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Protecting the Warfighter in an Austere Budget Environment

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Briefing Highlights

The debate over defense spending is about policy and priorities. Policy involves choices, and the choices we have made raise concerns over whether we are capable of achieving the goals of our defense strategy and adequately prepared to meet the security challenges we face.

...
Five specific non-traditional, asymmetric threats that our warfighters are likely to confront deserve greater attention including: terrorism, cyber warfare, WMD and ballistic missile proliferation, electromagnetic pulse (EMP), and increased complexity and “urbanization” of the battlefield.

...
We live in a world where the technologies to create more destructive weaponry are becoming increasingly ubiquitous. The spread of WMD technologies and the ballistic missiles that carry them is an example. WMD-armed ballistic missiles pose a growing threat to American troops overseas, to U.S. allies, and to the U.S. homeland.

...
The U.S. can afford to spend whatever it needs to defend the country and its military forces. The percentage of our national economic output allocated to defense is near historic lows – only about 3.4%, still significantly less than the post-World War II average of 5.5%.

...
Unlike the military budgets of Russia and China that focus a large proportion on weaponry, the largest share of our defense budget goes to provide pay and benefits to our men and women in uniform who volunteer to serve our nation. Moreover, no other nation has the global responsibilities the United States does.

Winston Churchill is often quoted as saying, “Gentlemen, we have run out of money. Now we have to think.” A similar statement is attributed to Ernest Rutherford, a New Zealand physicist often cited as the “father” of nuclear physics. Regardless of who uttered this quote, many believe it appropriately summarizes the state of America’s defense establishment today. “Fiscal austerity” is the environment in which national security decisions are made.

From Asia to Africa and from Europe to the Middle East, the United States and its military forces confront extraordinary security challenges. Despite what has been characterized as America’s war weariness, U.S. forces are likely to be engaged in hostilities more frequently, in more places, and under more complex and challenging conditions than ever before. Meanwhile, Congress has yet to pass a defense budget for the 2015 fiscal year and will be forced to make further cuts in defense spending in fiscal year 2016 as a result of “sequestration” – a dangerous by-product of Congress’ inability to agree on how to reduce the nation’s budget deficit.

This is a good time to step back and look at the threats we face, our strategy for dealing with them, and whether the investments we are making in this period of fiscal austerity are adequate to provide our military with the tools it needs to execute our defense strategy and counter those threats.

Hard choices

Fundamentally, the debate over defense spending is a debate over policy and priorities. Policy involves choices, and the choices we have made raise concerns over whether we are capable of achieving the goals of our defense strategy and adequately prepared to meet the security challenges we face.

Although we face a multitude of both regular and irregular warfare threats, five specific non-traditional, asymmetric threats that our warfighters are likely to confront deserve greater attention. These are:

1. Terrorism
2. Cyber warfare
3. WMD and ballistic missile proliferation
4. Electromagnetic pulse (EMP)
5. Increased complexity and

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DEFENSE TECHNOLOGY PROGRAM BRIEF

“urbanization” of the battlefield

Obviously, there are other pressing threats, but these five can have a significant impact on the ability of our warfighters to execute their missions successfully. To address each successfully will require additional fiscal resources, even in a period of budget austerity.

Before addressing these threats, it is worth considering the notion of fiscal austerity and how it relates to our defense strategy. This year’s Quadrennial Defense Review (QDR) speaks of “the tough choices we are making in a period of fiscal austerity to maintain the world’s finest fighting forces” and says that “investment decisions will ensure that we maintain our technological edge over potential adversaries.”¹ Through innovation, the QDR suggests we will do more with less.

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This is a rosier conclusion than that expressed in the Marine Corps’ newest vision statement, “Expeditionary Force 21,” which explicitly declares that “the erosion of U.S. technological advantages in areas where we have long enjoyed relative superiority, is likely to continue.”² It also appears at odds with the White Paper released by the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) just this September, which concludes there has been “a remarkable leveling of the state of technology in the world.... Our technological superiority is not assured, and in fact it is being challenged very effectively right now.”³ Indeed, in his assessment of the QDR, Joint Chiefs of Staff Chairman General Martin Demsey noted that “in the next 10 years, I expect... our technology edge to erode...” and stated, “The smaller and less capable military outlined in the QDR makes meeting... [our global] obligations more difficult.”⁴ The fact is, less is not more; less is less.

