



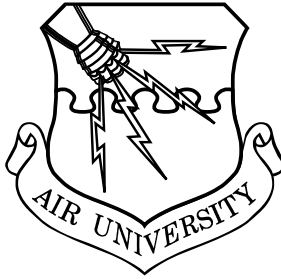
Chasing Success

**AIR FORCE EFFORTS
TO REDUCE CIVILIAN HARM**

SARAH B. SEWALL



AIR UNIVERSITY
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Chasing Success
Air Force Efforts to Reduce Civilian Harm

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Foreword

Discussions concerning civilian casualties in warfare continue to elicit very emotional responses among the public at large. Dr. Sarah Sewall, in *Chasing Success: Air Force Efforts to Reduce Civilian Harm*, depicts the US Air Force's efforts over the past twenty-plus years being at the vanguard of minimizing civilian harm in conflict while still effectively pursuing military objectives. When the Air Force Research Institute turned to Dr. Sewall to write this work, we understood that warfare is a messy business. At its core, when other elements of national power have failed to persuade and deter, warfare is about forcing one's will upon an adversary, including applying controlled violence. History is rife with examples of civilizations falling after their armies in the field are defeated and their cities are sacked, looted, and burned. The nature of modern warfare extracted an increasingly high toll on civilians as weapons became more deadly. As early as our own Civil War, the American military has become increasingly aware of civilian casualties—as has the international community, following the close of World War II. Nazi Germany's attacks on London utilizing terror weapons, such as the V-1 and V-2, and the Allied bombings of Dresden and Hiroshima demonstrated the totality of warfare in the modern era. The Geneva Conventions of 1949 attempted to define the basic rights of not just wartime prisoners but also to establish protection for civilians in and around a war zone.

Warfare has become increasingly more complex. Some organizations, like the Islamic State in Iraq and the Levant (ISIL), are following the old historical examples in which they convert, enslave, or murder the civilian residents in conquered territories. In other conflicts, with the rise of insurgencies across the globe, standing militaries no longer meet on a battlefield where identifiable fronts and protected zones exist. In Iraq and Afghanistan, adversaries hiding within civilian populations have become the norm rather than the exception.

Precision-guided munitions (PGM) have enabled more accurate delivery of kinetic effects, improving airpower's effectiveness while reducing risk to friendly forces. PGMs have also enabled airpower to reduce collateral damage and civilian casualties through more precise targeting. Yet PGMs, and the humans who deliver them, are not infallible, nor is the targeting information obtained during wartime perfect. Thus, unintended effects can be reduced but never completely eliminated. An open dialogue on such controversial issues as civilian

casualties depicts the true strength of our Air Force and demonstrates the best attributes of a military operating inside a democratic society. It is in this spirit of open dialogue that we present Dr. Sewall's work on a very timely and emotionally charged subject.

A handwritten signature in black ink, appearing to read 'Allen G. Peck', with a stylized flourish at the end.

ALLEN G. PECK

Director

Air Force Research Institute

Introduction

The United States Air Force (USAF) has led the way within the US armed forces and globally in its efforts to minimize harm to civilians during combat operations. Given the frequency with which newspapers document errant air strikes that have killed many noncombatants, this claim may seem counterintuitive. Yet when evaluated in historical and comparative perspective, modern US-led air campaigns cause surprisingly few civilian casualties.

This development—the increased ability to minimize civilian harm—was not inevitable. Yes, evolving technology made it physically possible to become more discriminate and precise in the use of force. However, the refinement and use of that technology reflected conscious choices. These choices were not undertaken for moral reasons, because Airmen already believed that they were acting in accordance with the law and with ethical requirements. Rather, the world's changing normative views about the use of force, in tandem with the transparency and scrutiny accompanying every bomb, shaped the evolution of US airpower. These developments led to increasing political constraints upon how the military applied airpower and even raised questions about airpower's continued salience in modern limited war.

Fundamentally, the USAF's pathbreaking focus on preventing civilian harm reflected its institutional interest in sustaining airpower as a tool of choice in war and ensuring maximum freedom of operations during air campaigns. This exemplary transformation of processes, tools, and thinking offers important lessons for the US military and for the future of armed conflict.

Beginning in the 1990s, the USAF began making—in discrete but mutually reinforcing ways—conscious efforts to help the service more effectively minimize civilian casualties during air operations. In this book, I explain how discrete operational experiences—reflecting broader trends—prompted innovation. These innovations began initially during ongoing air operations but later catalyzed a deeper institutional change that shaped the future of airpower. Ironically, perhaps, these improvements in turn heightened expectations that civilians could be spared the horror of war. Thus, the USAF began chasing its own success. In this book, I seek to explain and trace this process.

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Fighting with integrity, and in particular minimizing civilian harm, offers benefits for a professional military force and the nation it represents. Respect for civilians reflects the United State's moral identity and helps maintain its global reputation and legitimacy. Fighting well reinforces the military's professionalism and ethical standards. Minimizing civilian harm also provides an essential psychological bulwark for individuals legally sanctioned to kill other human beings in armed conflict. A moral approach to warfare can (but is not guaranteed to) also yield tactical, operational, and strategic advantages. Yet an institutional commitment to avoiding noncombatant deaths also entails diverse costs, which suggests that, even when undertaken, it may remain fragile.

Skepticism about the need to expand protection of civilians reflects several misconceptions. One common misconception is that civilian protection inherently increases risk to American troops. My field research in Afghanistan demonstrated that this is not necessarily true; many win-win solutions exist, and more remain to be developed. The nature of airpower and the likelihood of US air superiority may allow airpower more such opportunities than can be found for land forces. Even where risks do shift, minor additional risk to combatants may greatly enhance the safety of those who play no role in armed conflict. Combatants' willingness to help assure civilian safety is the essence of "fighting well," according to political philosopher Michael Walzer.¹ Nevertheless, even before engaging this claim, military forces can exploit avenues for protecting civilians without changing their own risk equations.

A second source of resistance to civilian protection revolves around the expectation itself. Some express a resigned fatalism toward civilian death in armed conflict. More commonly, though, the notion that they are not already doing everything possible to minimize civilian casualties offends military actors. They believe that they are doing everything they can (which is what US officials often assert), and they can recall specific efforts to avoid killing noncombatants. They assume this illustrates sufficiency of effort—exhausting the possibilities of protection.

Others argue that standard is purely a legal matter and that the strong US commitment to upholding international law axiomatically ensures adequate civilian protection. Yet the law of armed conflict is quite forgiving. While prohibiting belligerent parties from purposefully targeting civilians, international law accepts indirect or accidental

civilian harm in war under certain conditions. US warfighters are required to uphold the law, and they take solace in the fact that they do not *intend* to kill noncombatants even when combatants die. Largely satisfied with the standard of legal compliance, the military long eschewed a deeper examination of morally desirable or operationally possible capabilities and behaviors that might exceed the floor established by the law of armed conflict.

However, expectations of what it means to fight well, and therefore of airpower, have changed in recent decades. Today, even when armed forces make assiduous efforts to avoid inflicting harm, they are still criticized when civilian deaths result. This is especially true of US military forces, which have long been regarded as omnipotent. More stringent normative expectations—largely those of foreign nations and publics—have exerted a growing influence on the US conduct of war. This was often evidenced by the operational restrictions political and military leaders felt compelled to impose in the aftermath of civilian casualty incidents during military operations in the 1990s.

Developing tools and techniques to proactively avoid civilian harm offered the USAF a route to preserve its relevance and operational flexibility. The right thing and the smart thing became synonymous. Accordingly, the USAF developed new tactics, technologies, and concepts that saved countless noncombatant lives. Instead of asserting the legal sufficiency of its actions or arguing that it showed more care than did its adversaries, the USAF led the US military toward a deeper awareness and institutional commitment to avoid killing civilians.

Over the past two decades, I have worked closely with many actors who figure centrally in this story of US military adaptation. In the early 1990s, I served as the inaugural deputy assistant secretary for peacekeeping in the Department of Defense, helping the military adapt to post-Cold War requirements. More recently, I helped revise US counterinsurgency (COIN) doctrine and led a team to create US doctrine for responding to mass atrocities. I initiated and directed the seminal 2010 Joint Civilian Casualty Study to evaluate the International Security Assistance Force in Afghanistan, providing operational and long-term institutional recommendations for the US armed forces to reduce civilian harm.²

I also directed the Carr Center for Human Rights Policy and serve on the board of a humanitarian relief organization. At Harvard, I think, teach, and write about the use of force, where my military students

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teach me in return. In addition, for years I led an intimate dialogue between human rights activists and active duty and retired military personnel about minimizing civilian harm during military operations.³ Based on these experiences, I have sought to accurately reflect and explain the perspectives of outsiders who voice humanitarian expectations about the use of force and those in uniform who strive to meet those expectations.

This book emerged from conversations with Gen John A. Shaud, USAF, retired, then the director of the Air Force Research Institute (AFRI), who encouraged me to help the USAF think critically about the topic of civilian harm. I am grateful for his vision and openness in welcoming a different voice into the airpower discussion. I am especially indebted to Dr. Dan Mortensen, the recently retired dean of AFRI. This writing hinged on his insightful questions, inexhaustible patience, and personal inspiration. Finally, I thank Dr. Chris Cain for his thorough and exacting comments and corrections.

This book examines how international expectations intersected with the USAF's fight for autonomy and utility, explains how the USAF began to change, and asks how airpower—and the US military as a whole—might further deepen its efforts. I hope the book expands perspectives on assessing and directing the use of airpower and inspires further work to maximize both mission accomplishment and civilian protection. The recent evolution of US airpower offers inspiring, if incomplete, evidence that the conduct of war can become more humane while remaining effective. Technology, adversaries, and the goals of armed conflict will continue to evolve, but the central challenge of humanizing war will endure. This volume is just a first, tentative draft of a story that today's USAF has yet to finish.

I have organized the book into two parts. Part one outlines the challenge that contemporary expectations about the American use of force pose for airpower. The first chapter describes the emerging norm of minimizing civilian casualties and the increased scrutiny of US airpower. The second chapter provides historical context for evaluating US military operations, reviewing the relationship between airpower and civilian casualties from airpower's beginnings through the Cold War. This history alternates between tracing operational experience and showing how Americans reconciled airpower's claims of precision with its record of inflicting civilian casualties. The third chapter looks in depth at the law of armed conflict, highlighting key controversies and showing why the law's requirements (particularly

as understood by the US military) fall short of the contemporary expectations of minimizing civilian harm.

The second part of this book describes the USAF's adaptation to modern expectations of civilian protection, tracing operational experiences during the 1990s and the consequent operational and institutional innovation. The fourth chapter details how civilian casualty incidents during Operation Desert Storm and Operation Allied Force led to operational restrictions on airpower and convinced the USAF to proactively shape its ability to minimize civilian harm. The fifth chapter chronicles those efforts and shows how they helped prepare airpower for success in COIN operations in Iraq and Afghanistan. The sixth reviews additional challenges and the limitations of change to date. The seventh chapter concludes with an outline of what "chasing success" ultimately demands of the entire US military.

Notes

1. This is a central argument in Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (New York: Basic Books, 1977).

2. Sarah Sewall and Larry Lewis, *Joint Civilian Casualty Study (JCCS), Sponsor Review Version* (Cambridge, MA: Harvard University and Joint Center for Operational Analysis, 2 August 2010). The core research team included Dr. Lawrence Lewis; Lt Col Randy White, US Army; and Maj Gen Geoffrey Lambert, US Army, retired. Cliff Tompkins and Lt Col Andy Lipina, USAF, from the Headquarters USAF Lessons Learned Directorate were key contributors.

3. I directed the National Security and Human Rights (NSHR) program at the Harvard Kennedy School of Government from 2001 to 2008. I convened more than a dozen two-day conferences involving over 100 members of the military, legal, and human rights communities to discuss military operations and humanitarian issues. Contributions from these discussions are referred to collectively as the NSHR Proceedings.

PART 1

Airpower

The purpose of bombing is damage.

—John E. Burchard
Rockets, Guns and Targets

Chapter 1

Rising Expectations of Airpower

In June 2009 the United States Air Force's (USAF) Office for Analyses, Assessments and Lessons Learned, known as "A9," released a report entitled *Kinetic Airpower and Civilian Casualties*.¹ It was the service's response to a growing chorus of criticism blaming airpower for causing many civilian casualties (CIVCAS, in military parlance) in Afghanistan. The analysts at A9 decided it was time to get some facts on the table.

The A9 staff had studied US airpower in previous conflicts with an eye to improving capabilities for the future fight. These true believers had tolerated a lot of public grousing about airpower's successes over the past decade. After the 1999 Operation Allied Force in Kosovo, critics disputed that aerial bombing had been responsible for the victory. The airpower-driven 2001 rout of the Taliban from Kabul renewed resentment about airpower's starring role. The Army and Marine Corps claimed vindication after the 2003 combined arms "march to Baghdad," and they stressed the need for staying power in the form of boots on the ground. Ensuing years of counterinsurgency (COIN) operations required the USAF (and the Navy) to suppress doctrinal passions for strategic effects and labor dutifully in support of ground forces.

