

# Nuclear Weapons & Nuclear Use

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*Abstract: While nuclear weapons were conceived to end a war, in the aftermath of their operational use at Hiroshima and Nagasaki, they became the central (and controversial) means to prevent a war. Nuclear deterrence formed the foundation of U.S. Cold War doctrine and the basis of an extended security guarantee to our allies. But the Cold War ended one-quarter century ago, and questions about the efficacy of deterrence, the need for nuclear weapons, and the ethics surrounding them have resurfaced as some call for further major reductions in inventory or the complete elimination of the U.S. nuclear arsenal. Discussed from the perspective of a military practitioner, this essay highlights the continuing need for U.S. nuclear weapons in a global security environment that is highly complex and uncertain, and describes the means by which the credibility of the nuclear portion of the strategic deterrent is being preserved even as the role and prominence of these weapons have been reduced.*

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Among the many responsibilities I had as the Commander of United States Strategic Command (USSTRATCOM), none was greater than my responsibility to plan, operate, and, if ordered by the president, employ the nation's long-range nuclear forces in combat. Beginning with General George C. Kenney in 1946, a long line of senior officers has held that responsibility in what is arguably one of the most consequential military posts in the world. While USSTRATCOM's responsibilities have grown since 1992 – when it assumed the combatant command and planning roles of its predecessors, Strategic Air Command (SAC) and the Joint Strategic Target Planning Staff (JSTPS) – every commander since Kenney has shared a common critical mission: to deter attack (primarily nuclear attack) against the United States and its allies and partners, and to use nuclear weapons to defend the nation if deterrence fails.

But the twenty-first-century international security environment is far different from the bipolar Cold War contest that originally defined this mission. The massive conventional threat posed by the Soviet

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Union and Warsaw Pact disappeared almost twenty-five years ago. While it is still possible (and still must be deterred), the likelihood of a large-scale surprise nuclear attack has declined. The traditional regional battlefield is becoming a global battlespace as adversaries acquire technologies and exploit the interconnected nature of our world to quickly transit political, geographic, and physical boundaries. Attacks by violent extremists and the possibility of nuclear terrorism are immediate security concerns; cyber weapons and drones present new challenges; and traditional weapons like ballistic missiles and advanced conventional capabilities are more available, affordable, and lethal. USSTRATCOM and its sister Combatant Commands (CCMDs) may be called on to face diverse contingencies that unfold suddenly and range from small arms in the hands of violent extremists to nuclear weapons in the hands of hostile state leaders.

This new reality has led antinuclear activists as well as some prominent national security figures to pose serious questions about the enduring role of our nuclear arsenal. Despite support from the White House and Congress to sustain the traditional U.S. nuclear triad – comprising long-range nuclear bombers, submarine-launched ballistic missiles (SLBMs), and intercontinental ballistic missiles (ICBMs) – some continue to challenge the efficacy of nuclear deterrence and the need to recapitalize the aging forces and infrastructure. Others propose large force reductions or call for its complete elimination. Several highly publicized lapses in morale and discipline in the nuclear forces have caused some to question whether the United States is capable of sustaining the safe, secure, and effective nuclear deterrent called for in national policy. Humanitarian issues and security concerns have also resurfaced. While the technologies certainly are not new, the confluence of the new global security en-

vironment, the need to reinvest in nuclear weapons and delivery systems, and declining budgets have caused many of the familiar policy and ethical dilemmas that have surrounded nuclear weapons since their conception to reappear.

As a senior nuclear commander, I welcomed this renewed interest in the world's most destructive weapons. Throughout my career I was exposed to and participated in many of the debates surrounding nuclear weapons, and I agreed that the diversity of opinion they generated both inside and outside the government helped to strengthen our policies, doctrine, and force structure.<sup>1</sup> Along with many others, I was concerned when the intellectual emphasis on nuclear weapons and deterrence declined as the Cold War faded.

But such interest can be counterproductive if the resulting debates paralyze our thinking or actions. I believed, as did former SAC Commander General Russell E. Dougherty, that nuclear debates are useful for our background thinking, but should not be passed along to operational commanders as unresolved dilemmas or conundrums; they need to be resolved by policy-makers who offer practicable guidance.<sup>2</sup> Those responsible for investment decisions in government and Congress need similar resolution. Clarity and commitment are as important now as at any time during the Cold War.