Ends and means

Policy wonks like to talk about the “strategy-resources mismatch.” This is nothing new. But actions have consequences and by failing to properly resource our strategy we put our warfighters – and the nation they protect – at greater risk.

“To say our defense strategy is ‘resource-informed,’ to use the language the Obama Administration prefers, is to acknowledge it is resource-constrained... There is a clear disconnect between the threats we face, our defense strategy, and the resources we apply to it.”

Strategy should drive budgets, not the other way around. But too often the opposite is true. To say our defense strategy is “resource-informed,” to use the language the Obama Administration prefers, is to acknowledge it is resource-constrained, as the critics argue. Strategy today is almost an afterthought – developed after we think about how much we have to spend. There is a clear disconnect between the threats we face, our defense strategy, and the resources we apply to it.

A recent estimate by the Center for Strategic and Budgetary Assessments (CSBA) notes that the Administration’s FY15 defense budget request is “insufficient to support the defense program and strategy articulated in the 2012 Defense Strategic Guidance (DSG) and the 2014 Quadrennial Defense Review (QDR).” It concludes that to meet the defense requirements outlined in the 2014 QDR we would need to spend \$200-300 billion more than currently projected over the FYDP.⁵

In the past four years, overall defense spending, adjusted for inflation, has dropped by more than 20 percent. Defense spending has been cut by hundreds of billions of dollars from planned levels as a result of “efficiency initiatives,” the Budget Control Act (BCA), and sequestration. The need for American leadership and a visible U.S. military presence is arguably greater than ever. Yet we are spending less, we are buying less, we are developing less, and we are

PROTECTING THE WARFIGHTER

able to do less. These are not the actions of a nation that takes its global responsibilities seriously.

The Congressionally-chartered bipartisan National Defense Panel concluded that the cuts to defense have been “a serious strategic misstep” that has not only damaged readiness but have caused U.S. allies “to question our commitment and resolve.”⁶ They have also provided an opening for adversaries to exploit.

Yes, budgets are tight. No one is denying that fact. And no one advocates simply throwing money at the Pentagon. But we should not confuse austerity with unaffordability.

Let’s be clear: The United States can afford to spend whatever it needs to defend the country and its military forces. The percentage of our national economic output allocated to defense is near historic lows – only about 3.4 percent, still significantly less than the post-World War II average of 5.5 percent.

The issue of affordability is a choice – defense spending is discretionary spending, meaning we can afford to spend more on defense as long as we are willing to spend less on something else. It reflects our priorities as a nation.

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Those who say we already spend too much on defense often compare what we spend to what other nations spend on the military. One recent study suggests that the United States spends more than the next eight countries combined.⁷ But of course what really matters is not what we spend but what we spend it on.

Unlike the military budgets of countries like Russia

or China, which devote a much greater proportion of money to weapons and equipment, the largest share of our defense budget goes to provide pay and benefits to our men and women in uniform who volunteer to serve our nation. Moreover, no other nation has the global responsibilities the United States does. It is the U.S. Navy that guarantees freedom of the seas worldwide. It is the U.S. Marine Corps that is the “first responder” for both humanitarian aid and in time of crisis or conflict.

So talk of budget austerity notwithstanding, we spend more on defense because we have to – unless we want to cede our global responsibilities to others who have neither the capacity nor the capability to do what we do.

The war on terror

Let’s turn to consideration of some potentially high-consequence threats to the warfighter and what we should do about them.

Clearly the growth of radical Islamist extremism threatens us all, but our warfighters will be the ones on whose shoulders the burden of confronting it directly will fall. The extremism represented today by the Islamic State or ISIL knows no boundaries and is symbolized by beheadings, massacres, and other unimaginable horrors inflicted on non-believers. This is mass murder on a scale rivaling the worst types of genocide and ethnic cleansing.