However, by 2009 the complaints about airpower picked up again, now focused on civilian harm. The air staff was accustomed to human rights activists, the media, and international watchdogs like the United Nations (UN) High Commissioner for Human Rights criticizing bombing for causing civilian casualties. In fact, the nongovernmental organization Human Rights Watch (HRW) had just issued a report entitled *Off Target* that mixed praise with pointed charges against USAF targeting practices. Now the *internal* criticism about airpower causing civilian deaths was heating up, A9 wrote, with "numerous articles and letters to key national and international leadership . . . published/sent in the past few weeks/days."²

The tipping point appeared to be a comment from Brig Gen Michael Tucker, US Army, then serving as deputy commander of International Security Assistance Force (ISAF). "If we got more boots on the ground," he said "we would not have to rely as much on" air-

strikes.³ Perhaps it was oversensitivity, but airpower proponents saw General Tucker's comment as blaming airpower for civilian harm in Afghanistan and as suggesting that more troops would reduce aerial bombing and therefore reduce civilian harm.⁴ The USAF expected humanitarian criticism but not such critique from *within* the military—and certainly not an argument for more ground forces.

The ironies were rich. The Army and Marine Corps had blazed their way to Baghdad, keeping safe by shooting anything that moved while asking airpower to pave their way. A ground commander had requested almost every USAF bomb dropped in Afghanistan. The subordination of Airmen to Soldiers or Marines was hard enough for a service that highly valued its independence and strategic contributions. However, if airpower was harming noncombatants in the tactical COIN fight, it was the ground commander's call. Since the ground commander often called upon airpower to protect his Soldiers or Marines, it hardly seemed appropriate to blame the folks who came to their rescue. More important to the analysts at A9, the implications just did not ring true.

A9 set out to do “root cause analysis and data fireproofing,” but they had little data with which to work.⁵ The military had not systematically collected information on civilian deaths. The A9 analysts had access to the ISAF airstrike mission reports (although they lacked records for special operations forces and for the helicopter gunships operated by ground forces). On civilian casualties, the best data they could find belonged to HRW.⁶ A9 demonstrated its openness and commitment to improvement by requesting the group's information. Using these two sources of data for civilian casualty “events” (incidents in which civilian casualties occurred) between January 2006 and July 2008, A9 was able to match 25 of the events that HRW documented with 64 US airstrikes.⁷

While the analysis was limited, it painted a clear picture of correlation: as ground operations increased, so did the use of airpower—along with numbers of civilian casualties. A9 examined historical data. In Iraq, too, airpower use increased along with ground operations.⁸ In the Vietnam War, the rate of tactical air sorties tracked declines in troop levels.⁹

The findings were also consistent with the argument that ground forces had been making since Kosovo: the components of the US military are most powerful when combined. Airpower helps ground forces achieve their objectives while protecting Soldiers and Marines.

Therefore, it was hardly surprising that when ground forces in Afghanistan were more active, airpower followed suit—as did civilian harm. The analysis suggested that civilian casualty levels should be seen as a function of ground force activity *and* air strikes.

A9 also sought to assess the scale and meaning of the civilian casualty incidents in Afghanistan. This was a more challenging proposition, given the scarcity and unevenness of data. HRW does not pretend to capture all incidents of civilian harm; it analyzes the cases it is able to fully document. Other collections of data were equally or more flawed.¹⁰ Looking for causal patterns, the A9 team tried sorting strikes by critical differences such as the type of ground control used, aircraft, weapons, and target. A9 was able to discern that attacks on structures were associated with a sizably higher percentage of civilian casualties, presumably because civilians sometimes shelter in structures and cannot be seen beneath roofs.

The principal purpose of the A9 analysis was a “worst-case [civilian casualties] airstrike rate of approximately 0.9%.”¹¹ I consider it unlikely that only the 25 cross-referenced airstrikes had caused civilian harm over the entire two-and-a-half-year period in Afghanistan. Based on empirical research later in the Afghan conflict, I believe the available data on civilian casualty incidents was insufficient to allow for an accurate estimate during that period.

Nonetheless, even if the civilian casualty figures were low, one could double or triple the numbers, and they would still comprise an extremely small *percentage of US air strikes*. This standard, the percentage of total strikes, conjured up a different picture than that suggested in newspaper coverage of significant incidents. A big part of the problem, as A9 saw it, was that “Air induced CIVCAS incidents always make the headlines!”¹²

Scrutiny of Airpower

The A9 analysis offered an alternative narrative about civilian casualties, one that focused on the frequency of incidents as part of an overall pattern of military activity in Afghanistan. Nevertheless, other observers had a different perception of how and why civilian casualties mattered. In addition, while US airpower had been a powerful magnet for critics, fundamental changes in the nature of war, communication, and society were shifting the terrain, heightening both

the scrutiny and expectations of airpower. I review these changes below.

Perceptions of Strategic Bombing

Airpower has always received special scrutiny.¹³ In part, this reflects the destructive legacy of its comparative advantage: attacks on strategic targets. In America's deeper consciousness, airpower still carries the burden of civilian devastation during World War II. Like robbing banks because "that's where the money is," strategic bombing is generally conducted in urban areas because they are often components of a nation's center of gravity. Almost by definition, then, strategic bombing connotes civilian deaths.

Dramatic modern images of bombing cities evoke the total devastation of World War II. The filmed "shock and awe" air campaign in Operation Desert Storm, indeed almost any visual depiction of aerial attacks in urban areas, conveys an impression of massive destruction even when the reality may be quite different.¹⁴

Discrete Events

Airpower is often the focus of humanitarian criticism simply because of the relative ease of observing it. Ground forces generally employ multiple simultaneous and overlapping fires, while airstrikes are discrete events, more readily traced, attributed, and analyzed. The mission reports used by A9 analysts are just one example of this transparency. Many aircraft feature onboard video cameras to record their strikes. Pilots provide detailed mission reports on their bombing runs, and the USAF conducts thorough safety investigations whenever a problem arises. The learning is swiftly cycled into mission preparations and throughout the force. This works to airpower's advantage for refining and improving performance. The flip side is that outsiders also have more data regarding air strikes.

Magnified Civilian Impact

Furthermore, when airpower goes wrong, the results can be spectacularly horrific. Because the impact of a 500- or 1,000-pound bomb exceeds that of a single bullet or tank round, the resulting civilian harm can be enormous. Obviously, any weapon can cause mass

casualties depending upon the frequency and context of its use; artillery shelling in populated areas is a common historical source of high collateral damage.¹⁵ However, per firing incident, the very destructive power of aerial bombing creates liabilities in terms of impact upon civilians. In Afghanistan, for example, A9 found that air strikes on structures generally produced the largest numbers of civilian casualties per strike. Incidents in which a single bomb kills a dozen family members are more likely to receive attention than the shooting of a vehicle driver at a checkpoint. The scale is different, the means more sensational, and the attribution may be easier.

Attribution

US responsibility for air-delivered bombs is easier to determine than is the patrimony of a shell or bullet. Re-creating the facts in a firefight is far more complex than finding an enormous bomb crater. Where a US-led coalition is effectively the *only* belligerent flying aircraft, as has been true in recent decades, the responsibility for physical damage is undisputed and national responsibility easily assigned.

The actual reasons why civilians were killed may be complex and remain opaque to outsiders. For example, airpower is often faulted for civilian deaths that result proximately from faulty intelligence or from an adversary's refusal to allow civilians to leave a building.¹⁶ Nevertheless, if the mechanism of harm is clearly an aerial platform, outsiders can more easily determine the source of civilian harm, subjecting airpower to a much higher degree of scrutiny and forcing a greater level of responsibility for the consequences of individual actions.

Perceptions of Risk

Less tangible factors may also shape perceptions. In recent decades, US aircraft have not faced a real competitor in the sky, and Airmen have rarely been shot down or lost their lives during combat operations. Sometimes (as in the wars with Iraq) the threat was real, but the United States was able to neutralize enemy air capability early in the conflict. In other cases, adversaries were so militarily weak (e.g., Yugoslavia or Afghanistan) that their air forces offered no meaningful threat.

Adversary air defenses remained a threat to US aircraft, but Airmen could generally mitigate these threats. This was a very different

reality than that facing US ground forces in the wars in Iraq or in Afghanistan. Perceptions of greater physical risk to ground forces—based on US casualties in recent conflicts—may result in greater tolerance accorded civilian harm inflicted by Soldiers and Marines. Fair or not, the relatively lower casualty rates among aircrews likely increases the opprobrium when airpower causes civilian casualties.

Some analysts have even suggested that demographic trends within industrialized nations, in particular low birth rates, have reinforced sensitivities to the loss of human life overall. The claim originated as an explanation of alleged casualty aversion in the United States and Western Europe.¹⁷ However, in the United States it is unclear that any demographic sensitivity to national deaths extends to foreign civilians. Compared to the political discourse in Western Europe, the US public and government only rarely discuss the issue of civilian casualties. Given the inherent trade-offs between force protection and civilian protection, particularly in close combat, heightened sensitivity to US casualties might in fact dampen popular concern about the protection of foreign civilians.

Expectations of the US Military

Humanitarian criticism of US military operations is partly a result of those operations' success. Success breeds expectations. Although civilian suffering increased dramatically during the world wars, the United States and its allies fought subsequent conflicts with relatively fewer noncombatant deaths.¹⁸ The scale of civilian casualties during World War II dwarfs that of Korea and Vietnam.¹⁹ The death tolls in Korea and Vietnam in turn make even the most expansive estimates of civilian casualties in Desert Storm seem modest.²⁰

In particular, the air wars of past decades have set a new standard. In 1995, the North Atlantic Treaty Organization's (NATO) Operation Deliberate Force caused *tens* of civilian casualties.²¹ The 1999 Kosovo air campaign killed about 500 civilians. Air operations to topple Libya's Mu'ammad Gadhafi in 2011 reportedly killed fewer than one hundred Libyan civilians.²² As advanced militaries showed that they could successfully employ force while causing fewer civilian deaths, observers came to expect such results. Because such outcomes are possible, they can reasonably be considered desirable.

Superiority

The United States' overall strategic superiority after the end of the Cold War shapes assessments of its military performance, including how discriminately and precisely it should employ force. Observers presume that states with far greater power have greater control or choice in their actions. Perceived imbalances among combatants' military power reduce tolerance for the "unintended consequences" imposed by the stronger force. Even as adversaries adopt illegal tactics, their relative weakness appears to insulate them from equivalent expectations about the precise and controlled use of force.

Technology

Specific technologies reinforce impressions of omnipotence. The United States may have done itself a disservice by so triumphantly touting its precision weapons. In 1991 US officials released images of "smart" weapons maneuvering to their targets during Operation Desert Storm. This created an indelible impression that the United States could fully control the effects of war.²³ The lingering fascination and faith in smart bomb technology is particularly relevant for expectations of airpower.²⁴ Today, senior air officials complain that the world expects the United States to use only precision munitions.²⁵ However, more specifically, the expectation is that precise targeting will spare the innocent. Because the United States says it has just that ability, outsiders find it hard to believe that collateral damage is accidental.

Pledges

Pledges to avoid civilian harm also heighten expectations. In 1991 Pres. George H. W. Bush emphasized that the world's quarrel was with Saddam Hussein, not the Iraqi people, and said the United States was "doing everything possible" to minimize casualties during Operation Desert Storm.²⁶ During the 1999 air campaign over Kosovo, Secretary of Defense William Cohen said, "We will do everything in our power to minimize the damage to innocent civilians, but they will occur in the future, they have occurred in the past. We will do our best to see that they're at a minimum."²⁷ Military leaders also promised extraordinary efforts or "all possible measures" to avoid civilian casualties.²⁸ In Afghanistan, too, Secretary of Defense Robert

Gates stated, “The United States and coalition partners do everything we can to avoid civilian casualties.”²⁹

When the dominant global military power, possessing the most advanced military technology, vows to do *everything possible* to avoid harming civilians while using force, high expectations logically result.

Scrutiny of War

It is not just airpower, or the United States, that faces greater scrutiny today. The use of force generally receives far more attention and analysis than was true during the Cold War. There are more actors monitoring conflicts, it is easier to monitor and disseminate information about conflict, and the changing nature of conflict invites a humanitarian critique.

The Human Rights Movement

Human rights ideals have been a driving force in reshaping expectations of war, and they have drawn new actors into the assessment of armed conflict. The UN’s Declaration of Human Rights captured a post–World War II international consensus that the person, not just the state, had independent rights and standing in the world. This idea has been developed and codified in a growing body of international and national law.

Human rights are at the core of the “principle of distinction” in Western moral and legal reasoning about war. In 1977 moral philosopher Michael Walzer recast the need to distinguish between combatants and noncombatants during armed conflict as the need to preserve a civilian’s fundamental right to life.³⁰ Human rights ideals were simultaneously animating revisions (the 1977 Additional Protocols to the Geneva Conventions) of the law governing the conduct of war.