Preventing the spread and use of nuclear weapons remains the top U.S. national security objective and a credible nuclear deterrent remains the foundation of our strategy to achieve it. Deterrence is still based on our ability to convince an adversary that the United States has both the capability (forces, plans, command, and control) and national resolve (policy, declaratory statements, visible demonstrations) to respond effectively to any contingency. Unresolved dilemmas, especially those involving the enduring role of nuclear

weapons or the basic ethical legitimacy for them, can erode the credibility of our deterrent in the minds of our adversaries, cause our allies to question the validity of U.S. security guarantees to them, and ultimately influence the perceptions of our own military members regarding the importance and necessity of their mission. Such issues can make the very thing we are trying to prevent more likely.

While much has changed since the end of the Cold War, nuclear weapons continue to meet a critical need in U.S. security strategy and the strategies of our allies and partners.<sup>3</sup> Although it is far too simplistic to say that nuclear weapons alone have prevented major war, the evidence is compelling that they fundamentally changed the notion of warfare between major nations in August of 1945 and that their deterrent effects have constrained the scope and scale of conflict ever since. Before a crisis, nuclear weapons establish limits and constraints in international behavior. During a crisis, nuclear weapons force an adversary to consider the potential consequences and costs of his actions before he takes them. During a conflict, the possibility of a nuclear response discourages an enemy from attempting to use the threat of nuclear escalation as a means to reverse failed conventional aggression.<sup>4</sup> No other weapons create the same deterrent effect.

We cannot predict with certainty what a future crisis or conflict will look like, but a nuclear attack of any size still presents the gravest security risk to the American people and our allies. Deterring such an attack and extending to our allies and partners the deterrence guarantee was my number-one priority at USSTRATCOM. However, while the underlying concepts were familiar from the Cold War – deny benefits and/or impose costs by holding at risk that which an adversary values the most – we recognized that yesterday’s “one size fits

all” approach to deterrence would likely not be sufficient against today’s diverse adversaries, who have unique objectives, motivations, and capabilities. Deterrence credibility demanded a new approach.

As a result, USSTRATCOM planners began working with the Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), and the intelligence community (IC) to tailor our strategies, plans, and capabilities to individual actors and new circumstances. To do this, we needed a deeper understanding of the values, intentions, and decision-making processes of our adversaries and potential adversaries; a major challenge for an IC already stretched to meet the full-time demands of countering violent extremists. Further, we needed to reach out both to the regional CCMDs and to our allies to ensure we understood and accounted for their unique needs, capabilities, and concerns. Global and regional plans and activities had to become better synchronized.

We also increased our emphasis on the deterrence value of nonnuclear capabilities. For some years, the United States has recognized that nuclear weapons may not be the most effective (or credible) deterrent tool in many crisis or conflict scenarios, or against adversaries like violent extremists. Therefore, beginning in 2002, USSTRATCOM’s responsibilities and capabilities grew significantly to bring the combined power of conventional strike, nonkinetic (cyber) operations, missile defenses, and nuclear weapons to a broader strategic deterrence approach. In particular, while not practical as a large-scale replacement, the combat performance of conventional U.S. forces over the last two decades showed that precision strike capabilities could provide viable options in certain scenarios and against certain targets where nuclear weapons were once seen as the best (in some cases the only) choice for the president.

At the same time, we had to consider a far smaller nuclear force and supporting stockpile in our deterrence planning than our predecessors did during the Cold War. Today's deployed strategic nuclear force is only about one-tenth the size and has a daily posture that is far less aggressive than the force I entered and helped lead earlier in my career.<sup>5</sup> Theater nuclear forces have been similarly reduced and entire classes of intermediate-range nuclear delivery systems have been eliminated. Except for a small number of weapons deployed in support of the NATO alliance in Europe, no U.S.-theater nuclear weapons are deployed outside the continental United States today. Moreover, the nation no longer builds new nuclear warheads or conducts nuclear explosives tests.<sup>6</sup>

Taken together, the diminished global conventional threat, U.S. and Russian force reductions, and the emergence of viable alternatives have allowed the United States to reduce the role of nuclear weapons in countering nonnuclear threats, and to narrow the conditions under which they might be used in defense of vital national interests.<sup>7</sup> Nuclear weapons no longer have singular prominence in U.S. defense planning. But other nuclear-armed nations have these weapons to meet their own security needs. As we used to say when I was a young staff officer: when it comes to deterrence, the other guy gets a vote.