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Like it or not, we are in a war of survival with those who, under the guise of a religious theology, seek to create an Islamic caliphate devoted to our total destruction. Secretary of Defense Chuck Hagel says ISIL poses an “imminent threat... beyond anything we’ve seen.”⁸ They are slaughtering Muslims and beheading Westerners,

DEFENSE TECHNOLOGY PROGRAM BRIEF

including Americans. British Prime Minister David Cameron stated that “this is not some foreign conflict thousands of miles from home that we can hope to ignore. The ambition to create an extremist caliphate in the heart of Iraq and Syria is a threat to our own security.”⁹ Retired Marine Corps General John Allen, who is coordinating the U.S. effort against ISIL, called it a “clear and present danger.”¹⁰

“We need to approach the threat of terrorism – including the battle against the Islamic State – as a war, not simply a judicial action. We need to destroy the capacity of those who seek to kill us simply because we are Americans, not bring them to ‘justice’ after they have attacked us.”

In response, the United States has cobbled together a coalition of reluctant partners, some of whom question our resolve, refuse to send ground troops to fight these Islamic extremists without the United States putting its own “boots on the ground,” or refuse to allow the United States to use their territory to help protect them. Of the more than 40 countries that the Administration says are assisting in the effort to counter ISIL, fewer than half a dozen actively participated in the initial kinetic attacks on ISIL targets.¹¹ Legal scholar and former Justice Department official John Yoo has called this the “coalition of the illing.”¹²

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Whether we call it a “war” or a “counter-terrorism operation,” greater investment is necessary in the types of equipment that can take the fight against terrorism directly to the terrorists. For example, a greater emphasis on Intelligence, Surveillance, and Reconnaissance (ISR) capabilities is needed. This can be provided by the use of manned and unmanned platforms, like the U-2

and Global Hawk Unmanned Aerial Vehicle (UAV). However, the Administration plans to retire the U-2 well before the Global Hawk can replace it – and without any assurance the less-capable Global Hawk will survive at all if sequestration kicks in again next year as the current law requires.

As one analyst put it:

...at a time when the Obama Administration is getting ready to rely on U.S. air power to defeat a new generation of terrorists, it is dismantling a vital airborne reconnaissance capability for which it has no near-term alternative. This move is emblematic of the way U.S. administrations have given lip service to the joint force’s edge in warfighting technology since the Cold War ended while starving the Pentagon’s investment accounts of the funding needed to preserve that edge.¹³

President Obama’s expanded use of drone strikes in the war on terror is useful, but insufficient. Likewise, the air strikes carried out by the United States and a handful of Arab partners in the region against ISIL targets in Iraq and Syria are judged by some to be a necessary but not sufficient condition for victory.¹⁴ To be successful in this war will likely require more than just airstrikes. Most military experts agree that it will require manpower on the ground, perhaps including U.S. Special Operations forces specially trained for counterterrorism missions and equipped with technologically sophisticated systems. One estimate published by the Institute for the Study of War concludes that it may take as many as 25,000 U.S. ground troops deployed in Iraq and Syria, including “teams of Special Forces and special mission units” to succeed against ISIL.¹⁵

Our current allergy to the deployment of combat troops means more and more of our military operations will be conducted by special operations forces. Adm. William McRaven, head of U.S. Special Operations Command (USSOCOM), has indicated his forces need “revolutionary, game-changing” technologies. These include smaller, lighter, and more portable lasers and specialized night vision capabilities.¹⁶ These important

PROTECTING THE WARFIGHTER

capabilities are hardly budget-busters by any stretch of the imagination. Fortunately, USSOCOM has been the beneficiary of additional funding, but as we rely more heavily on these forces in more theaters of operation the costs of doing so will necessarily increase.

Despite the need for more sophisticated technologies for our special force operators, good technology cannot compensate for bad policy. Technology can inform policy, but it is only an enabler, not a solution.

