 GHz millimeter waves to create a heating effect just below the surface of the skin, can be silently deployed from over 1,000 meters away to disperse a crowd without any risk of serious injury.

Gray zone competition slowly erodes advantages over long periods of time, but full-scale military conflict can cause lines to shift dramatically and suddenly. Thus, curbing threats short of Phase 3 warfare operations through military deterrence is of great strategic advantage to the United States, and rightfully composes Mandel's second criteria for strategic victory. While intermediate force capabilities can provide a proportional level of response to direct threats with

minimal risk of escalation from great power rivals, their greatest strategic benefit may be in quelling tensions in potential hotspots before they can reach a tipping point. In the words of Sun Tzu, "To subdue the enemy without fighting is the acme of skill."<sup>16</sup> More options for proportional intermediate force capabilities can give commanders better options to accomplish that without reaching Phase 3/decisive operations during a time of rising tensions, or, at the very least, minimize risk of backing into hostilities again when they should be subsiding. U.S. forces frequently find themselves answering the call for military operations other than war or operating in increasingly urban environments surrounded by non-combatants. The previously mentioned non-lethal crowd control options could be assets in subduing unruly protesters or angry mobs where lethal force could counterproductively incite further disorder, as has been demonstrated by their use in Somalia in the mid-1990s and during NATO operations in Serbia in 2000.<sup>17</sup>

Similarly, increased availability of intermediate force capabilities in irregular warfare operations could also serve to shorten conflict. For instance, an average of one Iraqi citizen was killed or injured at a military checkpoint everyday between 2006 and 2007.<sup>18</sup> Although in 3/4 of these cases investigations determined soldiers had acted in accordance with rules of engagement, the likelihood that all of those cases were truly lethal threats warranting lethal force is zero. For example, Sydney Freedberg outlined an example of the lack of cultural understanding in-country at that time. The American gesture for "stop" is an Iraqi symbol for "welcome, come forward." In some cases, guards were effectively, though unknowingly, goading drivers into an ambush.<sup>19</sup> Brigadier General Edward Cardon of the Army's 3<sup>rd</sup> Infantry Division described others: "The soldiers are driving on the wrong side of the road; they fire a warning shot at a car because it's, quote, 'driving erratically.' After the warning shot, it drives more erratically, and they fire more shots and wound the driver."<sup>20</sup> Unnecessary civilian casualties such as these contribute to

“insurgent math,” which studies have shown can result in a 25-65% increase in kinetic activities for 5 months.<sup>21</sup> Had these soldiers been armed with an Acoustic Hailing Device, an Optical Interrupter, or any other more proportional option to halt or slow down questionable vehicles and support threat assessment at checkpoints, it would have saved many innocent lives and minimized the “revenge effect” that prolonged the war and increased risk to coalition forces.

The strategic benefits of intermediate force capabilities are not limited to less lethal impact on noncombatants. They can also be much less destructive to the surrounding environment. Mandel’s criteria for strategic victory highlight the importance of stability and economic reconstruction in the vanquished state. He contends that this requires more than just monetary reparations, but also physically rebuilding their infrastructure and reincorporating the state into the regional and global economies.<sup>22</sup> Modern warfare in urban environments can have dire economic consequences. For example, three days of intense fighting in Aden, Yemen was enough to leave more than 200,000 people without clean water.<sup>23</sup> Those who survive heavy shelling in cities are often forced to flee, typically for prolonged periods, further straining the state’s economic recovery. Warfare will never occur completely void of physical destruction. But tools exist that could reduce it, and these intermediate force capabilities would be more in line with both Mandel’s strategic victory and Sun Tzu’s theory, who, to quote him once again, wrote, “Generally in war the best policy is to take a state intact; to ruin it is inferior to this.”<sup>24</sup> Non-lethal weapons have been said to have a strategic “multiplier effect” due to their ability to turn tactical application into strategic benefit. For example, temporarily preventing use of critical infrastructure to the enemy by less lethal, non-destructive means eliminates the need to rebuild it later. This can also be of operational benefit. For instance, denying use of a bridge with non-lethal weapons preserves it for later use by friendly forces without delay or cost to

rebuild.<sup>25</sup> Preserving critical infrastructure would also allow displaced civilians to return home sooner, thus reducing the strain and risk associated with housing them elsewhere and speeding up the economic recovery of their homeland.