Nuclear weapons continue to serve a central purpose in the security strategies of our most significant potential adversaries. At the very time the United States has stated an ultimate policy goal of a "world without nuclear weapons," other states are emphasizing their weapons or threatening to acquire them.<sup>8</sup> Adversaries have watched the United States project conventional military power with relative impunity for over twenty years and are pursuing "integrated strategic deterrence" strategies to reduce the

likelihood of our intervention in regional affairs.<sup>9</sup> The ability to threaten critical targets in the United States and allied homelands with conventional, cyber, and graduated nuclear attacks is a key component of these strategies. When acting in concert with other counterintervention capabilities designed to negate our key operational advantages (including the ability to attack our space-based intelligence, surveillance, reconnaissance, and communications systems) and deny access to our forces in a geographic region, these adversaries seem to believe that the threat of homeland attack will constrain our freedom of action, intimidate our allies and partners, and enable their own more-assertive foreign policies and aggressive behaviors. Nuclear weapons underwrite their approach.<sup>10</sup>

The threats of such integrated strategic-level attacks are real and consistent with the activities I saw during my time as USSTRATCOM's commander and still see reported today. Russia is modernizing its nuclear forces and has reportedly tested a ground-launched cruise missile outside the limits of the Intermediate-Range Nuclear Forces Treaty. Senior Russian leaders have used their large-theater nuclear force to publicly threaten their regional neighbors and our NATO allies. China is publicly less aggressive with its nuclear weapons, but has made it clear with its ambitious modernization program, survivability improvements, and deployment of SLBM-equipped submarines that it will continue to field a potent nuclear force that can threaten the United States and its regional allies. Both countries have upgraded their significant long-range conventional strike and defensive capabilities and exercise them routinely and aggressively; both are active in cyberspace; both are deploying the means to threaten our national security-related space capabilities; both are improving their counterintervention capabilities; and both can quickly cause massive casualties and dam-

age in the United States and allied homelands with nuclear weapons. These developments present significant operational challenges to U.S. forces and, by extension, our ability to deter conflict in the first place (always the preferred outcome).

Others view nuclear weapons with slightly different purposes in mind. Beyond Russia and China, North Korea routinely attempts to intimidate its regional neighbors and threatens U.S. territory and U.S. forward-based forces in the Pacific with the possibility of nuclear attack. North Korean leaders are working to deploy their weapons on ICBMs in order to threaten the continental United States directly. India and Pakistan feature the threat of nuclear war in their disputes, and the potential for additional proliferation to other countries remains an ongoing concern. Our allies continue to rely on nuclear weapons and the U.S. extended deterrent for their security needs as well.

The prominence and role of U.S. nuclear weapons in our national security strategy have rightfully changed since the end of the Cold War. Arms reductions and other initiatives have helped reduce the threat to the American people and enhance stability with Russia. Nevertheless, despite a period of reduced attention, nuclear weapons are not gone and it appears they will not be eliminated from world affairs any time soon. From a U.S. perspective, nuclear weapons remain the ultimate means to deter attack, assure allies of our security guarantees, and defeat aggression if deterrence fails. Ensuring the continued credibility of our nuclear deterrent in today's world requires us to adjust our deterrence concepts and tools and how we apply them. Deterrence credibility also requires us to periodically reaffirm the moral legitimacy for the use of these weapons if deterrence fails.

**N**uclear weapons have always presented policy-makers with a paradox. On the one

hand, they are the most destructive weapons ever devised by man and their use must be prevented; on the other hand, nuclear weapons are the most effective deterrent to such use. As Michael Walzer has put it: "Nuclear weapons . . . are the first of mankind's technological innovations that are simply not encompassable within the familiar moral world."<sup>11</sup>

While U.S. policy regarding the targeting and employment of nuclear weapons evolved across the decades of the nuclear age, the chain of command from the president on down has been consistent in its conviction that using nuclear weapons to defend vital U.S. interests would be both moral and legal provided such use is compatible with fundamental U.S. principles and values and compliant with the law.<sup>12</sup> As a military commander, I believed such clarity and consistency were absolutely essential in these foundational aspects of U.S. nuclear policy and in the public statements that conveyed it. Lack of these can reduce the credibility of our deterrent at home and abroad.