Human rights advocacy has become institutionalized within governments and international institutions and through an abundance of nongovernmental organizations (NGO). Many of these organizations are now engaged in monitoring armed conflict, once largely a preserve of the International Committee of the Red Cross (ICRC).³¹ Founded in 1859 to assist wounded soldiers, the ICRC’s mandate has expanded along with the law of armed conflict to focus increasingly on civilian harm. Today the ICRC has plenty of company. UN bodies, international human rights advocacy organizations, and local NGOs

now focus on the conduct of war—primarily in order to ensure the physical security of civilians caught in armed conflict.

Aligned with these groups are the humanitarian “doers”—actors who provide humanitarian assistance directly to the victims of conflict. This includes such organizations as Oxfam, Doctors without Borders, Save the Children, and other organizations around the world.³² Some groups (such as CARE, ICRC, and UN agencies) assist victims of war in addition to advocating civilian protection. Like-minded actors, most notably a group of predominantly European states and international lawyers, often work closely with human rights organizations to strengthen civilian protection.³³

Broadly speaking, these groups subscribe to a particular perspective that one can summarize as the philosophy of international humanitarian law (IHL).³⁴ The humanitarian perspective is absolutist at its core, committed to protecting the rights of each individual. Unlike the military, which begins from the premise that it must win the nation’s wars, humanitarians see the civilian as the point of departure for understanding war. Regardless of their positions on the legitimacy of force generally or the morality of a particular conflict, human rights groups see the civilian as their voiceless client.³⁵ This community of organizations works to encourage militaries and governments to protect civilians and seeks to strengthen laws, expectations, and practices that promote this objective.

As evaluators and interpreters of military activity from the humanitarian angle, these actors articulate and help drive rising expectations surrounding civilian protection. They contribute to the development of law and the development of a broader public understanding of military operations. In the public debate, their perspective challenges, balances, or augments official government accounts of how wars are fought. Major American human rights and humanitarian organizations number only in the dozens, yet their impact is magnified because others—the press, public, civil society, other governments, etc.—rely upon them to understand or assess the use of force.

Goals of War

Changes in the reasons why the United States and its allies use armed force have also shaped evaluations of how force is applied. It has been almost 70 years since the world has seen total war. Subsequent US conflicts were limited wars, wars of choice, and humanitarian

wars (or all three). These limited armed conflicts cast humanitarian consequences in sharper relief and raise questions about the limits of necessity itself.

If a war has limited objectives, logic suggests that its military means will likewise be constrained. This linkage can be controversial, as was the case during the Vietnam War.³⁶ Some voices called the war's methods indiscriminate, while others argued that constraints on force made military victory impossible. While escalation of the air war was a reality, it was difficult to make the case for "taking off the gloves" while seeking to disengage.

A separate factor shaping judgments of war is the emergence of humanitarian intervention. It is harder to justify killing innocents during a war fought for humanitarian purposes. NATO experienced this reality during Operation Unified Protector in Libya. The emergence of the global concept of "responsibility to protect" has attracted greater humanitarian interest in the use of force, albeit interest that is deeply sensitive to the contradictions of using force in the name of protection. The end of total war and its stark necessities now casts civilian harm in a harsher light.

Transparency of War

Modern telecommunications and other technologies magnify public sensitivity to the human consequences of war.³⁷ War is more immediately and viscerally observed than in the past. Even as international news reporting shrinks and the United States insists on embedding journalists within its armed forces, technology has "democratized" reporting in the hands of citizens and adversaries. News is available nonstop and disseminated throughout the world nearly instantaneously. CNN broadcasted live from Baghdad in 1991; citizens in Belgrade blogged throughout the Kosovo bombing campaign; and Al Jazeera showed film of insurgents' suicide bombings in Iraq. There is greater scope for both information and misinformation about war. As a result, the United States must devote significant effort to managing information regarding its forces' conduct and that of its adversaries.

All these factors help explain why observers criticize military forces, especially US forces, and particularly the USAF, for harming noncombatants.³⁸ However, what exactly are these expectations?

The New Norm

The contemporary norm is a variation on an ancient theme, one that raises the bar from doing “enough” to “doing everything possible” to minimize civilian harm during armed conflict.³⁹

For centuries, civilian deaths were accepted as an inevitable, if unfortunate, corollary of war. Moral codes, religious traditions, military customs, and eventually international laws noted the distinction between combatants and noncombatants and expected military forces to avoid harm to civilians. Yet civilian deaths were accepted so long as combatants intended to avoid them and the action was a “military necessity.” In contrast to this view, the violence of terrorism—intentional attacks on noncombatants—was deeply repugnant and illegal.

The US armed forces long considered civilian harm a legal issue and believed that compliance with the law of armed conflict (LOAC) meant that forces were doing *enough* to minimize noncombatant deaths.⁴⁰ In chapter three, I discuss the law as a standard for judging the conduct of war and explore the relationship of legal and normative discourse about war.

Here, I consider the character of the modern norm and why—*unlike* the LOAC—the norm is so challenging for the US armed forces. First, and most significantly, the norm judges results—not intent. Second, it applies an elastic—not a universal—standard that demands more of more capable parties. Third, the primacy of effects and elasticity of the standard leaves zero civilian casualties as the only unquestioned success. These three distinctions, detailed below, make the modern norm a vexing standard for any military, one that US service members experience as a “zero civilian casualties” norm.

Effects

In recent decades, the standards applied by outsiders to US military actions demonstrate that good intentions are no longer enough. A compelling example is the 1991 US bombing of the Amiriyah bunker in Baghdad, Iraq. The US military unintentionally killed hundreds of civilians taking shelter in a military facility.⁴¹ The United States targeted a military objective in good faith, and there was little debate about the legality of the strike. Yet the effects of the strike on civilians had enormous negative impact on the United States.

Modern observers of war focus on the *effects* of military action upon civilians rather than the intent or context of the action that is so vital for applying legal standards. Opprobrium and associated political costs attach to the *fact* of civilian harm, regardless of its justification.⁴² Governments can argue that they did not intend to cause the harm, that they could not reasonably have foreseen the harm, or even that an adversary made it impossible to avoid the harm.⁴³ Yet these explanations carry little weight among humanitarian critics or international publics in the twenty-first century.

This is why civilian casualty figures remain so politically sensitive. In the 1980s, American NGOs began tallying noncombatant “body counts” during US military interventions. Even as the United States often challenged these numbers, it long resisted demands that the government account for foreign civilian deaths. By the mid-2000s, the US military in Iraq began compiling its own figures and used civilian casualty trends to assess the international forces’ COIN success. The US military continues to classify its own civilian casualty count, while watchdog organizations and global media have become increasingly adept at documenting civilian deaths given the transparency of war and communications technology.⁴⁴

Even if the military and its critics could agree on the numbers of civilian casualties in a given strike or conflict, they would unlikely agree upon the *meaning* of those numbers. They may still dispute the legality of the strikes, their causes, whether they *might* have been avoided and at what cost, or the relationship of the deaths to military goals. In practice, governments and publics can regard attacks that cause great civilian harm as unacceptable for a myriad of reasons—even when these attacks can legally be justified by the United States.⁴⁵ The numbers themselves can have political impact.

Elasticity

The second respect in which the modern norm is more demanding, particularly of the United States, is its elasticity. Compliance with most norms cannot be reduced to “a static set of clear sharp-edged rules.”⁴⁶ Violations are commonly judged in terms of relative degrees of severity. In the case of civilian casualties, this is true on two levels. First, it is evident in the broad and historically relative tightening of overall standards. Acceptance of absolute levels of civilian harm has decreased over time, even as the distinction between foreign and

internal armed conflict has all but disappeared. States had once been partially insulated from criticism when using violence within their own borders, but especially after the Cold War, a government faced international condemnation for imposing civilian harm in either foreign lands or on its own territory. In both contexts, there is less forgiveness of civilian casualties.

It is not only the United States that faces different standards of judgment today. Russian attacks on Grozny, capital of the breakaway republic of Chechnya, prompted widespread public criticism from the United States and other foreign governments.⁴⁷ The devastation was so great that it was not possible to count precisely the civilian casualties; the UN later referred to Grozny as the “most destroyed city on earth.”⁴⁸ Likewise, the United States condemned Sri Lanka’s May 2009 use of artillery against rebel forces collocated with internally displaced persons because it caused “an unacceptably high level of civilian casualties.”⁴⁹ These acts might have escaped significant criticism in decades past, but they were nearly universally regarded as deplorable.

The second respect in which normative standards are elastic pertains to an actor’s perceived relative ability to control the harm it inflicts. Expectations of omnipotence are never realistic, of course. Even American pilots cannot necessarily anticipate when a train will cross the bridge in their sights, and weapons still go awry, landing in crowded markets because they have malfunctioned.⁵⁰ However, powerful militaries are expected to avoid civilian casualties more successfully, while the same level of harm may be more readily accepted or excused when it is inflicted by less capable or technologically backward armed groups.

Imagine if the United States had adopted Russia’s tactics against Grozny or Sri Lanka’s methods in its recent civil war. As much as those two governments were pilloried, the United States would have faced a more scathing backlash for adopting the same tactics. The world expects the most of the most capable forces.

Elastic expectations in turn embolden weaker parties to claim that they cannot be held to the highest standards. During the 2009 war in Gaza, Hamas leaders lobbed hundreds of unguided rockets into Israel, killing three Israelis. Vastly superior Israeli forces killed some 1,600 Gazans. While the United Nations criticized both sides for LOAC violations, Hamas sought to defend its attacks on the grounds that it lacked true precision capability.⁵¹

Elastic compliance standards create a de facto “sliding scale” in which each party is judged according to perceptions of its ability to limit civilian harm. With the world’s nearly 200 states possessing vastly different military capabilities, a single objective standard would be far above or below the capabilities of many states. The norm’s elasticity solves this problem. However, as a result, the highest standards apply to the United States and other Western industrialized nations, who are expected to cause fewer civilian casualties simply because others believe that they *can*.⁵²

Compliance

A sliding scale formula still raises the ultimate question of compliance. States, international bodies, and NGOs that advocate minimizing civilian harm do not articulate how many casualties would be too many or specify how many would be acceptable for whom under what circumstances. Their criticisms indicate only that military forces should cause as few civilian casualties as possible (and possible is presumed to vary, in part by capability).

The critique’s lack of consistency and clarity is a source of great discomfort for military actors engaged in the use force. There is neither consensus nor specificity regarding how many civilian deaths is “a lot” or “too many.” How should one even contextualize the scale of civilian harm? Overall, by war? Per aircraft sortie? Per tons of weapons dropped? In relation to the number of combat troops deployed? Should the level of harm be a function of the population density in the conflict arena? Or should the assessment lie instead in the ratios of combatant deaths to noncombatant deaths? Each of these metrics has been applied or suggested by various analysts, activists, or scholars.⁵³

Since the standard is unclear, “compliance” may seem impossible or the wrong notion altogether. Unsurprisingly, the US military experiences the normative expectation as one of causing zero civilian casualties.⁵⁴ The United States insists that such an expectation is unrealistic. Yet while trying to respond to this norm, US officials sometimes suggest that the United States shares the zero-tolerance view. In 2008 Gen David D. McKiernan, US Army, then the commanding US general in Afghanistan, stated, “Every death of a civilian in wartime is a terrible tragedy. . . . Even one death is too many.”⁵⁵

US military forces are caught in a conundrum. They agree that as a moral question, civilians should not die in armed conflict. Practically,

though, they doubt that it is possible to avoid all civilian harm. For a long time, the US military reconciled these competing realities through the LOAC, which provided a conditional, relational framework for judging and accepting civilian harm. However, today, the legal justification no longer addresses the contemporary norm.

Expectations this fuzzy or lofty might be dismissed for lack of rigor and specificity. However, as norms scholars have noted, “We only know what is appropriate by reference to the judgment of a community or a society. We recognize norm-breaking behavior because it generates disapproval or stigma and norm-conforming behavior either because it produces praise, or, in the case of a highly internalized norm, because it is so taken for granted that it provokes no reaction whatsoever.”⁵⁶

In summary, the expectation that belligerents will minimize civilian harm reflects an assessment or impression of what they are *capable* of doing in war. The standard is not a formula that only x number of deaths may result from y use of force. The standard is not a percentage of the population or an algorithm derived from the war’s objectives. The standard is not zero casualties, but neither is it the casualties that might be justified under the LOAC. Rather, the standard is that the military force in question has, in fact, done the best it can. The burden—and the opportunity—for the military lies not in arguing why its actions were justified but rather in showing why its actions caused the least civilian harm possible.

Conclusion

The standards for judging the conduct of war have changed dramatically over the last two decades, and they have hit airpower hard. US airpower doctrine has never endorsed the direct targeting of civilians, and the US military was among the first to adopt a legal code of conduct.⁵⁷ The US commitment to the LOAC has been used to justify civilian deaths where they occur. Nevertheless, this is clearly no longer enough.