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Some budget analysts suggest the cost of fighting ISIL may top \$15 billion annually.¹⁷ DoD may include this additional funding in the supplemental Overseas Contingency Operations (OCO) budget, which is exempt from the BCA caps. Some argue that the cost of this effort will add to pressure to overturn the sequester and stop the hemorrhaging of defense dollars. In fact, some are already predicting a boon for defense contractors, signaling that the period of budget austerity may be ending.¹⁸

Cyber warfare

Second is the threat that cyber warfare poses to our warfighters. Our battlefield superiority is enabled by our technological dominance, including the ability of our troops in the field to gather, process, and utilize enormous quantities of information and data. Our forces are increasingly networked via sophisticated communications technologies that, despite their sophistication, are susceptible to degradation and being countered through electronic warfare and targeted attacks.

The prospect of cyber attack can nullify our traditional military advantages. As one recent analysis noted, “The electron is fast becoming the ultimate precision guided munition (PGM), capable of devastating the targeted nation’s economy, critical infrastructure, and military.”¹⁹ Our national dependence on sophisticated electronics for just about everything makes the United States especially vulnerable to this type of electronic warfare. But by most accounts, the United States is ill-prepared to deal with this threat. The consequences of this could be catastrophic.

Let me quote from one analysis that paints a sobering picture:

...prudent planning should assume that in a full-scale conflict with a mature adversary, the U.S. would have to deal with any and all of the following: denial of service; data and supply chain corruption; jamming; spoofing; traitorous insiders; and kinetic and non-kinetic attacks at all altitudes – in and through all domains. Weapons systems might not work, or, worse, fire on friendly forces. Critical resupply – ammunition, spare parts, food, water, and medical evacuation – might not arrive when or where needed. Leaders trained to trust information displayed on their various plasma screens are particularly vulnerable to deception and manipulation. As a result, operators would lose trust in the data they receive, further degrading the ability to command forces and control systems.²⁰

The implications of this for the warfighter are clear. While defending against this threat has the potential to absorb a huge amount of budget resources, failing to do so can lead to potentially crippling attacks on our military.

Our adversaries clearly are not standing still and are aggressively looking for ways to turn our electronic superiority into a vulnerability – a kind of electronic Pearl Harbor. In September, the Senate Armed Services Committee issued a declassified report which notes that China successfully hacked into the computer systems

DEFENSE TECHNOLOGY PROGRAM BRIEF

of U.S. Transportation Command (USTRANSCOM) contractors at least twenty times between June 2012 and June 2013.²¹ USTRANSCOM, which is responsible for transporting U.S. forces and equipment worldwide, was unaware of all but two of these intrusions. And this is only one example affecting one Combatant Command. The Defense Science Board has noted that “the superiority of U.S. military systems is critically dependent upon increasingly vulnerable information technology”²² and identified more than two dozen advanced U.S. weapons systems that were compromised by Chinese hackers, including the F-35 Joint Strike Fighter, the Navy’s Littoral Combat Ship, and other offensive and defensive systems.²³ Iran reportedly controls at least 16,000 computer systems in other countries, including infiltrating 2,000 computers of businesses in the United States and elsewhere.²⁴

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Because many of the networks subject to infiltration belong to private sector industries that support the defense enterprise, the government is limited in its ability to protect them. Gen. Dempsey has argued that companies have “no incentive” to share information on cyber attacks with DoD, and that such collaboration should be “standardized and mandatory.”²⁵ Clearly, we must do more to protect the computerized networks that support our warfighters. In this particular area, the application of “budget austerity” may lead to defeat.

WMD and ballistic missiles

Third, we live in a world where the technologies to create more destructive weaponry are becoming increasingly ubiquitous. The spread of weapons of mass destruction (WMD) technologies and the ballistic missiles that can carry them is an example. WMD-armed ballistic missiles pose a growing threat to American troops overseas, to U.S. allies, and to the U.S. homeland.

Ballistic missiles are attractive weapons for adversaries because of the lack of robust defenses against them. Iran is developing longer-range ballistic missiles and has demonstrated the ability to conduct salvo launches that could overwhelm an enemy’s defenses. Given North Korea’s penchant for selling ballistic missiles on the black market, it is not unimaginable that U.S. forces will confront missile threats on the battlefield in unexpected places.

