Infantrymen with Company D, 1st Battalion, 168th Infantry Regiment, 2nd Infantry Brigade Combat Team, Iowa Army National Guard, load Common Remotely Operated Weapon Station during eXportable Combat Training Capability rotation at Camp Ripley, Minnesota, July 19, 2019 (U.S. Army National Guard/Zachary M. Zippe)

Beyond Bean Bags and Rubber Bullets

Intermediate Force Capabilities Across the Competition Continuum

By Susan Levine

The phrase *nonlethal weapons* (NLW) often brings to mind capabilities such as bean bags, rubber bullets, pepper spray, and electric stun guns. These capabilities are used domestically by law enforcement and by the military primarily for protection and security missions. Nonlethal weapons technology, however, has advanced significantly over the past 20 years. Technological advancements, including the development of prototype-directed energy capabilities, could provide a variety of counterpersonnel and countermateriel effects without destruction. Could this new generation of capabilities provide senior leaders and operational commanders intermediate force options that support the full spectrum of military objectives? If so, how do they fit in the Department of Defense's (DOD's) focus on increased lethality?

Evolution

During the 1990s, interest in NLW grew from then–U.S. Marine Corps Lieutenant General Anthony Zinni's efforts to make them available during operations in Somalia for the withdrawal of United Nations (UN) peacekeeping troops in Operation *United Shield*.[1] The situation was complex; the availability

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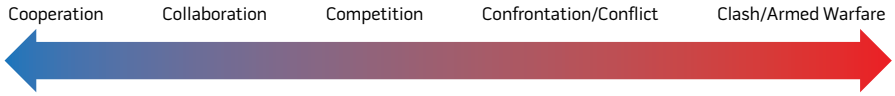
of NLW allowed the troops to make clear to local civilians that UN forces would be firm in maintaining order and would apply minimal force as required. Subsequently, Congress directed DOD to establish centralized responsibility for the development of NLW technology, leading to the designation of the commandant of the Marine Corps as the DOD NLW executive agent as well as to the publication of a DOD NLW policy directive.

The policy directive described NLW as a means to reinforce deterrence and expand the range of options available to commanders, including the ability to adapt and tailor escalation of force options to the operational environment, de-escalate situations to preclude the unnecessary application of lethal force, and enhance the effectiveness and efficiency of lethal weapons.[2] Nowhere does DOD policy imply that NLW are intended to make for a kinder or gentler military force or that they are limited to military law enforcement applications. The policy also emphasizes that NLW are not a prerequisite for the use of lethal force, nor are they guaranteed to have a zero percent chance of associated fatalities or significant injury. Rather, NLW are intended to provide a range of scalable options that offer an *intermediate* level of force to fill the gap between presence and lethal effects in those situations when it is desired to minimize risk to innocent civilians or the surrounding environment.

Over the past 20 years, research on a wide range of technologies with applicability to NLW has proceeded at a steady pace with promising results. Effects without destruction delivered at extended ranges, that last for greater durations, and that are delivered from a variety of platforms are now possible. Notably, human effects research has accompanied technology development, providing the basis for risk of significant injury assessments that will enable confidence in use by the joint force. If used to its full potential, this new generation of nonlethal weapons—better described as a subset of intermediate force capabilities (IFCs)—could offer an array of options to senior leaders and commanders when the use of lethal force is either unnecessary or not desired. IFCs are an evolving construct that wholly includes nonlethal weapons and may also include other capabilities not intended to cause lethal effects.

Figure. Continuum of Major State Interaction Postures



Today's Binary Option: Lethal Force or No Force

Recent DOD higher level guidance acknowledges the changing security environment and describes a competition continuum as an alternative to the binary peace-war framework that has historically been associated with the U.S. national security posture.[3] It also emphasizes the DOD focus on overwhelming lethality as a deterrent to armed conflict—the higher end of the competition continuum (see figure).

Competition below armed conflict remains a daily challenge for U.S. forces around the world. While dominant lethality is absolutely essential as a means to deter and prevail in armed conflict, it is not sufficient to enable U.S. forces to dominate in competition below armed conflict. For this part of the continuum, often referred to as the gray zone, hybrid warfare, or irregular warfare, senior leaders have acknowledged that longstanding emphasis on high-end conflict has often left DOD unprepared for irregular conflicts.[4]

Although the binary peace-war framework has been replaced by a competition continuum, the joint force remains trained and equipped to provide primarily a binary response across that continuum—through the use of lethal force or no force at all. Intermediate force capabilities could provide active measures for the joint force to use, as needed, when a mission of presence is insufficient or the use of lethal force is undesired or risks unnecessary escalation.