Adversaries, allies, civilian leaders, Congress, and the public at large all must be confident that U.S. military operations (especially those involving nuclear weapons) conform to high moral and legal standards. The implications of not doing so are clear: either the risk of deterrence failing increases because adversaries perceive a lack of U.S. national resolve to use nuclear weapons in any case; or public and political support for maintaining the nuclear deterrent fades due to the perceived incompatibility of nuclear weapons with America's foundational precepts. Absent a solid moral and legal foundation, some of America's allies and partners could either refuse to participate in certain military campaigns or restrict severely the conditions under which they do so.

Lack of such clarity and consistency can also have a negative impact on the perfor-

mance of our military. Nuclear duty places extraordinary demands on our service members. Beyond constant pressure to adhere to the highest standards of performance and discipline, nuclear duty adds the unique psychological burden of the enormity of the possible consequences of the actions these warriors may be ordered to take, should deterrence fail. Military members need clear national policy and intent regarding the morality and legality of the weapons of war the nation provides to them. Lack of moral and legal clarity at the tip of the spear can, at best, create confusion and, at worst, cause hesitation or inaction at critical moments. As a commander, I knew that those under my command who may be ordered to use nuclear weapons in a conflict had to be confident both in the morality and legality of those actions and in the character, commitment, and support of the chain of command over them. Such commitment and support is not an abstract matter: some of the performance and disciplinary problems within the nuclear forces have been attributed to a perceived lack of support and commitment from the top.

Commanders play a key role in affirming moral and legal legitimacy. Unlike draftees, military members in today's all-volunteer force presumably address and resolve any personal morality concerns regarding warfare and military service prior to joining the ranks. The moral perspectives of these volunteers are shaped by many sources and factors outside the military, and military training and professional education add to that foundation after they join. Those assigned to duties involving the employment of nuclear weapons are given an additional opportunity to ponder the implications of their use during initial orientation and again as their commanders evaluate their security, medical, and psychological readiness and certify them for those duties. Each individual either re-

solves any lingering morality concerns or is obligated to come forward with them before progressing.

The legality of employing nuclear weapons is addressed differently. Military members are bound by the Uniform Code of Military Justice (UCMJ) to follow orders provided they are legal and have come from competent authority.<sup>13</sup> They are equally bound to question (and ultimately refuse) illegal orders or orders that do not come from competent authority.<sup>14</sup> Further, they are trained that they must apply the principles of law while executing those legal orders. Ensuring that the military members who would actually deliver nuclear weapons can verify that nuclear control orders are both legal and have come from competent authority is an important responsibility of commanders at all levels.

Only the president of the United States can authorize the use of U.S. nuclear weapons, and crew members constantly drill on processes and procedures that allow them to personally verify with certainty that nuclear control orders have come from the president. However, establishing their confidence that such orders would be legal must be done in advance. In the confines of a submarine or a missile launch control center, it is almost impossible to personally apply the principles of necessity, distinction, and proportionality to nuclear control orders. In many (perhaps most) cases, nuclear crews will not know the specifics of the target they are being ordered to strike. With some exceptions in the nuclear bomber force, most nuclear crews would be unable to either see the target or interact with someone who can (such as a forward air controller in conventional scenarios). Training and personal assurance from every level of the chain of command are the means we use to create trust and confidence in these crew members that legal issues have been addressed and resolved in advance on their behalf by

policy-makers, commanders, and planners and that the highest legal standards have been enforced, from target selection to an employment command by the president.

I experienced these issues first-hand when I began my Air Force service as a twenty-three-year-old missile launch control officer. In the forty-plus years that have passed since, I have often been asked if I could have launched nuclear-armed missiles at another country knowing the potential consequences of such an act. My response is always the same. While I fervently hoped it would never happen (and believed it would not so long as we remained ready to perform our mission), I could and would have carried out my responsibilities if so ordered by the president. Like thousands before and since, I was mindful of the extraordinary responsibility entrusted to us by the American people and our civilian and military leaders. I had contemplated the consequences of nuclear use and was highly confident that orders to conduct nuclear operations would have been based on sound moral and legal principles, issued by competent authority, and necessary in defense of the nation and our allies. The credibility of our deterrent depended then and still depends on such confidence.

Ultimately, it is in the nuclear commands (primarily USSTRATCOM) that the weapons, delivery systems, plans, and people come together to form the war-fighting instrument that figures into the deterrence equation.<sup>15</sup> For deterrence to be credible, forces must be capable and ready; plans must provide the president with a flexible range of nonnuclear and nuclear options that are tailored to a variety of potential adversaries and scenarios; processes must be in place to quickly adapt to unforeseen circumstances; and moral and legal standards must be understood and enforced.

