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Russia–Georgia War Highlights Need for Directed-Energy Defenses

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For the second time in recent years, the United States has witnessed another wake-up call for the importance of fielding directed-energy weapons capable of shooting-down mortar and artillery fire, as well as intercepting short-range rockets and missiles. The Pentagon, the Department of Homeland Security, and the Congress need to place more emphasis on fielding working prototypes of these systems as quickly as possible.

People as Targets. Terrorism continues to be the scourge of the 21st century, but the age of conventional wars is far from over. In recent years we have had plenty examples where both means of warfare have employed conventional weapons to target civilians. Specifically, indirect fire weapons from mortars to short-range missiles have been directly targeted against innocents or employed against military targets in urban areas, putting civilian populations at risk. Terrorists in North Africa attempted to shoot down a commercial airliner with a short-range surface-to-air missile. In Iraq, insurgent groups used mortars to fire on administrative buildings, as well as military facilities in Baghdad and other urban areas.

Even more troubling, however, is the use of these conventional weapons in combat zones aimed at the heart of civilian populations. In the 2006 battles between Israel and Hezbollah in Lebanon, Hezbollah's Katyusha rocket attacks killed and wounded dozens of Israelis, destroyed property, and sent thousands to bomb shelters. The rain of rockets threatened to spark a larger regional conflict.

Another Rage of Rockets. The Russian incursion into Georgia last week saw the use of rockets in urban areas by both sides. According to reports in *The New York Times*, Georgia fired BM-21 rockets, a system similar to the Katyusha, at separatist military headquarters. Although the rockets appear to have been aimed at legitimate targets, the risk of damage to the surrounding civilian community from these inaccurate weapons may have been high. According to other press and eyewitness reports, during the massive Russian military offensive, ground troops fired dozens of SS-21s, a short-range ballistic missile that can carry a high-explosive warhead. It is not clear whether these weapons were fired at legitimate military targets. In addition, the large SS 21 high-explosive warhead can carry either fragmentation bombs or mines making the risk of civilian casualties in urban areas very high.

The Promise of Directed Energy. Despite repeated warning signs that both unconventional and conventional combatants have no problem using the weapons of war to target both military and civilian populations, the United States has shown little sense of urgency in developing effective countermeasures for either equipping military forces or safeguarding civilian populations.

This paper, in its entirety, can be found at:
www.heritage.org/Research/NationalSecurity/wm2030.cfm

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Directed energy weapons, such as the Tactical High-Energy Laser (THEL), demonstrate tremendous potential against all kinds of mortar, artillery, rocket, aircraft, and missile threats. Directed energy can be used against short-range threats like the Katyusha rockets being fired at Israel and against ballistic missiles like the SS-21s fired at Georgia. Such systems could also be used for homeland security, such as protecting critical infrastructure, national security events (such as the presidential nominating conventions) and commercial air traffic from terrorist attack.

Concluding that the THEL was not sufficiently mobile and robust for battlefield use, the U.S. Army decided to forgo its full development. Meanwhile, though the Department of Homeland Security has experimented with some systems to defend commercial flights against surface-to-air missiles, it too has not deployed any operational systems.

The Clock Is Ticking. Rather than deploy the THEL, the national security community has turned to a new generation of lasers for developing suit-

able directed-energy protective systems. These lasers employ a solid-state technology, incorporating multiple industrial thin disk lasers into a single high-powered energy device. The military is currently developing prototypes for a mobile version of this system.

Congress should insist and the administration should press to field operational prototypes of these systems as quickly as possible for both defense and homeland security applications. Both land-based and air-based platforms (mounted on manned and unmanned aircraft) should be fielded as soon as possible. Putting a system in the field now would provide some limited operational capability and invaluable operational experience on how to use these systems.

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