Freedom of Navigation Operations

It is well documented that China is claiming and building defenses on disputed islands in the South China Sea, turning submerged reefs into artificial islands and generally attempting to dominate the region. According to a report by the Center for Strategic and Budgetary Assessments, the Chinese government uses a combination of civilian fishing vessels, coast guard ships, and maritime law enforcement troops to protect its island-building efforts. The report notes that because these vessels are unarmed, U.S. naval forces cannot respond with military force without significantly escalating the confrontation.[5]

U.S. interests in this increasingly contested region include freedom of navigation for its fleet and those of its allies and partners. China's civilian fishing fleet is emerging as a third element of its maritime forces.[6] There have been numerous incidents of nonmilitary Chinese surface vessels serving as government proxies and approaching U.S. or allied vessels and behaving in a provocative fashion. These actions are largely unopposed as island-building continues, while the world's most powerful and lethal military force watches without an appropriate counter. China's gray zone activities are similar to the actions of Russia in Crimea, in which "little green men" (well-equipped forces without an identifiable uniform) were used to achieve a military objective of taking control of a region without an overt Russian military presence.

In an article titled "Maritime Hybrid Warfare Is Coming," James Stavridis described a future hypothetical scenario in which nonattributable speedboats manned by "little blue sailors" attack dozens of Vietnamese fishing vessels, giving China an excuse to provide protection in the region and reaffirm its sovereignty over the South China Sea.[7] The point of the article was to highlight the need for the United States to analyze and fully understand how such hybrid warfare approaches translate to the maritime sphere, to highlight the importance

of developing tactical and technological counters, and to train and exercise with U.S. coalition partners against this threat.

Intermediate force capabilities are a potential technological counter to the maritime scenario described by Admiral Stavridis. Long-range acoustic hailers paired with translation devices could provide clear verbal warnings; dazzling lasers could deliver visual warnings and provide obscuring glare to personnel, windshields, and optics of approaching vessels or unmanned aerial systems; nonlethal flash-bang warning munitions could be fired directly in front of, or over, vessels instead of using a lethal shot across the bow. Next-generation high-power radio frequency–directed energy weapons could disrupt electronic controls and shut off vessel engines without harming occupants, and millimeter wave active denial–directed energy technology could physically, but nonlethally, repel personnel on approaching vessels. While many of these IFCs have had initial integration and testing and/or have been used in maritime exercises, they are not integrated or resourced at a level within DOD that they would be considered mainstreamed.

China and its proxies conduct these hybrid tactics largely unopposed. The use of IFCs would allow the joint force to push back against the provocative actions with a measured response, denying U.S. competitors unopposed gray zone operations or propaganda victories. Denying China the use of its proxy maritime militia would either diminish its subterfuge to harass the fleets of the United States and its partners or require China to be more overt through the use of its military assets. The latter would increase China's cost, time, and effort—reducing available resources for it to invest in pursuing lethality parity with the United States.

Urban Operations

Intermediate force capabilities could complement lethal systems during complex operations in urban environments, where multiple studies suggest that most future wars would take place.[8] The joint force's ability to maneuver to an objective in the urban environment might be impeded either intentionally or unintentionally by civilian pedestrian and/or vehicular traffic. To aid in clearing paths, selected armored vehicles, including tanks and personnel carriers, could be equipped with an IFC kit for the Common Remote Operator Weapon Station (CROWS). The CROWS is widely used on armored vehicles with lethal systems such as the MK19 automatic grenade launcher and the M2 .50 caliber machine gun. The IFC kit would complement lethality by offering infantry and armor units a readily available escalation of force options that could be employed while under armor. For example, an acoustic hailer paired with a translation device, a bright white light, and a dazzling laser integrated into the CROWS would provide clear warnings and visual suppression as convoys move through city streets. Future IFCs could include millimeter wave–directed energy to repel personnel and high-power microwave–directed energy to stop vehicles.

Scenarios such as unarmed civilians, including children, standing down a convoy by throwing rocks while cell phones livestream the scene across social media provide a true dilemma for the joint force. The convoy commander could choose to win the engagement with lethal force, but then quickly lose the war in information space. Intermediate force capabilities empower the joint force with a proportional response to civilians who might interfere with the convoy's movement. In urban environments, the use of IFCs would support mission accomplishment and serve as a counter to adversaries who have little regard for civilian casualties or collateral damage and who would seek to exploit social media in an attempt to sway American and global public opinion against U.S. forces.