Mandel's final requirement to claim strategic victory is "unbridled internal and external diplomatic respect."<sup>26</sup> Modern populations and, as a result, warfare's migration toward more urban areas has meant militaries must achieve victory despite fighting in densely populated settings while simultaneously trying to win the hearts and minds of the locals. Although a shift, since the World War II era, to warfare that increasingly involves machines fighting machines has led the overall war dead—both combatants and civilians—to decrease, the percentage of all casualties that are noncombatants has increased dramatically. In the early 19<sup>th</sup> century, when large armies still lined up across from one another in fields to do battle, only about 5% of war fatalities were civilians. By the 21<sup>st</sup> century, with most fighting happening in cities, the United Nations estimates that 90% of war dead are civilians.<sup>27</sup> In the context of non-lethal weapons, their greatest strategic value could be related to their capability to minimize harm to local civilian populations, thus preserving the United States' diplomatic standing both within and beyond the borders of whatever state they are operating.

Once again using the Iraq War as an example, U.S. forces were "fighting to gain or maintain legitimacy in the eyes of three different constituencies: the international community, the American people, and the Iraqi people."<sup>28</sup> One way to win the hearts and minds of local populations would be, as previously noted, to avoid damaging their civilian infrastructure, but prevention of unnecessary civilian casualties is the most essential element. Hearts and minds cannot be won by putting bullets in them, but if forces on the ground lack adequate options for intermediate force it creates a strategic problem that non-lethal weapons can help address. The

impact of civilian casualties on international standing can be demonstrated by a more recent example. Russia has found itself under immense international scrutiny since launching its invasion of Ukraine, and sanctions and pressure have only increased as evidence of human rights violations victimizing Ukrainian civilians have been uncovered. Regardless of the desired global end state, the chosen ways and means of a nation's warfare can have great impact on its international standing. Contact between military and civilians in modern warfare is inevitable, but unjustified violence toward those civilians can do irreparable strategic harm. If this means arming every military checkpoint with an Optical Interrupter, being prepared to disperse unruly crowds with Active Denial Systems or other non-lethal means, and equipping soldiers as we do domestic law enforcement with TASERS to add an extra layer to their options for force, then the diplomatic rewards will be well worth it.

By now, the case for the strategic value of intermediate force capabilities should be well made. However, multiple assessments have found that "warfighter training and awareness of non-lethal weapons remains the most significant challenge to fully integrating the scalable effects of non-lethal weapons into the escalation of force continuum."<sup>29</sup> This is why the criteria of strategic weapons must be redefined, and then training and resources reprioritized accordingly to those on the lower end of the force continuum. However, support for such an institutional shift will have to come from the top down and will require programmatic changes within the Pentagon and armed services. At that point, the case will also have to be made to Congress to secure the funding required for wider implementation and training.

The idea of non-lethal weapons and intermediate force capabilities as a strategic weapon must first have a champion within the Department of Defense. That would nominally be the Commandant of the Marine Corps, whose seat has also held the title of Executive Agent for

Non-Lethal Weapons since 1996. However, a September 2017 report by the Government Accountability Office uncovered several flaws within the Executive Agent programs writ large that were impacting their effectiveness. There is little active oversight within the Department, some programs are inaccurately tracked, and more than half self-reported that they had not been subjected to any periodic assessment.<sup>30</sup> Although the non-lethal weapons program was not mentioned specifically, the findings of this report suggest that it may benefit from new ownership. Several alternatives exist within the Pentagon. Most non-lethal weapons technologies currently available would pair best with the missions and skills of soldiers, so one could argue the Army Chief of Staff would be a good place to start. However, the Department of the Army is already responsible for 38 out of 81 Executive Agent programs. While the novelty of a new area of responsibility could serve Non-Lethal Weapons well in the short run, there is a risk of oversaturation in the long term. So perhaps the Air Force Chief of Staff, whose branch has both a reputation for implementing cutting edge technology and a history of developing strategic weapons policy and procedures, would be a better fit. Non-lethal weapons also would merit extra attention from the Strategic Capabilities Office, which has been charged since a 2016 order from then-Secretary of Defense Ash Carter to implement existing technologies in innovative ways to gain strategic benefit. Intermediate force capabilities are a perfect fit for this mission.