“It is time to revitalize our missile defense effort across the board. This includes rethinking our reluctance to deploy space-based defenses that can change the cost-benefit ratio of missile defense in our favor. Though technologically challenging, boost-phase and ascent-phase missile defense provide the most efficient ways to counter ballistic missiles after they are launched.”

Our warfighters abroad may also find themselves at greater risk than ever before from intermediate-range ballistic missiles as potential adversaries develop these capabilities while the United States is prohibited from doing so under the terms of the 1987 INF Treaty – a treaty that Russia is today violating. Indeed, Russia has an aggressive ballistic missile development program, has deployed ballistic missiles along NATO’s borders, and has openly threatened NATO allies with nuclear attack.

While defense against ballistic missiles is technically feasible, our missile defense policy lacks a sense of urgency and appears to be on auto-pilot. We spend roughly \$8-10 billion per year on programs designed to offer us modest protection against limited ballistic missile threats while keeping us deliberately vulnerable to those states with the most substantial nuclear missile arsenals.

The Obama administration’s policy is to maintain “stability” with Russia and China, which means not countering their capability to threaten the United States with nuclear destruction. This is a throwback to the Cold

PROTECTING THE WARFIGHTER

War policy of mutual vulnerability.

Technology can help alleviate this vulnerability, but again, we have made a conscious policy choice to limit our technological options. Promising missile defense programs have been neutered or terminated, including the Multiple Kill Vehicle, the Kinetic Energy Interceptor, and the Airborne Laser, which would harness the power of directed energy to defend the nation by defeating ballistic missiles after launch and before they can reach our soil.

It is time to revitalize our missile defense effort across the board. This includes rethinking our reluctance to deploy space-based defenses that can change the cost-benefit ratio of missile defense in our favor. Though technologically challenging, boost-phase and ascent-phase missile defense provide the most efficient ways to counter ballistic missiles after they are launched.

Our missile defense programs to protect the warfighter include the highly successful Standard Missile-3 (SM-3), designed to counter short- and medium-range ballistic missiles. The SM-3's track record is excellent, scoring 28 intercepts in 34 attempts.²⁶ Expanding the number and capabilities of the SM-3 will improve protection to U.S. troops in the field. Equipping more Aegis-class ships with missile defense capability can extend their protective reach, even potentially to our own shores.

Our Ground-Based Midcourse Defense (GMD) program to protect the homeland is also treading water. We rely on a limited number of GBIs, whose reliability has been called into question as a result of multiple test failures.

It is imperative to fix the existing GBIs and improve the overall reliability of the GMD system. This will require more testing, more often. A program that averages roughly one test per year is not a serious program. And it certainly does not convey seriousness to others.

The Missile Defense Agency (MDA) has requested \$26 million to begin development of a new kill vehicle that takes advantage of improvements in technology. This is all well and good, but we should not let our focus on designing and building something better detract us from

“Critics continue to downplay the utility of missile defenses, arguing they are too costly, can be easily countered, and are ineffective. These criticisms are off-target. Remarkable progress has been made in the ability to intercept ballistic missiles in flight. The cost of shooting down a WMD-armed missile is substantially cheaper than allowing it to get through.”

fixing what we already have. Reengineering the existing GBI kill vehicle would be quicker and less costly than starting over from scratch. Unfortunately, MDA has stated it will cancel plans to fix the existing GBIs if the sequester occurs next year. This would be a major mistake. Instead, MDA should build on the success and apply the lessons of the SM-3 program to the GMD system. And our efforts to fix the GMD system should not come at the expense of our theater missile defense programs designed to protect our warfighters.

Critics continue to downplay the utility of missile defenses, arguing they are too costly, can be easily countered, and are ineffective. These criticisms are off-target. Remarkable progress has been made in the ability to intercept ballistic missiles in flight. The cost of shooting down a WMD-armed missile is substantially cheaper than allowing it to get through. And while enemy countermeasures pose technical challenges, the proposition that it is relatively harder for us to defeat their attack than it is for them to counter our defenses is at least debatable. For some critics it seems our missile defenses will never be perfect, but our adversaries' attempts to counter them will always be. For some states like Israel that have lived under the threat of missile attack, however, the debate over the value of pursuing missile defenses has been definitively answered.