Stability and Security Operations

In his book *Decision Points*, President George W. Bush lamented the "one important contingency for which we had not adequately prepared," which was the descent of Baghdad into a state of lawlessness that included the looting of precious artifacts from Iraq's national museums. President Bush noted that the "damage done in those early days created problems that would linger for years. The Iraqis were looking for someone to protect them. By failing to secure Baghdad, we missed our first chance to show that we could."[9]

The looting described by President Bush illustrates the quandary faced by the joint force armed almost exclusively with lethal weapons. While use of lethal force on looters may have been legally permissible, U.S. Servicemembers killing Iraqi civilians that they had just liberated from a brutal dictator would have been detrimental to the mission. Alternately, a joint force trained and equipped with IFCs would have had options to deter the looters, demonstrating the U.S. commitment to maintain security of the civilian populace to the host country—and the world—while minimizing civilian casualties.

The challenges in Iraq continued for years. In 2006, Lieutenant General Peter Chiarelli, USA, commanding general, Multi-National Corps–Iraq, was convinced that U.S. units' missteps were contributing to the insurgency and violence, particularly in escalation of force incidents in which a perceived threat to coalition troops resulted in the death or injury of civilians. An associated study found that 81 percent of escalation of force incidents occurred during coalition force movement under conditions that gave Soldiers and Marines little time—often only seconds—to make life-and-death decisions on whether approaching Iraqis were a threat.[10]

Many of the escalation of force incidents occurred at checkpoints where U.S. forces were primarily equipped with signal flares, traffic paddles, and lethal weapons. The results of a 2012 military utility assessment (MUA) conducted by the U.S. Army at Fort Benning, Georgia, indicated that increased availability of IFCs might have had a positive impact on checkpoint escalation of force incidents. The MUA evaluated the utility of IFCs at a snap vehicle checkpoint to stop cars that matched specific intelligence criteria.[11] The scenario was not a vehicle checkpoint typically seen at entrances to

Marines with 2nd Battalion, 7th Marines, assigned to Special Purpose Marine Air-Ground Task Force–Crisis Response–Central Command 19.2, throw nonlethal grenades during nonlethal weapons training exercise, January 18, 2020 (U.S. Marine Corps/Branden J. Bourque)

bases, but a hasty one meant to be set up quickly by maneuver elements of an infantry unit instead of security forces, and with no advance warning to the local populace. During the assessment, Soldiers had a baseline capability set to warn approaching vehicles, and this did not include IFCs. An enhanced capability set equipped with IFCs was used later. Numerous iterations of multiple scenarios were conducted where the intent of approaching vehicles was unclear. When IFCs were used, vehicles were detected, hailed, warned, and stopped an average of 70 meters farther away. Additionally, vehicles were 80 percent more likely to stop prior to the use of lethal force, and the likelihood of civilian wounding decreased by 77 percent.

The IFCs used in these scenarios included acoustic hailing devices, green dazzling lasers, 40-millimeter and 12-gauge flash-bang warning munitions, and a vehicle lightweight arresting device. The baseline set consisted of signal flares, traffic paddles, and lethal weapons. Employed in a layered defense, the availability of these relatively low-cost IFCs increased the Soldiers' ability to conduct threat assessments of oncoming cars, communicate with and signal to vehicles, de-escalate a potentially lethal scenario, and reduce civilian casualties. The MUA's results provide a quantitative look at the value of IFCs integrated across the joint force and not only in the law enforcement or security forces communities.

Lessons Learned?

The following are key questions for the joint force: Have the lessons from postconflict Iraq and Afghanistan been learned? Will future postconflict security environments fare any better? A case study by the U.S. Army's Peace Keeping and Stability Operations Institute on the postconflict environment following a hypothetical conventional war with North Korea in which South Korea and the United States prevail provides an illustrative example.[12] The study examined the aftermath of a kinetic battle, where a tremendously large—and most likely starving and frightened—population would endure. The following case study questions illustrate the challenges:

- How would the immediate security needs of the population be met, especially with several hundred rogue North Korean soldiers and police officers on the loose who have not surrendered, as well as a populace that is at best deeply suspicious of foreigners and at worst deeply terrified of them?
- How would refugee camps be secured? As some desperate North Koreans turn to crime (such as attacking World Food Program convoys), what would be the response?

Soldier with 2nd Battalion, 34th Armored Regiment, 1st Armored Brigade Combat Team, 1st Infantry Division, launches grenade down range with MK-19mm grenade machine gun at Grafenwoehr Training Area, Germany, March 13, 2019 (U.S. Army/Yon Trimble)

- How are strategic communications conducted with a frightened population to reassure them that their immediate needs would be met and that the foreign government personnel and forces should not be feared?