With the verbal agreement of OSD and the chairman of the Joint Chiefs of Staff

(CJCS), USSTRATCOM in 2012 began preliminary work on the most comprehensive revision of nuclear contingency plans since the command's inception in 1992. While the plans had been maintained and essential targeting details updated over the succeeding two decades, nuclear planning had remained mostly static as the military first adjusted to the post-Cold War/Desert Storm period and then focused almost exclusively on extended conventional wartime operations in the Middle East following 9/11.

By no means had Strategic Command remained static over that period. My predecessors had been fully engaged incorporating USSTRATCOM's new missions, changing its organizational structure, responding to contingencies, and implementing a number of conceptual changes to our deterrence concepts and plans. However, the nuclear plans in effect in 2011 were still largely based on guiding principles formed in the late 1980s and early 1990s. Despite significant changes in the global security situation, the Cold War still echoed in our nuclear contingency plans. I believe my predecessors would agree with this assessment.

The opportunity to revise our nuclear contingency plans accelerated when President Obama issued new nuclear weapon employment guidance in 2013. While the specifics are highly classified, the document provided direction to us on subjects from contingency planning and force posture to force levels and stockpile considerations. As reported publicly, the new guidance emphasized the need to maintain a credible nuclear deterrent with "significant counterforce capabilities."<sup>16</sup> It also contained explicit direction to ensure that nuclear contingency plans are "consistent with the fundamental principles of the Laws of Armed Conflict [LOAC]."<sup>17</sup>

Implementing the new presidential guidance provided us with the opportuni-

ty to adopt more comprehensive and tailored deterrence concepts, expand non-nuclear strike alternatives, and add significant flexibility into our contingency plans. Of equal importance, our planners used this opportunity to work more closely with the regional CCMDs to ensure global plans were synchronized with regional objectives and plans. Our intent in this approach was to provide the president with a complementary set of activities and options (strategic and regional, nonnuclear through nuclear) that would function together to enhance deterrence as a seamless U.S. approach to crisis or conflict. This was not done to make the use of nuclear weapons more feasible or likely; rather, these steps were taken to make such use even less likely by strengthening the credibility of the full range of nonnuclear and nuclear approaches against today's wider threats.

One of the most important changes in the new planning effort was a shift to objective-based planning. As a matter of course, U.S. military commanders expect and respond to objectives, guidance, and orders from the civilian chain of command (especially where nuclear weapons are concerned). But from my perspective as a planner through combatant commander, despite being motivated by a valid desire to place civilian leadership more firmly in the nuclear-planning and -targeting process, the addition over time of hundreds of pages of highly detailed planning guidance from the secretary of defense (SECDEF) and CJCS eventually proved problematic.

Every president since Harry Truman has issued (or endorsed) guidance dealing with nuclear weapons and their use. Beginning in 1974, the earlier presidential documents that described basic Cold War national security policy gave way to presidential guidance documents that specifically addressed nuclear weapons employment; an approach that continues today. Since 1974, SECDEF has also issued an

annual nuclear weapons employment policy (NUWEP) or equivalent document. Together, these documents form the civilian-approved guidance for nuclear contingency planning. In addition to this guidance from the president and SECDEF, the CJCS provides a further layer with additional planning details.

While much of the nuclear planning guidance remained consistent over the years, the trend from 1974 to the end of the Cold War was to increase both the volume of SECDEF and CJCS guidance and the details contained in them. Such items as objectives, target categories, general characteristics and constraints of employment plans, specific attack options, and damage requirements were all prescribed.<sup>18</sup> My first task as a nuclear staff officer in the early 1990s was to cut one hundred pages from the CJCS guidance document (a controversial chore).

For sure, civilian policy-makers sought the nuclear commanders' military advice as these and other nuclear policy and guidance documents were developed; but unlike conventional operations in which a commander takes national guidance and applies the "art of war" to craft a plan and present it to the civilian chain for review and approval, the essence of the nuclear employment plan was contained in external guidance issued to him. Essentially, the guidance *was* the plan and JSTPS/USSTRATCOM became a targeting factory in which contingency planning was, for all practical purposes, target planning. In my view, this issue did not cause but rather unintentionally contributed to a number of problems, including spiraling weapon requirements during the Cold War and a continuation of "Cold War thinking" beyond it (especially as attention was diverted to conventional combat operations).