A9 struggled with the question of standards regarding civilian casualties in its study. The math indicated that only a small proportion of US air strikes resulted in civilian casualties. However, the math raises more important questions. Was 1 percent or 3 percent of air strikes too much collateral damage? Compared to what? Would it

be preferable to not act at all (perhaps ceding initiative or allowing US forces to be overrun)? Should ground troops instead rely on rotary gunships or on indirect fire? What do the numbers mean compared to how the USAF operated in Vietnam or how the Russian air force operated over the city of Grozny?

A9 did not pretend to address such questions, but it recognized something even more important: simply justifying airpower's performance was an insufficient response to the critics. The key issue, the analysts concluded, was improving performance. "We need to go beyond addressing just the IO [information operations] impact of CIVCAS and be willing to put ourselves under the strongest microscope of scrutiny to ensure we consistently further our ability to contribute to the joint fight."⁵⁸ A9's assessment was exactly right, and this has been the direction in which the USAF has been fitfully headed for the past two decades.

This is the story of how that change began. Airpower's prominence in the conflicts of the 1990s made it the target of humanitarian criticism. The USAF was forced to confront the growing gap between the military's understanding of the LOAC and the heightened public expectation that civilians should not die in war. These expectations combined with longstanding airpower tenets and institutional self-interest to set in motion a promising chain of adaptation.

Viewed in historical perspective, the evolution seems revolutionary. Told of a particularly discriminate air mission during Operation Iraqi Freedom, a retired US general wrote facetiously, "Blood thirsty brutes in uniform are trying to avoid destroying an unknown building 30 meters from their assigned target? I am struck with the notion that the world has changed."⁵⁹ Today, airpower continues grappling with normative expectations and chasing success further into the future.

Notes

1. Cliff Tompkins, "Kinetic Airpower and Civilian Casualties" (PowerPoint presentation, HAF A9A, Rosslyn, VA, June 2009).

2. Ibid.

3. Jim Michaels, "Airstrikes in Afghanistan Increase 31%," *USA Today*, 5 November 2008, 1, http://usatoday30.usatoday.com/news/world/2008-11-05-afghanstrikes_N.htm.

4. See, for example, Charles Dunlap, "Lawfare Today . . . and Tomorrow," in *International Law and the Changing Character of War*, International Law Studies 87, ed. Raul A. "Pete" Pedrozo and Daria P. Wollschlaeger (Newport, RI: US Naval War College, 2011), 318.

5. Tompkins, "Kinetic Air Power and Civilian Casualties."

6. Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: Human Rights Watch, 2003), <http://www.hrw.org/reports/2003/usa1203/usa1203.pdf>.

7. Tompkins, "Kinetic Air Power and Civilian Casualties."

8. Because even the military's data on US SIGACTS (significant activities [meaning armed engagements of some form]) in Iraq was poor, A9 used the number of US service members killed in action as a proxy.

9. Tompkins, "Kinetic Air Power and Civilian Casualties."

10. Ibid.

11. Ibid.

12. Ibid.

13. While the use of US airpower centrally involves the US Navy, I have focused on tracing the processes of change within the USAF.

14. Williamson Murray, "Not Enough Collateral Damage: Moral Ambiguities in the Gulf War," in *Civilians in the Path of War*, ed. Mark Grimsley and Clifford J. Rogers (Lincoln: University of Nebraska Press, 2002).

15. I use the example of Sri Lanka later in this chapter. For more information, see transcript of Ian Kelly, daily press briefing, US Department of State, 11 May 2009, <http://www.state.gov/r/pa/prs/dpb/2009/05/123229.htm>. Reports of some 20,000 civilian deaths in the final days of the campaign were dismissed as inflated, but the UN concurred that civilian casualties were extremely high and cause for concern.

16. Attributing causality is particularly difficult. This was a weakness of the *Lancet* study, which based its analysis upon civilians' reports of which munitions had caused damage to their homes. See, for example, Les Roberts, Riyadh Lafta, Richard Garfield, Jamal Khudhairi, and Gilbert Burnham, "Mortality before and after the 2003 Invasion of Iraq: Cluster Sample Survey," *Lancet.com*, 29 October 2004, <http://web.mit.edu/humancostiraq/reports/lancet04.pdf>.

17. Edward N. Luttwak, "Toward Post-Heroic Warfare," *Foreign Affairs* 74, no. 3 (May–June 1995): 109–22.

18. For a discussion of claims of the percentage of civilians killed in modern war, see Adam Roberts, "Lives and Statistics: Are 90% of War Victims Civilians?," *Survival* 52, no. 3 (June–July 2010): 115–36; and Eric Hobsbawm, "Barbarism: A User's Guide," *New Left Review* 206 (July–August 1994): 44–54.

19. Phillip S. Meilinger, "Air War and Humanitarian Concerns" (working paper, Humanitarian Challenges in Military Intervention Workshop, Project on the Means of Intervention, Carr Center for Human Rights Policy, Harvard Kennedy School, Washington, DC, 29–30 November 2001).

20. See, for example, John Tirman, *The Deaths of Others: The Fate of Civilians in America's Wars* (New York: Oxford University Press, 2011).

21. Robert C. Owen, ed., *Deliberate Force: A Case Study in Effective Air Campaigning, Final Report of the Air University Balkans Air Campaign Study* (Maxwell Air Force Base, AL: Air University Press, 2000).

22. C. J. Chivers and Eric Schmitt, "In Strikes on Libya by NATO, an Unspoken Civilian Toll," *New York Times*, 17 December 2011, <http://www.nytimes.com/2011/12/18/world/africa/scores-of-unintended-casualties-in-nato-war-in-libya.html>.

23. W. Hays Parks, "Conventional Aerial Bombing and the Law of War," *Proceedings of the U.S. Naval Institute* 108, no. 5 (May 1982): 98–117.

24. Jennifer Hazen, "Humanitarian Challenges in Military Intervention," in *National Security and Human Rights Conference Report* (Humanitarian Challenges in Military Intervention Workshop, Carr Center for Human Rights Policy, Harvard Kennedy School, November 2001), 13.

25. The contention that *can* implies *ought* is contested as a legal matter; senior US military lawyers are adamant that the LOAC does not require use of precision weapons. Audiotape archives from the Project on the Means of Intervention Proceedings, National Security and Human Rights Program, Carr Center for Human Rights Policy, Harvard Kennedy School of Government, Washington, DC, 1992–1996. These distinctions are explored in greater detail in chapter two.

26. Johanna Neuman, "Saddam Keeps Focus on Civilian Toll," *USA Today*, 7 February 1991.

27. Quoted in Laura Myers, Associated Press, "Civilian Risks Escalate as Kosovo Targets Shifts," *SouthCoastToday*, 18 April 1999, <http://www.southcoasttoday.com/apps/pbcs.dll/article?AID=/19990418/NEWS/304189979>.

28. Gen H. Hugh Shelton, quoted in David Wood, "U.S. Approach a Disadvantage, Analysts Say; Risk Avoidance Style vs. Brutality Is the Problem," *New Orleans Times-Picayune*, 28 March 1999. See also "Press Conference by Secretary General, Dr. Javier Solana and SACEUR, Gen. Wesley Clark" (transcript, NATO Headquarters, Brussels, Belgium, 25 March 1999), <http://www.nato.int/kosovo/press/p990325a.htm>.

29. Secretary of Defense Robert M. Gates, quoted in Jim Garamone, "U.S. Regrets Any Loss of Innocent Lives in Afghanistan, Gates Says," *American Forces Press Service*, 7 May 2009, <http://www.defense.gov/news/newsarticle.aspx?id=54240>.

30. Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (New York: Basic Books, 1977).

31. The ICRC has recognized duties to facilitate implementation of the Geneva Conventions. Martha Finnemore and Kathryn Sikkink, "International Norm Dynamics and Political Change," *International Organization* 52, no. 4 (Autumn 1998), 902.

32. To the uninitiated, humanitarian relief groups may appear indistinguishable from pure human rights advocates. Humanitarian relief providers see a significant distinction in their focus on ameliorating the civilian impact of war, even as many in this category become more involved in the policy debate, including the debate about using force.

33. National Security and Human Rights (NSHR) Proceedings. See also discussion about law in chapter three.

34. Marco Sassòli, "Legitimate Targets of Attack under International Humanitarian Law" (background paper prepared for the Informal High-Level Expert Meeting on the Reaffirmation and Development of International Humanitarian Law, Program on Humanitarian Policy and Conflict Research, Harvard University, June 2004), 2, <http://www.hpcrresearch.org/sites/default/files/publications/Session1.pdf>. Note that the US military refers to the LOAC rather than the law of war (LOW) or IHL.

35. Within the humanitarian framework, war itself can be problematic because it demands trade-offs among ends and lives. Some human rights organizations categorically oppose the use of force, others refrain from taking a formal position on the legitimacy of intervention, and others support certain interventions, generally on human rights grounds.

36. In chapter 2, I discuss this issue in greater detail.

37. See, for example, Wesley K. Clark, *Waging Modern War: Bosnia, Kosovo, and the Future of Combat* (New York: Public Affairs, 2001), 441.

38. This discussion is not meant to suggest that there are no instrumental or political reasons for such criticism.

39. Norms have been defined as “collective understandings of the proper behavior of actors.” Jeffrey W. Legro, “Which Norms Matter? Revisiting the ‘Failure’ of Internationalism,” *International Organization* 51, no. 1 (Winter 1997), 33. Laws are also norms, but I will refer to them in this book exclusively as laws in order to distinguish law from the moral and social norms pertaining to minimizing civilian casualties. I will use the terms *expectation* and *norm* interchangeably to describe this “collective understanding.”

40. In chapter 3, I explore the content and role of law in armed conflict.

41. Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War* (New York: Houghton Mifflin, 1993), 275–77. I chronicle this example in chapter 4.

42. In Afghanistan in 2009, the United Nations, international and local NGOs, the Afghan government, and the international coalition compiled civilian casualty statistics. Ban Ki-moon, *Report of the Secretary General pursuant to Paragraph 40 of Resolution 1917 (2010)*, UN Doc. S/2010/318 (June 2010) (Kabul, Afghanistan: United Nations, 16 June 2010); and United Nations Human Rights Council, *Report of the United Nations High Commissioner for Human Rights on the Situation of Human Rights in Afghanistan and on the Achievements of Technical Assistance in the Field of Human Rights*, UN Doc. A/HRC/16/67 (New York: United Nations, 19 January 2010). For a review of the difficulty of counting civilian deaths, see Lucinda Fleson, “The Civilian Casualty Conundrum,” *American Journalism Review*, April 2002, <http://ajrarchive.org/article.asp?id=2491>.

43. In the case of RTS, NATO attempted to argue that Serbia was at fault for forcing civilian employees to work in a facility that it had been warned would be attacked. See Amnesty International, *NATO/Federal Republic of Yugoslavia: “Collateral Damage” or Unlawful Killings? Violations of the Laws of War by NATO during Operation Allied Force* (London, UK: Amnesty International, June 2000), 45, <https://www.amnesty.org/en/library/asset/EUR70/018/2000/en/e7037dbb-df56-11dd-89a6-e712e728ac9e/eur700182000en.pdf>. The United States has also deflected criticism by arguing that the Taliban seeks to put civilians in harm’s way. See Steve Holland, “U.S. Blames Taliban for Afghan Civilian Casualties,” *Reuters*, 20 May 2007.

44. Even after the US-led international force in Afghanistan subsequently began using civilian casualty figures to evaluate its performance, the data remained classified. Aislinn Simpson, “British Army Officer Arrested over Military Secrets Leak,” *Telegraph* (UK), 4 February 2009.

45. The Amiriyah bunker incident is one example.

46. Andrew Hurrell, “Norms and Ethics in International Relations,” in *Handbook of International Relations*, ed. Walter Carlsnaes, Thomas Risse, and Beth A. Simmons (Thousand Oaks, CA: Sage Publications, 2003), 143.

47. There were two different phases of the conflict and criticism during the same decade. Carlotta Gall, “Foreign Powers Step up Criticism,” *The Moscow Times*, 31 December 1994. Emblematic of Russia’s approach during the second conflict was a missile attack against an alleged military target in a central market that caused some 140 civilian casualties. The intended target was unclear. Human Rights Watch, “Evi-

dence of War Crimes in Chechnya” (press release, Human Rights Watch, 3 November 1999), <http://www.hrw.org/news/1999/11/02/evidence-war-crimes-chechnya>.

48. “Scars Remain amid Chechen Revival,” *BBC News*, 3 March 2007, http://news.bbc.co.uk/2/hi/programmes/from_our_own_correspondent/6414603.stm.

49. See Kelly, daily press briefing. Reports of some 20,000 civilian deaths in the final days of the campaign were dismissed as inflated, but the UN concurred that civilian casualties were extremely high and cause for concern. “Paper: 20,000 Killed in Sri Lanka Conflict,” *CNN.com*, 29 May 2009, <http://www.cnn.com/2009/WORLD/asiapcf/05/29/srilanka.death.toll/index.html>.