A force trained and equipped only with lethal weapons would be challenged in maintaining security and minimizing civilian casualties in this scenario. IFCs, integrated into conventional platforms along with lethal systems, afford military forces means to provide security at logistics hubs for the distribution of supplies, convoy security, and protection of refugee camps and critical infrastructure. Information on the types of IFCs being employed could be readily communicated to the civilian population through an information operations and public affairs campaign, demonstrating the resolve to maintain security while also protecting the civilian population—the same approach employed by General Zinni in Somalia. A prudent investment by DOD in the training and equipping of the joint force with an appropriate mix of IFCs has the potential to save DOD and the Nation the long-term human and fiscal costs of extended stability operations by quickly maintaining the safety and security of the population.

A Sensible Tool for Building Partner Capacity

Cooperative efforts with our partners on intermediate force capabilities would provide many advantages for the joint force. In competition below armed conflict, partners trained and equipped with IFCs would have a means to push back against competitor aggression without resorting to lethal force. This has the potential for reduced reliance on U.S. assets for deterrence, enabling greater economy of force and reallocation of U.S. resources to other priorities.

Postconflict environments transitioning to civil authority would benefit when host-nation security forces are trained and equipped with IFCs. The Iraq War provides a good exemplar. In Iraq, coalition forces had to reverse initial plans not to provide heavy weapons to Iraqi National Police as the counterinsurgency grew and the security situation deteriorated. Instead of receiving the proper tools to conduct domestic law enforcement, Iraqi National Police units were equipped with heavy weapons such as machine guns and rocket-propelled grenades. As a result, the coalition was effectively training and equipping the police as paramilitaries capable of conducting counterterrorism and counterinsurgency operations.[13] The availability of IFCs would have enabled a force application option when the situation did not call for the employment of heavy weapons, providing an intermediate level of force appropriate for a wide range of policing functions.

North Atlantic Treaty Organization (NATO) policies on nonlethal weapons and the protection of civilians are representative of the applicability of intermediate force capabilities to the Alliance. Over the past 20 years, NATO members have participated in formal systems and analysis studies on NLWs (IFCs) to evaluate measures of effectiveness, inclusion in concepts, and opportunities for future operations.[14] NATO has also conducted NLW (IFC) technology demonstrations as well as maritime and land exercises.[15] The maritime exercise demonstrated that integrating NLWs into escalation of force

situations encountered during visit, board, search, and seizure missions increased the operational effectiveness of boarding teams to warn a vessel's crew, move people, deny access to an area, and suppress individuals. The land exercise demonstrated that integrating NLW into escalation of force situations encountered during counterinsurgency missions increased the operational effectiveness of NATO forces to warn a potential threat, support the threat assessment process, move people, deny access to an area, and suppress individuals. Despite the apparent operational benefits, and similar to the United States, our NATO partners have not prioritized the training and equipping of these capabilities for their respective nations.

Mainstreaming IFCs

DOD has benefited from a formalized NLW program for more than 20 years. Much has been accomplished in that time, including the fielding of NLW primarily in support of military security and law enforcement functions. Extensive research into new technologies has yielded promising results. These technologies are now approaching a form factor such that they and their associated systems and subsystems could be integrated into a wide range of military platforms for missions on land, sea, and air. The scope of these capabilities goes well beyond legacy law enforcement applications and is better described as intermediate force capabilities.

The de-escalatory advantages that IFCs could provide in the gap between shouting and shooting, as well as providing increased time/decision space, are largely missing from joint warfighting concepts and doctrine. To institutionalize IFCs, a comprehensive and sustained approach must be pursued that includes an increased demand signal from the combatant commands and additional support from the Services, Joint Staff, and Office of the Secretary of Defense. Further work is needed in concept development, use of modeling and simulation to assess the contribution of IFCs to mission accomplishment, and routine inclusion of IFCs in wargames. By doing so, IFCs could begin to be mainstreamed into operational planning, exercises, and mission essential task lists, as well as in training and professional military education.

Summary

A joint force trained and equipped with intermediate force capabilities would be better prepared to compete, fight, and win across the spectrum of operations. Along with the clear objective of having the world's most powerful and lethal military force, U.S. political and military leaders also continue to emphasize a key value of the Nation: to use that force only when absolutely necessary, stressing the importance of minimizing civilian casualties and the loss of innocent life when lethal force must be applied.

Intermediate force capabilities provide a means to assess potential threats, de-escalate situations, and increase the time and space to make decisions on the use of lethal force. Technology has significantly evolved beyond the traditional bean bags, rubber bullets, and tear gas of the last century—enabling a new generation of capabilities that could expand the competitive space and counter adversaries' strategies to exploit U.S. vulnerabilities. Sustained commitment by DOD civilian and military leadership is needed to mainstream these capabilities and make them part of the tool kit for all warfighters—from the infantry squad to the combatant commander—in support of national security objectives. With proper tools and training, our warfighters will remain unbeatable across the entire competition continuum. **JFQ**

Notes

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