In 2012, we began to apply a more traditional approach to nuclear contingency planning; essentially to do what was envi-



sioned when USSTRATCOM was formed and the nuclear Single Integrated Operational Plan (SIOP) became a “numbered” operational plan. In today’s approach (which parallels the same interactive planning process military and civilian leaders have become accustomed to during conventional operations) the president states the broad objectives he wants the military to achieve if deterrence fails; SECDEF and CJCS add necessary amplifying and clarifying guidance; and USSTRATCOM translates words into actions. The deliberate process we subsequently follow to preplan nuclear weapons in various scenarios involves layers of mission analysis, intelligence assessment, course of action and option development, and modeling, resulting in a range of options that are intended to meet the most likely scenarios and that can be selected by the president and ordered for use if needed. Crisis planning follows a similar (although much faster) process; but the output is an option (or options) specifically matched to the demands of an emerging situation. Importantly, this approach resulted in *more* comprehensive civilian review and oversight of the contingency plans than I had seen in many years.

These planning processes required a great deal of my personal involvement and drove my direct participation in all phases of the effort from guidance development to target selection. In particular, the traditional planning process highlighted my responsibility to implement and enforce in these activities the president’s direction to ensure our plans comply with the body of international law generally described as LOAC.<sup>19</sup> Ultimately, this comes down to the selection of targets and the construction of options.

Despite what is still commonly heard in public discourse, the United States long ago rejected the intentional targeting of cities and civilian populations with nuclear weapons. Volumes have been written about the

evolution of U.S. nuclear employment policy and targeting away from World War II–like strategic bombardment concepts and toward counterforce and military-related targeting as nuclear parity, technological advances, better intelligence, and arms control and reductions changed the dynamics of the Cold War contest. The desire to provide the president with more flexibility and improve the likelihood of controlling escalation if deterrence failed also drove additional changes like limited options and optional withholds (such as the ability for the president to selectively avoid certain targets within an option).<sup>20</sup>

It is clear that U.S. policy-makers were mindful of ethical concerns as they sought to strike a careful balance among the high (perhaps unavoidable) potential for collateral damage from nuclear weapons, the principle of military necessity, and the critical importance of nuclear deterrence to our national security and that of our allies.<sup>21</sup> The desire to strike that balance certainly influenced the evolution of U.S. nuclear policy. Whether implemented as a means to control escalation or as a means to limit civilian casualties and collateral damage, inclusion of planning methods like limited options and withholds helped to address *jus in bello* concerns even as U.S. policy moved planners toward less reliance on nuclear weapons and more restrictive guidelines for using them in extreme circumstances.

The president establishes the fundamental basis of nuclear option development and target selection: namely, the objectives he directs the military to achieve with nuclear weapons if deterrence fails. Today’s guidance to “apply the principles of distinction and proportionality and seek to minimize collateral damage to civilian populations and civilian objects”<sup>22</sup> while achieving those objectives is explicit and its implementation is rigorous at every step in the planning process:

*Option Development.* Options are developed to achieve presidential objectives while offering flexibility. It is during this phase that the discussion of military necessity and proportionality begins as option size, scope, and weapon alternatives are considered. Conventional weapons begin to get considered here.

*Target Selection.* Perhaps nowhere do the LOAC principles get more discussion than in the target development and selection process. USSTRATCOM planners follow basic joint targeting principles established by CJCS that prescribe the practical application of the LOAC principles of necessity and distinction to military targeting activities.

*Weapon Application.* Once targets are selected, planners carefully match weapons to those targets with collateral effect and civilian casualty concerns in mind (which is required by the LOAC principle of proportionality). In addition to applying tactics and techniques to minimize collateral effects, planners examine opportunities to create the intended effect with conventional weapons.

*Other Effects.* Planners also consider other nuclear weapon effects beyond blasts (such as fire; electromagnetic pulse; radiation) in their modeling and analysis. Much progress has been made in understanding these effects, their implications for collateral damage, the potential impact on casualties, and how that understanding can be used to enhance our compliance with LOAC principles.