50. See, for example, John F. Burns, “A Nation at War: The Iraqi Capital: Iraq Blames U.S. for Market Blast That Killed Civilians in Baghdad,” *New York Times*, 29 March 2003.

51. Associated Press, “ Hamas Defends Rocket Attacks on Israel, Rejects UN Push for New Investigation,” *Boston Globe*, 28 January 2010, http://www.boston.com/news/world/middleeast/articles/2010/01/28/hamas_defends_rocket_attacks_on_israel_rejects_un_push_for_new_investigation/. Hamas is widely criticized for its indiscriminate attacks; Human Rights Watch found that Hamas’s denial of war crimes was legally and factually wrong. Human Rights Watch, “Gaza: Hamas Report Whitewashes War Crimes” (press release, Human Rights Watch, New York, 28 January 2010), <http://www.hrw.org/news/2010/01/28/gaza-hamas-report-whitewashes-war-crimes>.

52. This elasticity seems to reflect the disparities of global power. A handful of states with more balanced military capabilities created LOAC treaties around the turn of the twentieth century.

53. See, for example, Carl Conetta, *Operation Enduring Freedom: Why a Higher Rate of Civilian Bombing Casualties*, Project on Defense Alternatives Briefing Report no. 13 (Cambridge, MA: Commonwealth Institute, 18 January 2002), <http://www.comw.org/pda/0201oef.html>; and William M. Arkin, “Civilian Casualties and the Air War,” *Washington Post*, 21 October 2001.

54. USAF officers routinely express this view. NSHR Proceedings; Lt Gen David Deptula, USAF, interview by the author, Washington, DC, 21 December 2009; and Maj Gen Charles Dunlap, USAF, retired, interview by the author, Washington, DC, 4 December 2009. NATO’s Operation Allied Force has been singled out as an example in which zero noncombatant casualties were expected. See Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 205.

55. David McKiernan, “General McKiernan Expresses Sorrow for Civilian Non-combatant Casualties and Proposes Joint Approach to Future Enquiries” (press release PR#2008-456, NATO, Brussels, Belgium, 3 September 2008), <http://www.nato.int/isaf/docu/pressreleases/2008/09-september/pr080903-456.html>.

56. Finnemore and Sikkink, “International Norm Dynamics,” 891–2.

57. This was the Civil War–era Lieber Code. For the absorbing history, see John Fabian Witt, *Lincoln’s Code: The Laws of War in American History* (New York: Free Press, 2012).

58. Tompkins, “Kinetic Air Power and Civilian Casualties.”

59. Gen Charles Horner, USAF, e-mail to the author.

Chapter 2

Airpower through the Cold War

Theory, Practice, and Rationalization of Civilian Harm

In this chapter, I place contemporary expectations about civilian casualties in context by reviewing the early US theory and practice of airpower through the Cold War period. I explain the persistent tension between stated US goals of strategic bombing and the ways in which air campaigns actually affected civilians. I show how the US public and military intellectually reconciled the humanitarian tensions between airpower theory and practice. I conclude by showing that tactical constraints on the air war in Vietnam foreshadowed airpower's future, despite the political and military backlash they immediately provoked.

Additionally, I outline the synergistic changes in technology and strategic bombing concepts that began to emerge after the Vietnam War. Consistent with enduring principles of airpower, these developments laid the groundwork for future United States Air Force (USAF) adaptation to reduce civilian casualties.

Airpower as Destruction

For most of the twentieth century, the “American way of war” reflected a curious dualism.¹ Americans believed in the precise and humane use of force. US airpower officials routinely described carefully calibrated attacks against military targets. Yet the US style of war making created an enormous gap between the conception/description of US warfare and the actual US practice of war. Political constraints sometimes sought to narrow this gap by limiting the means of war, but US military institutions prepared to use overwhelming and destructive firepower to deter or counter adversaries.

Russell Weigley described the US approach to war as one of substituting technology and mass for manpower. The United States sought to harness its industrial might so that it could achieve military victory through destruction and sheer attrition.² The approach proved its value during “total war” in World War II, and the US commitment to

investing in technology to leverage destructive power has never waned.

Since the total wars of the mid-twentieth century, US leaders have regularly imposed limitations upon US conduct of war. Nonetheless, US military operations have often killed significant numbers of civilians. Until very recently, the goal of US doctrine, training, and weapons development continued to apply overwhelming kinetic power at the tactical and operational levels. Consequently, a gap remained between the US view of its conduct of war and its actual effects—even in limited war. Such a gap was not unique to the United States, but America was extreme both in its fervent faith that it fought humanely and in its simultaneous doctrinal and technological commitment and ability to inflict destruction.³ In addition, the United States' frequent use of force regularly exposed the gap between belief and effect.

Americans developed several closely related ways to reconcile the gap between collective identity and military practice. These included emphasizing the importance of intent in war, embracing the concept of collateral damage (and distinguishing it from “atrocities”), relying upon the law to justify civilian harm, and arguing that decisive and overwhelming force reduces the overall death toll in war. In this chapter, I explore the divergence of theory and practice as it pertains to airpower—and principally strategic bombing—and show how the United States has consoled itself about its own morality while imposing grave harm upon civilians.

From Tactical to Strategic Bombing

Early Years of Airpower

Despite the Wright brothers' ingenuity, the United States was slow to develop aircraft. By 1916 it had committed the First Aero Squadron (flying Curtiss JN-2s, or Jennys) to help hunt Pancho Villa in the American Southwest. When World War I broke out, Americans lacked capable aircraft and qualified pilots. Beginning in 1916, US volunteers trained under the French Aviation Service and served in the Lafayette Escadrille. Concerted efforts at home swiftly built the US Air Service. By 1918 the first US squadrons arrived for duty in France.

US commanders used aircraft primarily in a tactical role: flying in support of ground troops. Pilots attacked enemy aircraft and balloons, bombed and strafed ahead and behind enemy lines, and conducted reconnaissance. The war featured discernable uniforms, battle formations, and lines of advance. Aircraft remained close to their targets, and pilots used their own vision for targeting. While this targeting was imprecise, civilians were largely absent from the slow-moving battlefield. Aircraft played a celebrated role, helping halt a German advance at Château-Thierry and supporting campaigns at Saint-Mihiel and Meuse-Argonne.

Civilians were not exempt from the effects of airpower, however. Germany used zeppelins and planes to bomb British cities and killed more than 1,000 civilians; the British did the same to urban areas in Germany.⁴ While limited and crude, aerial bombing of cities “provided a glimpse of the potential for air power that was simultaneously intoxicating and terrifying.”⁵

Bombing Theory

As strategists began to imagine airpower’s transformative uses, there were portents of greater danger for civilians. Many early airpower advocates believed that because air bombardment could directly undermine a nation’s will to fight (via attacks on its population and cities), airpower offered a more efficient route to victory. Compared to the stalemated ground combat of World War I, airpower’s destructive powers suggested an alluring decisiveness.

Watching Italy’s aircraft attack Libya in 1916, Italian Giulio Douhet became convinced that airpower would become the determinate method of war. Airpower could use the “third dimension” to directly target enemy population centers, since civilian morale was the center of gravity in total war.⁶ Douhet launched a fervent advocacy campaign, arguing that aerial bombing promised success “more easily, faster, and more economically, and with less bloodshed by directly attacking that resistance at its weakest point.”⁷ By this logic, strategic targeting was humane because it would end war quickly.⁸ Douhet’s theory was revolutionary not simply because the Italians at the time favored their infantry forces but also because the theory “failed to observe early principles of distinction and humanity that exempted a civilian population from attack.”⁹

A 1917 British memorandum (colloquially known as the Smuts Report), justifying an independent British air force, foresaw that “aerial operations with their devastation of enemy lands and destructions of industrial and populous centres on a vast scale may become the principal operations of war.”¹⁰ The British, having just felt the terror of indiscriminate zeppelin and airplane attacks, were convinced of airpower’s effects on national (civilian) morale and expected their nascent air force to exploit this power.¹¹ British chief of Air Staff Sir Hugh Trenchard’s affinity for area bombing was evinced during World War II as morale bombing only thinly veiled as attacks on industrial targets.¹² Indeed, the belief that bombing civilian populations can deliver strategic effects persists today.¹³

In the United States, air commander and World War I hero Brig Gen William “Billy” Mitchell shared Douhet’s conviction in the value and efficiency of targeting vulnerable economies, infrastructure, and civilian morale.¹⁴ Mitchell also believed that the capability to bomb from the sky would end wars quickly.¹⁵ He, too, saw airpower’s devastation (including its effects upon civilian lives and lifestyles) as the key to its success.¹⁶ In fact, Mitchell had urged the bombing of German cities during the war, but Secretary of War Newton D. Baker had overruled Mitchell, prohibiting “promiscuous bombing upon industry, commerce or population, in enemy countries disassociated from obvious military needs.”¹⁷

Despite Mitchell’s views, the official US position on airpower was circumspect regarding its potential to cause civilian harm. The United States had condemned the British for promiscuous bombing during World War I.¹⁸ In a 1919 statement, Secretary Baker established the parameters for the future development of US airpower by ruling out bombing civilians on “the most elemental ethical and humanitarian grounds.”¹⁹ Official guidance suggested that Americans would differentiate themselves in this arena.

International concern about the humanitarian impact of the airplane prompted renewed legal efforts to restrain aerial bombing.²⁰ In the early 1920s, a Commission of Jurists proposed new rules for air warfare to preclude purposefully terrorizing the civilian population, damaging civilian property, or injuring noncombatants.²¹ A reluctance to forego potential military advantage led nations to reject the 1923 Hague Draft rules, but the sentiment to protect civilians from airpower had been clearly registered.²²

US Air Strategy

Public (and often personal) moral sensibilities would figure prominently in the development of US targeting strategies. US public opinion in particular opposed aerial attacks on civilians, a fact to which United States Army Air Force (USAAF) leaders remained sensitive.²³ Robert Pape suggests that American liberalism more generally pushed US doctrine away from targeting noncombatants.²⁴

US airpower proponents balanced their enthusiasm for the new tool of war with a host of other factors as well. In particular, declining defense budgets demanded efficiencies such as those promised by bombing specific targets rather than destroying broad swaths of geography.²⁵ In a 1941 book, two US generals would convey this point without sentimentality: “Human beings are not priority targets except in special situations. Bombers in far larger numbers than are available today will be required for wiping out people in sufficient numbers by aerial bombardment to break the will of a whole nation.”²⁶ Economics indicated humanity.

The isolationism of the interwar period and the division of responsibilities between the Navy and the Army also pushed US airpower in a more discriminating direction.²⁷ Lacking the appetite for a strategic offensive orientation, in 1931 US leaders gave the Army responsibility for coastal defense. This particular “defensive” mission provided the most plausible justification for a long-range bomber capability, which was essential if airpower were to play a strategic role in the future.²⁸ In turn, the mission of attacking ships required greater precision than that used for area bombing.²⁹ The relative precision needed for coastal defense, supported by technology like the Norden bombsight, could support a strategic role for bombers.³⁰ Air advocates therefore used the sea defense role to justify precision and a long-range bomber, the Boeing B-17 Flying Fortress, to a skeptical Congress, while nursing the notion of using airpower for strategic effects in a future offensive role.³¹

While officers in the Air Corps Tactical School (ACTS) had initially considered the viability of conducting direct strikes against civilian populations, they settled during the 1930s on a doctrine of what they described as precision bombing. Known as “industrial fabric” or “industrial web” theory, the approach focused, as a matter of efficiency, on attacking discrete industrial and infrastructure targets.³² ACTS theorists believed that taking out the key nodes of energy,

production, and distribution would disrupt the enemy's overall material and psychological war effort.³³ Self-defending bombers flying in daylight would target specific elements of the enemy's economy: oil, steel, electrical power, and transportation. As Robert Pape summarized, "In contrast to the British, American air strategy aimed not at killing large numbers of civilians directly but at causing general social collapse through the precision bombing of key industrial nodes."³⁴

The airpower community understood the likely effects of these raids when industrial nodes were located in cities, but advocates emphasized that noncombatant deaths were not the *goal* of the bombing.³⁵ Nonetheless, the United States believed that its "precision" approach to bombing was fundamentally different from that of other nations and indeed fundamentally different from how belligerents were to employ airpower in the early years of World War II.

As the war unfolded, both the executive branch and Congress criticized fascist states—particularly the Japanese in 1937 and 1938 and the Italians in 1938—for bombing civilians.³⁶ Pres. Franklin D. Roosevelt in 1939 called on belligerents to commit to prohibit "ruthless" aerial bombing of undefended civilian populations that had "profoundly shocked the conscious of humanity."³⁷ By warning against sinking to "this form of inhuman barbarism," he thereby implied that any future US bombing would be neither inhumane nor barbaric.³⁸

World War II

Americans ultimately found their claims of distinction to be largely illusory.³⁹ Even as Roosevelt criticized the fascists, his military forces were drawing up plans to bomb targets in cities. Accepting that many would condemn these attacks, planners considered them necessary because of the value of the industrial targets located in urban centers. The US air campaigns relied upon the belief that attacking military or economic targets and killing civilians incidentally was fundamentally different from purposefully targeting civilians.⁴⁰ The centrality of intent, rather than effects, in US thinking about airpower—and the use of force generally—persists today.