Here again, technology can be an enabler of progress, if our policy will allow it. Lasers and other directed energy systems can not only greatly reduce the vulnerability of our warfighters to ballistic missile attacks, but can help improve the overall cost-effectiveness of missile defenses.

DEFENSE TECHNOLOGY PROGRAM BRIEF

Even unmanned aerial vehicles may play a useful role in defending against ballistic missiles in their ascent phase. And all of these enhancements should be coupled with improvements to our missile defense sensors and command and control architecture.

The EMP threat

Fourth, it is time to pay more attention to the threat of an electromagnetic pulse (EMP) attack caused by a nuclear detonation over the United States. EMP is not a threat that disappeared with the end of the Cold War. If a chain is only as strong as its weakest link, then our ability to defend against EMP may be our Achilles Heel. The EMP threat affects not only our ability to function as a society here at home, but our ability to support our warfighters overseas.

An EMP event could cripple our nation's critical infrastructures. The more dependent we are on technologically sophisticated, micro-miniaturized, and computerized electronics, the more vulnerable we are to the effects of an EMP burst that could shut down everything we count on in our day-to-day lives – from telecommunications, to transportation, to emergency services, to banking and finance, power, even to food and water supplies.

Our ability to protect our warfighters depends on the ability to communicate with them and to reinforce them with the equipment and supplies they need to be successful. Virtually all of the electrical power that supports our military installations in the United States is provided by the civilian power grid, which is dangerously vulnerable to disruption. An EMP attack on the United States could degrade or destroy our ability to communicate with deployed forces or flow military troops into overseas theaters of conflict. An EMP attack on our military forces overseas could cripple our high-tech advantages and “level the playing field” for our adversaries.

Our vulnerability to this threat is not a secret to our adversaries. States like Russia, China, and Iran are reportedly developing capabilities to maximize EMP effects, while terrorist groups seek ways to attack and shut

down the power grid.²⁷ Last year, a deliberate attack on a power sub-station in California led to concerns over the vulnerability of the U.S. electrical grid. During Russia's annexation of the Crimea, communications were cut off between the peninsula and the rest of Ukraine when fiber optic cables were deliberately sabotaged.²⁸ Earlier this year, a terrorist attack succeeded in dropping the electrical power grid in Yemen – the first time an entire country was blacked out as a result of a terrorist action.²⁹

“An EMP attack on our military forces overseas could cripple our high-tech advantages and ‘level the playing field’ for our adversaries.”

A decade ago, the Congressionally-chartered EMP Commission concluded that the EMP effect of a nuclear weapon detonated at high altitude “is one of a small number of threats that has the potential to hold our society seriously at risk and might result in defeat of our military forces.”³⁰ The Commission noted that the cost of improvements to protect our critical national infrastructures against EMP effects is “modest by any standard.”³¹ But many of the Commission's recommendations remain unrealized.

In commenting on the impact of an EMP event on the ability to protect our military forces, the Commission noted:

The success of these forces depends on the application of a superior force at times and places of our choosing. We accomplish this by using a relatively small force with enormous technological advantages due to superior information flow, advanced warfighting capabilities, and well-orchestrated joint combat operations. Our increasing dependence on advanced electronics systems results in the potential for an increased EMP vulnerability of our technologically advanced forces, and if unaddressed makes EMP employment by an adversary an attractive asymmetric option.³²

To its credit, DoD has taken steps to improve our

PROTECTING THE WARFIGHTER

military's ability to operate in an electromagnetic threat environment. A recent DoD Directive states as a matter of policy that "Military systems will meet their operational performance requirements without experiencing unacceptable performance degradation" as a result of electromagnetic environmental effects. It also requires measures to counter EMP be implemented "throughout the acquisition life cycle of military platforms, systems, subsystems, and equipment."³³

"[A nuclear EMP event] and the effects of major solar storms can have potentially catastrophic consequences for the electrical grid that supports our society and generates power for much of our military. Hardening the power grid should be among our top priorities."