*Legal Advice and Review.* It should be no surprise today that the Staff Judge Advocate is heavily involved in nuclear planning and operations.<sup>23</sup> While there is no question that military lawyers are far more prominent advisors in command matters than ever before, in my experience, such deep involvement in nuclear planning and operational matters is a fairly recent phenomenon. I cannot say precisely when their involvement in nuclear operations

increased (some military lawyers attribute it to the worldwide attention on legal aspects of potential nuclear weapon use in response to the request from the United Nations General Assembly to the International Court of Justice for an advisory opinion on the threat or use of nuclear weapons in the mid-1990s),<sup>24</sup> but I do know that during my time as commander, I never held a formal nuclear planning discussion without a lawyer present to advise on LOAC matters. As with conventional targeting, lawyers were an official part of the formal and informal planning, targeting, and operational processes and reviews to “ensure their consistency with the law of war and Department of Defense policy on the law of war.”<sup>25</sup> Regardless of the reasons, I welcomed their participation and relied on their expertise and advice as important members of the planning and operations teams.

The contingency plans prepared by the USSTRATCOM commander and staff go through an extensive, hands-on review and approval process that requires frequent high-level interaction and iterative engagement between military and civilian leaders. Nuclear contingency plans are successively reviewed and approved by the military and civilian chain of command, and ultimately presented to the president by SECDEF. At every step, the plans are reviewed to ensure they achieve national objectives, comply with national policy, and meet the standards of the law. Assessing the expected/potential direct and indirect casualties from nuclear options is an essential part of this civilian review of the revised plans and of any options that might be provided to the president. The president can be confident that any nuclear options he or she may consider in extreme circumstances when national interests are at stake have been prepared mindful of LOAC principles.

Nuclear weapons continue to play a reduced but vital role in the security of the

United States and that of its allies and partners some seventy years after they were used to end World War II. Although the challenges of the twenty-first century are far different than those of the Cold War, nuclear weapons will continue to cause leaders to pause and consider the risks and consequences of escalation before they act. While nuclear weapons are but one element of a U.S. deterrent strategy that today is being tailored to specific adversaries and

includes conventional, missile defense, and nonkinetic alternatives, they remain unique in every aspect. Ensuring adversaries, allies, the U.S. public, and the men and women who may be called upon to use them know that nuclear plans are carefully shaped to today's global security situation and that they meet the highest moral and legal standards contributes to the credibility of the deterrent – and helps ensure they will never be used in combat again.

#### ENDNOTES

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- <sup>11</sup> Michael Walzer, *Just and Unjust Wars*, 4th ed. (New York: Basic Books, 2006), 282.
- <sup>12</sup> See, for example, Charles J. Dunlap, "Taming Shiva," *The Air Force Law Review* 42 (1997): 159 – 160; and United States Department of Defense, Office of General Counsel, *Department of Defense Law of War Manual* (Washington, D.C.: U.S. Department of Defense, June 2015), 393.
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- <sup>14</sup> Ibid., 1058.
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- <sup>17</sup> Ibid.
- <sup>18</sup> David Alan Rosenberg, “Nuclear War Planning,” in *The Laws of War: Constraints on Warfare in the Western World*, ed. Michael Howard, George J. Andreopoulos, and Mark R. Shulman (New Haven, Conn.: Yale University Press, 1995), 185 – 186.
- <sup>19</sup> United States Department of Defense, Office of General Counsel, *Department of Defense Law of War Manual*, 1059 – 1060.
- <sup>20</sup> David A. Kunsman and Douglas B. Lawson, *A Primer on U.S. Strategic Nuclear Policy*, United States Department of Energy and Sandia National Laboratories (Washington, D.C.: U.S. Department of Commerce, National Technical Information Service, January 2001), 15 – 17; and Paul Bernstein, Jeffrey Larsen, and Lewis Dunn, *The Evolution of United States Nuclear Strategy and War Planning 1945 – 2000: A Primer* (Cambridge, Mass.: Science Applications International Corporation, December 2008), 5.
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- <sup>22</sup> United States Department of Defense, *Report on Nuclear Employment Strategy*, 4 – 5.
- <sup>23</sup> United States Department of Defense, Office of General Counsel, *Department of Defense Law of War Manual*, 1061 – 1062.
- <sup>24</sup> Theodore T. Richard, “Nuclear Weapons Targeting: The Evolution of Law and U.S. Policy” (unpublished manuscript), 62 – 63.
- <sup>25</sup> United States Department of Defense, Office of General Counsel, *Department of Defense Law of War Manual*, 1061 – 1062.