Although US air planners would disparage the British Royal Air Force (RAF) for abandoning precision during the war, the US airpower story followed a similar arc. Mindful of both limited air assets and the vulnerability of its own cities, the RAF began constrained daylight "precision bombing" in World War II but faced high losses

with limited results.⁴¹ In summer 1941 the RAF Bomber Command realized that only one-fifth of RAF bombers got within five miles of their targets.⁴² By 1942 the RAF had switched over to nighttime area attacks on cities in a search for greater effects. The RAF also defined “military objectives” broadly, seeking to attack as many (not as few) targets as possible “in order to maximize the effects on morale.”⁴³

Later that year, the United States entered the war committed to high altitude, daylight “precision” bombing. The USAAF took professional pride in its practice of using self-defending bombers to conduct daytime raids, which were more accurate than the RAF’s nighttime raids at that time.⁴⁴ Americans, and in particular Eighth Air Force commander Gen Carl A. Spaatz, argued that attacks on strategic targets would be more effective than urban area bombing.⁴⁵ Yet a combination of operational realities yielded high losses and unsatisfying effects, weakening the initial US commitment to unescorted daytime precision raids.⁴⁶ By late summer and fall 1943, in both the European and Asian theaters of war, the USAAF had abandoned daytime raids and adopted a bombing strategy that appeared much like the RAF practice of urban area bombing.

Regardless of nationality, airpower doctrine confronted uncomfortable realities. Governments had fully mobilized populations for war, and industrialization ensured that even those citizens not in uniform often participated in making war-related products. Enemies viewed civilians working in arms factories as legitimate targets.⁴⁷ Belligerents also regarded the enemy as responsible for erasing the distinction between these civilians and military targets. More importantly from the perspective of overall civilian casualties, many industrial objectives were located in urban areas. At the same time, capabilities and technology patently failed to support the military’s intentions to destroy only economic targets. For example, during the 1943 Eighth Air Force raids against the Schweinfurt ball bearing factories, only one of every 10 bombs landed within 500 feet of its target.⁴⁸ If visual identification was hardly precise, bombing through cloud cover was more challenging. The only available radar technology “allowed the Eighth to locate a city through clouds, but not a specific plant or precision objective.”⁴⁹

All these factors thwarted US Airmen’s desire to be discriminate and undermined the president’s political dictate that Americans show they were not “barbaric.” While US air strikes were nominally directed against specific military targets, rather than general urban areas, they

could hardly be considered precise by modern sensibilities. As one USAF lawyer summarized, “Although there may not have been any specific intention to bomb indiscriminately, it was an acceptable outcome.”⁵⁰ The official post-war *Strategic Bombing Survey* exposed what W. Hays Parks called the Eighth Air Force’s “spin” on its operations: “In many cases bombs dropped by instruments in ‘precision’ raids fell over a wide area comparable to that covered normally in an ‘area’ raid. If the specific target was, for example, a marshalling yard located in a German city, as often happened, such a raid had the practical effect of an area raid against that city, but on the basis of the declared intention of the attackers it would go into the air force records as a precision attack on the transportation system.”⁵¹ The USAAF relied primarily upon its own good intent to maintain its commitment to the principle of distinction between combatants and noncombatants.⁵²

Even as the United States adopted less discriminate tactics, it maintained that it was targeting military objectives. By late 1943 the United States was using fighter escorts to protect its bombers in Europe and had increased its operational tempo—in large measure by bombing through cloud cover instead of waiting for clear days that allowed visual sighting with bomb sights. These so-called “blind” raids reduced bombing accuracy to the levels of RAF bombing in 1941.⁵³

In spring 1945, the USAAF adopted changes in strategy with even greater consequences for civilians. Leaders did not take these changes lightly, but such changes stretched US claims to precision and distinction beyond recognition. A string of successes following the invasion of Normandy had led the Allies to anticipate a rapid collapse of the Third Reich, but V-2 rockets and a surprise German counteroffensive in December 1944 suddenly suggested otherwise. Essentially out of ground troops for Europe, the Americans and British turned to airpower to ease the Soviet advance westward and regain the initiative. The two nations continued prioritizing oil facilities but now adopted a new secondary objective: bombing German cities due west of the advancing Soviet line.⁵⁴ The goal was to increase the chaos behind the German line, consciously exploiting the presence of huge numbers of German civilian refugees.⁵⁵ The Eighth Air Force commander, Jimmy Doolittle, argued against the directive to raid city centers as contrary to US doctrine.⁵⁶

A massive US attack on Berlin on 3 February 1945 best exemplified the shift in US strategy. Americans specifically designated the city center as the target and aimed to affect morale.⁵⁷ The Dresden

raid remains the most ignominious of the February attacks, although the US contribution was relatively modest, limited to attacking marshaling yards after RAF raids already had turned the city into an inferno.⁵⁸ Dresden's legacy looms large because a host of circumstances magnified its impact, causing the deaths of some 25,000–30,000 people—most of whom were civilians.⁵⁹ The raid engendered unusually negative press coverage and prompted concerned—if sometimes disingenuous—questions from Allied political leaders.⁶⁰ The firebombing had erased meaningful distinctions between nodes of industry and noncombatants living in urban centers.

US aerial operations in the Far East similarly mocked preferred strategic targeting theories. A newly installed 20th Air Force commander, Gen Curtis LeMay, was under great pressure to deliver results in early 1945. His predecessor had failed to master the cloud cover that constrained US attacks against Japan or the jet stream winds that impeded formation flying as a compensating tactic. LeMay's solution was to adopt low-level incendiary bombing. He described his new methods as “radical” efforts to achieve results.⁶¹

The March 1945 Tokyo bombing alone killed more than 100,000 people and burned 16 square miles. For a short while, it was deemed “the greatest disaster ever visited upon any city.”⁶² However, the raid was considered “a rousing success” by key military commanders and emboldened four additional raids that, along with the Tokyo bombing, inflicted over 40 percent as much destruction as had been achieved against all German cities over the duration of the war.⁶³

LeMay admitted that the Japanese system of dispersal of industry among private homes left a “pretty thin veneer” between military targets and civilians.⁶⁴ There was no point in “slaughtering civilians,” he explained, but the “entire populations got into the act and worked to make those airplanes or munitions.”⁶⁵ Furthermore, destruction was what mattered. “We knew we were going to kill a lot of women and kids when we burned that town. Had to be done. . . . But, to worry about the morality of what we were doing? Nuts!”⁶⁶ Historians have suggested that oversight of the raid by civilian authorities, who might have worried about the morality of US actions, was simply absent.⁶⁷

US Airmen did not perceive their bombing as slaughtering civilians. The internal USAAF history acknowledged that nighttime incendiary raids were a “radical departure from traditional doctrine,” but justified them as destroying “feeder industries” and again stressing

good intent. Firebombing was “not conceived as terror raids against the civilian population.”⁶⁸

The perceived necessities of war had upended US airpower doctrine, making its effects virtually indistinguishable from what Roosevelt might once have deemed inhumane barbarism.⁶⁹ The underlying US philosophy of air targeting differed from the British view. American Airmen would still “reflexively” revert to attacking specific military targets when weather permitted, and they never sought to perfect techniques for firebombing, as did the British.⁷⁰ Still, by “late 1944 and 1945 there was little practical difference between British and US bombing,” except that British bombing appears to have become more accurate.⁷¹

Even as the USAAF adopted previously unimaginable tactics, it continued to elide realities. While firebombing cities, US officials still insisted publicly that they were not targeting civilian populations. Shortly after the United States joined in the Dresden attacks, Secretary of War Henry L. Stimson explained that the United States was striking military targets and reiterated US opposition to “‘terror bombings’ against civilian populations.” After the burning of Tokyo, a spokesman reassured the public that the USAAF remained committed to pinpoint precision bombing.⁷²

This cognitive dissonance extended to the use of atomic weapons against the Japanese cities of Hiroshima and Nagasaki. Pres. Harry S. Truman explained that the United States was bombing “Hiroshima, a military base . . . because we wished in this first attack to avoid, insofar as possible, the killing of civilians.”⁷³ During the war, there was little public doubt or second-guessing about tactical decisions that killed huge numbers of civilians.⁷⁴ Nevertheless, the atomic bomb, it turned out, would uniquely focus American attention on a massive civilian death toll.

Reconciling Civilian Harm after World War II: Intent

During World War II, the USAF had emphasized its intentions (bombing industrial targets) rather than the results of its actions (firebombing that inflicted a massive death toll). In his extensive study of the postwar debate, Sahr Conway-Lanz found that Americans eventually came to accept an analogous distinction as they

struggled to reconcile their role in the mass killing of civilians with perceptions of themselves as “a humane people.”⁷⁵

Only after the Allied victory did political space open up for debate about the conduct of the war. Some Americans evinced a disregard for the lost civilian life, particularly in the context of military necessity and when weighed against losing additional American lives. Others bemoaned the seeming loss of ethical limitations on warfare. “The fences are gone,” wrote one important figure, David Lilienthal, Atomic Energy Commission chairman.⁷⁶ Many US citizens criticized the acts, especially the use of atomic bombs, which had helped tear down those ethical fences. One argument even suggested a moral equivalence of genocide and atomic weapons.⁷⁷

Strategic bombing’s association with mass killings proved a particular challenge for the USAF, which became an independent service in 1947. Strategic bombing—conventional and nuclear—was its *raison d’être*.⁷⁸ Airpower advocates therefore sought to rehabilitate the idea of strategic bombing after the postwar wave of remorse about its effects on civilians. The USAF continued to emphasize its commitment to precision and the distinction between intentions and effects, even where operational realities continued to erode the practical effect of the commitment.

The Navy, on the other hand, harnessed the human costs of strategic bombing to its 1949 critique of the USAF’s Convair B-36 Peacemaker intercontinental bomber.⁷⁹ The Army chairman of the Joint Chiefs of Staff, Gen Omar N. Bradley, sought to reassure the public about strategic bombing generally, disavowing the “wanton destruction of cities or people” and explaining that “we Americans will seek to achieve maximum effectiveness against the enemy’s armed forces, with minimum harm to the nonparticipating civilian populace.”⁸⁰ By the late 1950s, military optimism on the possibilities of discriminate targeting would extend even to nuclear, biological, and chemical weapons.⁸¹

During the early years of the Cold War, the United States relied principally upon a small number of nuclear weapons to deter a perceived growing Soviet threat.⁸² While US defense spending and capabilities would expand with the Korean War, nuclear weapons remained the mainstay of the US defense posture. Given their destructive power, nuclear weapons posed practical challenges for the promise of minimizing harm to civilians. In reality, sensitivity to noncombatant immunity “had little impact on military planning.”⁸³ US war plans directed strategic attacks on industrial facilities that

would wipe out entire cities.⁸⁴ Late 1940s war plans directed using conventional and nuclear weapons to attack “Soviet war-making capacity and will;” specific targets for atomic weapons included cities, urban areas, and population centers.⁸⁵

Publicly, it was difficult to convey a distinction between targeting military objectives and noncombatants themselves. Authorities insisted that an early 1950 draft Department of Defense report on unconventional (nuclear) weapons change the phrase “city or other civilian target” to “major elements of the enemy’s economy supporting his military effort.”⁸⁶ Yet the military maintained its faith in a nominal distinction between targeting areas or objects and targeting civilians themselves and the distinction between intent and outcome. However thin the veneer of distinction became in Dresden, in Tokyo, or in the Single Integrated [Nuclear] Operational Plan, this veneer of distinction remained important to the USAF in particular.⁸⁷

Reliance on intent also helped the American public resolve its ambivalence about World War II and mass civilian casualties. Americans “made intent the dividing line between justifiable and unjustifiable action.”⁸⁸ Conway-Lanz frames the issue as one of narrowly defining “atrocities.” He concludes, “Only the calculated killing of people uninvolved in the fighting of wars remained generally condemned as inhumane and indefensible.”⁸⁹ In essence, Americans narrowed the definition of unacceptable behavior in such a manner that US military policy could, by definition, avoid it.

This intellectual recalibration continues to shape American public views regarding war. The belief that the United States did not intend to target, let alone harm, civilians offered psychological consolation at home. Nevertheless, good intentions eventually became insufficient to excuse military actions that predictably caused civilian harm.

“Limited” Conventional War: Korea

The Korean War was a limited war—a different kind of beast than World War II. Airpower struggled for a strategy, pulled into providing close air support (and later, interdiction of enemy ground forces) for US and United Nations (UN) forces, while seeking a strategic role in inducing a political settlement. Early on, US airpower was tightly constrained, although it became markedly more destructive after the Chinese intervened months into the war.