As a recent study noted, even the effects of major solar storms can have potentially catastrophic consequences for the electrical grid that supports our society and generates power for much of our military.³⁴ Hardening the power grid should be among our top priorities.

An increasingly complex battlefield

Fifth, today's security environment is increasingly characterized by ethnic turmoil, religious extremism, political and economic upheaval, and widespread instability. As the Marine Corps' "Expeditionary Force 21" concept explains, "We must expect a security landscape characterized by volatility, instability and complexity."³⁵

Some in the military refer to this as the "New Normal" – a situation where we are confronted with asymmetric threats, irregular adversaries, and complex environments that go beyond traditional warfare. We are already witnessing non-traditional forms of combat in Europe. NATO Commander Gen. Philip Breedlove has called Russia's tactics in Ukraine a form of "hybrid warfare."³⁶ This is the kind of warfare U.S. troops may confront in future conflicts.

A recent Army study concluded that population density in

urban areas is increasing, stating: "It is inevitable at some point the United States Army will be asked to operate in a megacity and currently the Army is ill-prepared to do so."³⁷ This will make the warfighter's job of discriminating friend from foe more difficult and make civilian casualty avoidance more challenging.

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We have all seen the strategic consequences that unintended civilian casualties can have on the successful accomplishment of warfighter objectives. Unintentional civilian casualties caused by coalition operations in Afghanistan led to decreased trust among the local populace and strategic setbacks. The recent 50-day war between Israel and Hamas also demonstrated the importance of limiting civilian casualties – and the difficulty of placing one's own military forces at risk in attempting to do so.

Our warfighters will increasingly confront an enemy that engages in asymmetric and irregular warfare tactics, to include hiding among the innocent civilian population in densely populated urban areas. Lieutenant General William C. Mayville, Jr., Director of Operations J-3, has noted that ISIL fighters in Iraq and Syria are doing just that in an attempt to deter U.S. airstrikes.³⁸ This places an even greater premium on avoiding non-combatant casualties in military operations.

As our warfighters find themselves operating in increasingly complex and urban environments, non-lethal technology can provide a way for them to discriminate between combatants and non-combatants, and to minimize unintended civilian casualties in the process.

Newer generations of non-lethal weapon systems, including directed energy systems, will give our warfighters greater options between shouting and shooting. Non-lethal means to stop vehicles, disable vessels, and disperse crowds will be critical in the future to ensuring our warfighters have

DEFENSE TECHNOLOGY PROGRAM BRIEF

the ability to protect themselves as necessary in short-of-lethal scenarios while avoiding responses that cause unintended fatalities.

The Department of Defense is pursuing initiatives to reduce the size and weight of advanced non-lethal weapons systems while improving their performance. The most noteworthy of these efforts involves solid-state active denial technology (ADT). This “next generation” technology uses directed energy millimeter waves to cause a fully reversible heating sensation on the skin, and an involuntary response to move quickly out of the way, and promises to be a game-changer. Solid-state active denial technology is the latest in a progression of ADT technology demonstrators and is configured in a significantly smaller footprint than previous systems to achieve warfighter size, weight, and performance requirements.

Investment in directed energy is a cost-effective alternative to more traditional kinetic weapons, and Congress has established a Directed Energy Caucus to focus lawmakers on these important game-changing technologies. Rear Adm. Matthew Klunder, head of the Office of Naval Research, says lasers provide a relatively inexpensive and “revolutionary capability” that costs roughly \$1 per shot. “Spending about \$1 per shot of a directed-energy source that never runs out gives us an alternative to firing costly munitions at inexpensive threats,” he has noted.³⁹

Critics of advanced technologies often confuse cost with value. But the value of this type of technology to the warfighter cannot be overstated. Non-lethal weapons are applicable to a wide range of scenarios and operational contingencies. Importantly, they are an adjunct to, not a substitute for, lethal force. They can provide warfighters with options between shouting and shooting; force protection measures that minimize unintended civilian casualties; additional versatility and adaptability; and a way of determining an individual’s intent in ambiguous situations.