But support from within the Pentagon will not be sufficient if it does not exist throughout the force. For example, the ADS has only been deployed a single time—to Afghanistan in 2010—and never actually used. Although a plan exists to support logistically, it is dependent on a theater commander's request to deploy it again. In order for combatant commanders to recognize the value of ADS and other non-lethal weapons, they and their staffs must have a

change of mindset. Cultural emphasis on lethality makes non-lethal weapons easily dismissed as low-utility tactical tools. But the current professional military education (PME) program plays into this mindset by teaching strategy and policy centered on Phase 3 combat operations and minimal emphasis on avoiding war through de-escalation, a strategic strong suit of non-lethal weapons. Despite another mention of lethality, one thing Secretary Mattis got right in the 2018 NDS was that “PME has stagnated, focused more on the accomplishment of mandatory credit at the expense of lethality and ingenuity.” He further vowed to “emphasize intellectual leadership and military professionalism in the art and science of warfighting, deepening our knowledge of history while embracing new technology and techniques to counter competitors.”<sup>31</sup> This, once again, goes hand in hand with wider incorporation of the strategic effects of non-lethal weapons and intermediate force capabilities.

With a new champion in place and demand stemming from shifts in doctrinal thinking, additional funding will be required for wider dissemination of non-lethal technology. JIFCO’s Col. Leimbach argues for prioritization of acquiring existing platforms, stating, “The vast majority of time is spent in the gray zone. Yet, the conversation today is about enhancing lethality and buying capabilities for Phase 3, or armed combat, armed conflict.”<sup>32</sup> Others, such as Joe Shepherd, Booz Allen Hamilton’s vice president of directed energy innovation, lobby for additional research funds, writing, “If the U.S. government increased its current level of funding of roughly \$1 billion annually to \$2 billion, it would radically transform industry’s ability to develop and field prototypes of these new technologies.”<sup>33</sup> In either case, an initial investment would eventually lead to a self-sustaining program if the strategic benefits of planning around non-lethal weapons are compared to the costs of new and prolonged conflicts without them. Hearts and minds aside, reducing civilian casualties and destruction of infrastructure has major

implications from a fiscal perspective too. From 2003-2006, the Department of Defense paid out \$31 million in “blood money” to Iraqi and Afghan families to compensate for property damage, injuries or deaths.<sup>34</sup> However, that was a drop in the bucket compared to the \$61 billion in Iraq and \$85.5 billion in Afghanistan spent on rebuilding just through March 2011.<sup>35</sup> All of these costs could not have been avoided with wider use of non-lethal weapons, but an appreciable amount could have with appropriate tactical and operational adjustments based on a new strategic capability. Reducing kinetic activity caused by the revenge factor also could have potentially shortened or reduced the intensity of the war, which cost roughly \$10 billion per month in 2007 in Iraq alone.<sup>36</sup> Curbing these expenses, even by a small percentage, would give non-lethal weapons a “multiplier effect”, indeed.

The objective of warfare has been constant throughout history: to achieve military or tactical victories in support of a state’s strategic aims. The only thing that has changed through time is the technology armed forces have at their disposal and the innovative ways they use them. Aircraft carriers, global positioning systems, and unmanned aerial vehicles are central to U.S. military operational planning now, but were all met with resistance for funding and incorporation as fledgling technologies.<sup>37</sup> Similarly, all of the non-lethal weapons and weapon systems mentioned in this writing have already been developed, operationally tested, and approved for use (as have dozens of similarly capable systems). But they are being held back by an archaic emphasis on lethality within the Department of Defense and strategic plans that underrate non-lethal weapons’ strategic value in maintaining the United States’ position as the preeminent global superpower. With a shift in mindset and by accounting for strategic value over cost, intermediate force capabilities can take their place alongside nuclear weapons as the strategic weapons—and deterrents—for the wars of the future.

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