The war's "limits" did not extend to civilians, who suffered enormously. While unreliable, most estimates suggest that over a million civilians died on each side of the conflict.⁹⁰ US officials described precise aerial bombing against military targets and rejected enemy charges that air forces were targeting civilians. Yet once again, these official statements masked a harsher reality. Commanders eventually used US airpower to attack cities, dams, and even refugees.⁹¹

In response to North Korea's June 1950 attack across its southern border, the United States led a UN force to repel the invaders from South Korea. Pres. Harry S. Truman imposed limits on the geography of attacks and constrained the types of targets that could be bombed. Aerial attacks in the first months were limited to traditional military targets such as tanks, military columns, depots, and air bases.⁹² Truman's primary goal in limiting the use of force was not humanitarian per se but to avoid provoking Korea's neighbors—particularly the Soviet Union and China.

The United States maintained rules—written and verbal—dictating the need to spare civilians in bombing attacks, but the rules proved difficult to follow.⁹³ North Korean troops often intermingled with civilians, and it could be challenging for air forces to identify military targets with certainty. Structures were nondescript and served multiple purposes; civilians were constantly on the move, fleeing the fighting. But despite the rules regarding civilian protection, US strategy incorporated firebombing of cities and destroying dams and irrigation systems.⁹⁴ In at least one glaring instance, US troops were directed to fire on refugees, flatly contravening claims to spare civilians.⁹⁵ In these instances, US public communications sought to reframe the actions, deflect communist allegations of UN barbarism, and avoid provoking a widening of the war.⁹⁶ Americans were largely unaware of the extent of civilian carnage.⁹⁷

By summer, UN forces were in a southern retreat toward Pusan, and tens of thousands of civilians began moving along with them. Refugees clogged roads, interfering with military movements. The Army became concerned about enemy infiltration, as ground forces struggled to control civilian movements. The UN decided to bar refugees from crossing battle lines. However, UN ground forces had relatively few troops and lacked nonlethal means for crowd control. At the Army's behest, the USAF began "straf[ing] all [approaching] civilian refugee parties."⁹⁸ Only in 1999 did this blatantly illegal practice burst into American consciousness through the story of No Gun Ri.⁹⁹

The July 1950 No Gun Ri episode resulted in the deaths of between 100 and 400 South Korean civilians.¹⁰⁰ US forces had stopped hundreds of villagers at an American roadblock where they were repeatedly bombed by US planes and subsequently attacked with small arms fire. The incident was emblematic of a broader enduring reality: the distinction between official policy—in this case a directive barring refugees from crossing battle lines—and the logical means of enforcing such a rule.

Strategic bombing posed a greater direct threat to noncombatants, and again the USAF created tensions between an official policy of avoiding civilian harm and its tactics of firebombing and destroying dams. The July 1950 campaign against North Korea was “conceived much along the lines of the major offensives of World War II” with industrial sites being the nominal targets but morale remaining a primary objective.¹⁰¹ In an ironic reversal of roles in the prior war, US allies expressed concern about the effects of American actions upon civilians.¹⁰² Gen Douglas MacArthur, who had been sensitive to civilian protection during World War II, provided them his personal reassurance.¹⁰³

By late 1950, however, Chinese intervention had reversed the fortunes of the UN force, and MacArthur abandoned prior constraints on strategic bombing while intensifying the overall effort. American aircraft began incendiary raids on cities that had been captured by the enemy. MacArthur vowed to turn North Korean-held territory into a desert.¹⁰⁴ The definition of a military target expanded dramatically. One commander summarized the new reality: “Every installation, facility, and village in North Korea now becomes a military and tactical target.”¹⁰⁵ As orders redefined military targets to include virtually all structures, the distinction between a military and civilian target diminished dramatically. MacArthur’s January 1951 air attacks on Pyongyang, conducted without any advance warning, burned 35 percent of the city.¹⁰⁶ Still, his requests to attack hydroelectric plants were refused.

After MacArthur’s dismissal and the halting of the communist offensive in spring 1951, the USAF struggled to calibrate its “destruction” campaign in the face of sensitive armistice negotiations.¹⁰⁷ This latter phase of the war emphasized attacks on cities and hydroelectric plants, sometimes prompting international criticism. By 1953 the USAF began planning for nuclear options, while seeking yet-unapproved strategic targets to influence enemy decision making.¹⁰⁸ Ultimately,

planners settled on attacks on dams, targeting North Korea's irrigation system for its main agricultural areas. The attacks would appear to be aimed at railway lines ("interdiction" attacks), but they were privately intended to destroy the region's rice crop.¹⁰⁹

Conrad Crane captures the dilemma: "Ironically, as the raids were directed more and more at achieving a political settlement, the less this could be admitted in public as justification for them."¹¹⁰ Nevertheless, the UN command's semantics had long masked the realities.¹¹¹ The United States continued to use the distinction between its intent and results, as well as claims about precise targeting and effects, to reassure the world about the morality of US military conduct.¹¹²

Military Framing of Civilian Casualties: Collateral Damage

Reliance on the primacy of intent in assessing aerial bombing gave way over the 1950s to defining civilian harm as "collateral damage." During World War II and the Korean War, the United States focused on its good intentions—its *desire* to avoid targeting civilians directly—to sustain perceptions of itself as a moral actor. During the Cold War and beyond, the negative, if unintended, results of bombing came to be called collateral damage. The concept of collateral damage was swiftly married to a legal and ethical understanding of the circumstances in which this harm was acceptable.

Phrases such as "collateral devastation" and "collateral effects of the damage" first emerged during efforts to model nuclear blast effects in the 1950s and early 1960s.¹¹³ One analyst argues that the concept reflects a government effort to develop additional targeting options despite recognition of nuclear war's unimaginable destructiveness.¹¹⁴ The term *collateral damage* gravitated to scholarly use in the 1960s, where it referred to both nuclear and conventional damage, often including civilian deaths.¹¹⁵ Some have criticized the words as Orwellian and obfuscating;¹¹⁶ David Grossman argues that the antiseptic term reduces perceived responsibility for death and shields societies from the human consequences of their choices.¹¹⁷

Air Force doctrine and law. According to the Air Force Historical Office, the first doctrinal reference to collateral damage was in the 1964 publication Air Force Manual (AFMAN) 1-1, *Aerospace Doctrine: United States Air Force Basic Doctrine*.¹¹⁸ The mention was only cursory: "Low-observable and precision weapon technologies make conventional

weapons more usable because these technologies reduce the risk of friendly losses, minimize collateral damage, and improve weapons delivery efficiency.”¹¹⁹ The sentence sounds startlingly modern, even though the section concerns the relationship of conventional weapons thresholds to nuclear deterrence.¹²⁰

This term describing the “extra” effects of force became incorporated into DOD’s legal and ethical teachings about the use of force. The *intentional* killing of civilians is prohibited by the LOAC, but the “extra” effects of lawful targeting are understood differently. For example, the 1980 *Commander’s Handbook on the Law of Armed Conflict* explained that “it is not unlawful to cause incidental injury or death to civilians or damage to civilian property during an attack on a legitimate military objective.”¹²¹ Collateral damage could describe civilian deaths that were not inherently illegal. Pursuant to David Grossman’s point about antiseptic language masking the impact of military action, the Air Force sometimes defined the term in such abstract terms that it appeared to exclude civilian deaths.¹²²

Decades later, as airpower became closely scrutinized, the issue of intent reemerged and filtered into the definition of collateral damage. While precise language varied, it often followed this Air Force targeting manual definition: “unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time.”¹²³ DOD still uses this language in its current dictionary of military terms.¹²⁴ One historian regards the reincorporation of intent as a conscious effort to accommodate greater public expectations regarding minimizing civilian casualties.¹²⁵

By differentiating between intended and incidental harm, doctrine clarified that one could intend not to cause harm but nonetheless do so, lawfully: “Intentional direct attacks on civilians are prohibited. However, this is distinctly different from the incidental injury that may be caused to civilians or civilian objects as a result of an attack on a valid military target (collateral damage).”¹²⁶ Collateral damage became central to legal teachings designed both to show what use of force was not allowed (intentional direct targeting and disproportionate use of force)¹²⁷ as well as what was lawful (collateral damage).¹²⁸ But the term originally emerged not as an ethical or legal concern but simply as a description of targeting effects.

Collateral damage as an organizational frame. For the USAF, the early concept of “extra” damage in the nuclear realm simply migrated into conventional military thinking, a function of what scholar Lynn

Eden describes as “organizational frames.” She has shown how socially constructed organizational knowledge (frames) shapes an institution’s perceived reality and its future choices. In other words, the way that institutions define problems shapes solutions as well as the identification of future problems.¹²⁹ In this sense, the bureaucratic origins of the term had significant consequences for how civilian casualties in conventional war subsequently were addressed.¹³⁰

Transposing problem identification and solutions from the nuclear realm to conventional war was to prove limiting for the USAF. This is primarily because the major strategic choices available in the abstract realm of nuclear war planning are targeting choices.¹³¹ In conventional conflict, however, there are many potential routes to preventing civilian casualties beyond targeting choice. Funneling the question of civilian protection into a targeting frame collapsed a host of related choices, actions, and responses that contribute to civilian casualties into a single subprocess. It created an impression that proper targeting was sufficient to address the problem of unintended consequences. It effectively precluded consideration of issues such as using alternative capabilities (including nonlethal tools), the interaction of maneuver and fire, the trade-offs between air and ground capabilities, and the relative value of targets.

The collateral damage issue devolved into a technical problem belonging largely to the targeteers, modelers, and weaponeers. Moreover, because civilian casualties were subsumed under the category of targeting, civilian casualties per se were not a subject of analysis, learning, or material solutions. Civilian protection did not garner independent attention as the services sought to anticipate, resource, and prepare for future operational challenges (what is often referred to as the doctrine, organization, training, materiel, leadership and education, personnel, and facilities [DOTMLPF] process).¹³² Collateral damage, not civilian casualties, became the military consideration.

While the framing of civilian casualties as collateral damage naturally flowed from the USAF’s approach to nuclear weapons modeling, the framing also suited the institutional interests of the USAF. First, it cast negative effects as inevitable, if unintended. Second, the concept of collateral damage emphasized the acceptability of those consequences rather than stressing affirmative responsibilities to avoid them. Finally, it kept the USAF focused on intent and the targeting process instead of broader issues of strategy, capabilities, or operational culture.

Overall, the Cold War concept of “collateral damage” helped the USAF come to grips with—and justify—bombing’s negative effects upon civilians in the face of American faith in its high moral purpose and sensitivity to human rights. The concept’s relationship to the LOAC enhanced its legitimacy for strategists and operators. Furthermore, a desire to emphasize the primacy of intent in the conduct of war may help explain the US perspective toward the law itself. (The character and perversities of the law of war are discussed in greater detail in the next chapter.) The refinement of collateral damage as a legal, and therefore doctrinal, element at a time when US air capabilities were exceedingly blunt helped reconcile the gap between the intent and the effects of the American way of war.

Vietnam: Constrained yet Massive Use of Force

While aerial bombing in Korea was operationally constrained, it nonetheless proved massively harmful to the civilian population. In broad strokes, one could say the same of the US air campaigns in Vietnam.¹³³ The evolution of air campaigns in Vietnam mirrored the increasing intensity and expansion of targeting evinced in Korea. Yet even as the gradualism of Pres. Lyndon B. Johnson’s Operation Rolling Thunder gave way to Pres. Richard Nixon’s more robust Operation Linebacker, the evolution of tactics, targeting processes, and technology made Vietnam markedly different from its predecessors. Careful planning and more precise attack capabilities allowed US forces to limit unintended consequences through its targeting process, rather than having to circumscribe the use of airpower as a strategic capability.

Given Vietnam’s contemporary association with “free-fire zones,” napalm, and the secret bombings of neutral countries, it may seem counterintuitive to ascribe restraint to the air war in Vietnam. Certainly compared to what we expect of US airpower today, or even what the world witnessed during the 1991 Operation Desert Storm, aerial bombing in Vietnam was brutal. However, even if estimates of civilian casualties from the two phases of aerial bombing were low (52,000 killed during Rolling Thunder, 13,000 during Linebacker), they compared favorably to previous air campaigns.¹³⁴ In fact, the conduct of the air war in Vietnam created important precedents for

civilian protection, as indicated by a military backlash against the political constraints on the air war.

The two main phases of strategic bombing of North Vietnam had distinct purposes. The Rolling Thunder campaign (1965–68) sought to incrementally increase damage to Vietnamese industry. While planners conceived it initially to undermine the North's support for the southern Vietcong guerillas, US officials quickly began to suspect that the bombing would not achieve these goals.¹³⁵ The strategy of gradualism allowed the North to remain one step ahead of the bombing by dispersing industry and building up its air defenses.¹³⁶ Nonetheless, bombing continued as a signal of US resolve and a means of pressing Northern leaders to negotiate an end to the conflict.¹³⁷

The United States simultaneously ramped up its ground presence and, by late 1965, pursued a strategy of grinding attrition in the South. Arguing that the North Vietnamese would eventually run out of foot soldiers, Gen William Westmoreland, US Army, focused on finding and defeating the enemy, employing heavy bombers for tactical support.¹³⁸ Ground forces conducted search and destroy missions in which civilians were evacuated from contested territory in order to deny sanctuary to the enemy. Evacuated areas, presumed devoid of friendly civilians, were declared free fire zones in which bombing could occur unimpeded. Military commanders focused on the enemy body count, with unfortunate implications for Vietnamese civilians.¹³⁹ Nevertheless, even while supported by airpower, ground operations failed to deliver results in the South.