Current spending on non-lethal weapons is a fraction of one percent of the overall DoD budget. The DoD Non-Lethal Weapons Program costs the taxpayer less than \$100 million a year. For a Department whose budget exceeds

\$600 billion, this is the equivalent of a rounding error.

Despite this relatively minimal investment, funding for non-lethal weapons research and development as well as procurement has dropped substantially. In part, this is due to other Service priorities in an austere budget environment. As the House Armed Services Committee (HASC) noted in this year’s mark-up of the National Defense Authorization Act (NDAA), DoD has proposed “a roughly one-third reduction in fiscal year 2015 for overall Department of Defense non-lethal investments and more than a 40 percent reduction in the Future Years Defense Plan compared to the previous 5-year estimate.” In the committee’s view, these cuts could have “unintended or unforeseen impacts on contingency planning” as well as compromising the ability of our warfighters to accomplish their mission successfully.⁴⁰

Our failure to increase the priority given to these technologies places our warfighters at risk and is a clear case of being penny-wise and pound-foolish.

Other actions we should take to defend the warfighter include:

- Ending the drawdown of America’s armed forces. If we want to protect our warfighters, we need to make sure there are enough of them to do what we want them to do. After every major conflict, the United States reduced the size of its military significantly. The current drawdown is even more substantial. But unlike previous drawdowns, we are not entering a period of post-war peace. The size of our military is shrinking to the smallest level since before World War II. Our Army is contracting to 450,000 and may decrease further to 420,000; our Navy has declined to less than 300 deployable ships; and our Marine Corps – often called our “9-1-1 force” – is trending downward to 182,000 or less. Army Chief of Staff General Raymond T. Odierno has expressed “grave concern about the size of the military” and called for a reassessment of plans to make further reductions.⁴¹ He testified that with an Army of 420,000 “we cannot execute our current strategy.”⁴² The head of the Air Combat Command,

PROTECTING THE WARFIGHTER

General Mike Hostage, has stated the United States is reducing its military “to a skeletal size.”⁴³ Some see this as evidence of America’s decline, or that America is in global retreat. As Christiane Amanpour put it on CNN, “There’s been this sort of withdrawal from the world, from American leadership while the enemies, ISIS [ISIL], takes [sic] advantage of this vacuum.”⁴⁴ This perception worries our friends, emboldens our adversaries, and increases the risks to our warfighters.

- Increasing research and development (R&D) investments. R&D has been called the “seed corn” that allows us to maintain our technological edge. But it will be increasingly difficult to confront 21st century threats with 20th century technology. Despite the Administration’s stated assurances, R&D spending is being cut in fiscal year 2015, along with the procurement dollars necessary to field more modern weapons systems.⁴⁵ This near-term choice has long-term consequences.

- Avoiding ill-advised arms control agreements that tie our warfighters’ hands but do little to constrain our adversaries. Our warfighters should not be sent into harm’s way with one hand tied behind their back because of a misplaced belief that America’s enemies will be bound by the same moral and legal codes of conduct that govern our use of force on the battlefield. Prohibitions or restrictions on the use of certain weapons can have serious consequences for U.S. troops in the field. For example, the Administration’s desire to accede to the Ottawa Convention banning anti-personnel landmines (APL), reiterated in the recent changes to U.S. APL policy announced by the White House, may make it harder for U.S. forces to succeed in their missions.⁴⁶

Rising to the occasion

In sum, budget austerity must not be an excuse for failing to provide those who protect us with the means to protect themselves. Nor should we dumb down our strategy to accommodate what is “affordable.”

As previously noted, some see the current battle against ISIL as a sign that the dark days of the defense drawdown are over. This, however, remains to be seen.

“Budget austerity must not be an excuse for failing to provide those who protect us with the means to protect themselves. Nor should we dumb down our strategy to accommodate what is ‘affordable.’”

To quote Winston Churchill again, “The price of greatness is responsibility.”⁴⁷ One can only hope that the Congress, in its ultimate wisdom, will overturn the sequester once and for all, focus on protecting the warfighter against the most significant threats, and allocate a level of resources commensurate with this nation’s responsibilities as a global leader and force for peace.

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