In 1972 newly elected President Nixon adopted a strategy of “Vietnamization,” turning the ground war over to South Vietnamese forces. Nixon’s Linebacker I and II air campaigns aimed to compensate for the withdrawal of US ground forces by attacking the North’s conventional military capabilities.¹⁴⁰ Nixon appears to have intended to expand the bombing campaign, and some airpower advocates hail this phase of the air war as more robust and less tightly controlled by civilian authorities—and therefore more palatable from a doctrinal perspective.¹⁴¹ Yet even as target lists and bombing intensity increased, air tactics continued to reflect concern about civilian casualties.¹⁴²

Constraints

The strategies and tactics of the air campaigns in Vietnam were more sensitive to noncombatants than those in prior wars.¹⁴³ This was

primarily a function of strategic concerns about escalation or diplomatic signaling rather than humanitarian sensitivity; President Johnson's central goal was to avoid provoking Russia or China.¹⁴⁴ However, political leaders did filter humanitarian concerns through a political lens. President Nixon in particular was "keenly aware of the domestic political criticism to which he would be subjected if large numbers of civilians were killed."¹⁴⁵ Concern about political fallout appeared distinct from concerns about the morality of aerial bombing, but at this juncture in US history, politics was a conduit for humanitarian concerns.¹⁴⁶

US leaders remained convinced of airpower's ability to undermine civilian morale and coerce adversary leadership, which became especially crucial for negotiating an end to the war. While the United States targeted specific military objectives within populated areas rather than directly attacking the population, debate revolved around the specifics of which military objectives should be targeted and how to carry out the attacks.¹⁴⁷

The air war in Vietnam featured a host of predominantly tactical restrictions in order to minimize civilian harm. Commanders instructed pilots to adjust their tactics even where this might impose additional risks to aircraft and crews.¹⁴⁸ Some restrictions proved just temporary, a function of the gradualism of the Rolling Thunder campaign. For example, political leaders initially imposed limits on bombing in or near populated areas. White House approval was required for bombing within 30 miles of Hanoi—and rarely granted for targets within 10 miles. Some indisputably military targets like surface-to-air missiles in cities remained off limits if they were silent, despite the threat they posed. Pilots could strike these targets only if the enemy were actually firing them.¹⁴⁹ The restrictions left much of North Vietnam's industrial economy and many military supply and lines of communication targets off limits.

By the end of 1967, though, Johnson had lifted many political restrictions, allowing attacks on most industrial and transportation targets in North Vietnamese cities and the new Chinese buffer zone.¹⁵⁰ Robert Pape argues that the damage was nonetheless limited, consistent with the absence of any US intention to kill civilians.¹⁵¹ Yet as in Korea and World War II, seeking to destroy the industrial base had terrible implications for the civilian population.

Still, the frame of collateral damage—and the supporting deliberation that it demanded—required military actors to weigh civilian harm against military advantage in targeting choice. The target ap-

proval process evolved to include estimates of civilian harm, which factored into decision making.¹⁵² While the major concern about noncombatant casualties may have been strategic, casualties nonetheless became a currency in which negative impact was measured. Indeed, Ward Thomas argues that “almost as much weight was given to avoiding civilian casualties as to military effectiveness, and sometimes more.”¹⁵³ Some categories of targets that had been attacked in Korea were permanently placed off-limits—including dikes, despite vivid North Vietnamese propaganda to the contrary. In 1968 Secretary of the Air Force Harold Brown complained about “the present scrupulous concern for collateral civilian damage and casualties.”¹⁵⁴ Guenter Lewy’s detailed study of US rules of engagement (ROE) in Vietnam found that, while the rules respected the distinction between combatants and noncombatants, the ROE were not adequately followed or enforced.¹⁵⁵ Lewy nonetheless credited the USAF with efforts to learn from civilian casualty incidents in theater, adapting instructions as they identified causes of civilian harm.¹⁵⁶

In 1972 the United States resumed strategic bombing with the Linebacker I and II campaigns to halt the North’s conventional offensive and pressure the North Vietnamese to negotiate. While some portray these bombing campaigns as less constrained than Rolling Thunder, this perception may stem largely from bombing’s intense pace, rather than the types of targets or rules governing the attacks.¹⁵⁷ Indeed, additional requirements to use precision-guided munitions in heavily populated areas were added to the Linebacker efforts, and B-52 navigators were instructed to drop bombs only if they were 100 percent sure of the aim point.¹⁵⁸ The bombing’s intensity nonetheless devastated Hanoi and provoked vitriolic press coverage.¹⁵⁹

Judgments

To argue that constraints on the air war were meaningful is not to suggest that airpower was safe for civilians. Although the figures are suspect, the total number of South Vietnamese civilian deaths is believed to be between 195,000 and 430,000, and the number of North Vietnamese is 65,000.¹⁶⁰ Estimates place the casualties caused by the Rolling Thunder air campaign alone at 52,000 over three years and the subsequent Linebacker campaigns at approximately 13,000.¹⁶¹ These numbers would have been far higher but for North Vietnam’s evacuation of cities and provision of civilian shelters in urban areas.¹⁶²

Constraint coexisted with massive destruction in Vietnam. Robert Pape argued that the relatively low numbers of civilian deaths and the patterns of violence from strategic bombing clearly indicate US restraint in its use of airpower.¹⁶³ However, Guenter Lewy concluded that the style of US warfare remained simply too destructive to support the more restrictive ROEs. “Even if these rules had been applied more firmly,” he wrote, “there can be little doubt that the American reliance on heavy weapons and the lavish use of firepower would have exacted a heavy toll in [civilian] lives.”¹⁶⁴

The overall US strategy of attrition, coupled with reliance upon airpower to deliver political results that the ground war failed to produce, ensured massive destruction and civilian loss of life. More pointedly, the sheer scale of firepower applied—US aircraft dropped more than the 2.7 million tons of bombs that Allied forces had expended during World War II—virtually guaranteed significant civilian deaths from airpower, whether from strategic bombing or close air support.¹⁶⁵ Moreover, despite the use of precision weapons toward the end of the war, munitions like napalm and Agent Orange caused sensational forms of civilian harm.

Airpower’s dualism of constraint and destruction was reflected in the antiwar movement’s rhetoric and the frustration of the US security establishment. Airpower first came under significant criticism in 1966, when the cloak of reassuring US rhetoric was pierced by *New York Times* correspondent Harrison Salisbury’s first-person description of bombing’s effects on Hanoi.¹⁶⁶ The nature and extent of airpower’s impact remained in dispute throughout the war, but the antiwar movement harnessed impressions of airpower’s devastation to a broader critique of US engagement in Vietnam. Bernard Fall described the use of US airpower as unrestrained, deeming this the most fateful decision of the war.¹⁶⁷

Even as war protesters criticized US war fighting, the USAF remained frustrated by the limits it experienced. The political Left’s portrayals of airpower as an indiscriminate cause of civilian deaths clashed with the views of many Airmen and military personnel who repeatedly sought to have bombing constraints lifted. The perception that bombing was being constrained to the point of ineffectiveness suggests that the constraints on air operations in Vietnam were meaningful, even as the overall strategy made significant civilian harm inevitable.

From the humanitarian perspective, US strategic bombing in Vietnam represented progress. The dominant political logic was no longer an effort to justify area bombing, as had been the case in World War II and Korea. The military faced more restrictive “red lines”—formally factored in civilian casualties when planning attacks—and was under instruction to adopt precautions to minimize civilian harm. These measures yielded imperfect results, but they were meaningful steps toward greater considerations of the civilian in war.

Backlash

America’s loss in Vietnam soured many Americans on the concept of constrained military activity. Leaders in military and conservative circles condemned what they deemed the “half-hearted” application of force doomed by political niceties. Vietnam prompted a political backlash regarding how leaders should use force, rekindling an idealized American vision of unrestrained military power. As a result, consideration of the foreign civilian—and the associated constraints on the use of force—was largely absent from the post-Vietnam political discourse about war.

The preferred alternative approach was to fight “wholeheartedly” with the “clear intention of winning”—a view encapsulated in what ultimately became known as the Weinberger-Powell doctrine.¹⁶⁸ First articulated in 1984 by Secretary of Defense Casper Weinberger, the doctrine was expanded and updated seven years later by Army general Colin Powell.¹⁶⁹ Its logic echoed the views of Helmuth von Moltke, Giulio Douhet, and Billy Mitchell: winning quickly, with overwhelming and decisive force, would be the greatest kindness in war.¹⁷⁰ These tenets remained unofficial and were honored more often in the breach.¹⁷¹ The doctrine functioned more as political slogan than as a meaningful guide to military operations. Yet it underscored the enduring appeal of utilitarianism and helps explain why civilian casualties did not become a prominent concern of the services or of US war-fighting concepts.

Instead, military lawyers assumed stewardship of the civilian on the battlefield. This developed in response to an Army unit’s infamous 1968 murder of hundreds of Vietnamese civilians at My Lai. Although the Army called the event an aberration, the service nonetheless instituted routine training on the LOAC. Lawyers were assigned responsibility for ensuring that troops understood the need to avoid

civilian harm pursuant to the principles of the laws of war. Ironically, this innovation pushed the issue of civilian casualties toward the eddies of military activity rather than into the mainstream. Lawyers, rather than military commanders, “owned” the problem. Highlighting the issue as a legal problem rather than an operational priority effectively marginalized the concern.¹⁷²

At the operational level, whatever lessons had been learned in Vietnam with respect to minimizing noncombatant casualties were swept into the dustbin along with counterinsurgency (COIN) doctrine. The US military chose to focus instead on a total war scenario in which it did not need to worry about constraints on the use of force. The USAF adapted its conventional long-range strike capability for its role in the more fully integrated ground-air operations envisioned by AirLand Battle doctrine.¹⁷³

The military’s focus on total war with the Soviet Union further explains why military awareness of collateral damage receded into the shadows after the Vietnam War. During the 1980s, NATO concentrated on the defense of Europe, seeking to build conventional capabilities and doctrine to hold off numerically superior Warsaw Pact forces. While a war in Europe would have devastated civilian populations, the United States believed the defending government had primary responsibility for protecting its own civilians.¹⁷⁴ Minimizing civilian harm was a luxury that the United States could ill afford as it struggled to keep a conventional conflict from escalating to nuclear war. The United States remained committed to the LOAC, but there is little evidence that the United States considered preventing civilian harm an operational aspect of war for which it should plan.

From Destruction toward Effects

In the 1990s the USAF became more responsive to the operational demands of minimizing civilian harm, a process traced in later chapters. USAF adaptation was partly a function of the external environment—principally the changing norm described in chapter 1. The longstanding tenets of airpower also facilitated this adaptation, and the modern realization of two factors in particular—precision and strategic effects—proved critical.

While the application of airpower principles has constantly evolved, the core principles of airpower have remained constant. Aircraft offer enormous operational responsiveness in a wide range of roles: strategic bombing, close air support, intelligence gathering, transporting forces and equipment, and fighting adversary aircraft.¹⁷⁵ Compared to ground forces, airpower enjoys comparative advantages in flexibility, speed, and reach.¹⁷⁶

Airpower's ability to play a role independent of land power is another article of faith within the community.¹⁷⁷ However, application of airpower is considered an art, and Airmen are convinced that only they fully appreciate airpower's full comparative advantages.¹⁷⁸ Effective use of airpower is believed to require centralized command, even in operations such as COIN, which are doctrinally decentralized and in which tactical uses of airpower fall under the ground commander's control.¹⁷⁹

Perhaps the central tenet of "airmindedness," though, is the belief that airpower offers a unique ability to achieve strategic impact. The promise of efficiently delivering decisive strategic results remains the heart of airpower's appeal, and precision further enhances the value of strategic bombing. Although the actual ability to apply force with precision has varied greatly, the tenet of precision has been a constant feature of US airpower.

The USAF's current ability to minimize civilian casualties stems in large part from capabilities and ideas that were only just emerging in the 1980s. Two developments in particular—true precision and effects-based operational thinking—paved the way for reducing civilian harm, as future operations confirmed that constraints on airpower had become an enduring fixture of the American way of war.

Precision

While modern observers associate precision with "smart weapons," these are only one manifestation of airpower's longstanding quest for precision. Many factors shape the ability to bomb with accuracy. The way that targets are defined; the intelligence supporting the targeting process; and the tactics, techniques, and procedures of delivering weapons also shape an air crew's ability to deliver a bomb on target. Faith in the transformative impact of the Norden bombsight illustrates the varied routes toward enhancing precision. The earliest

“breakthroughs” also underscore how the operative definition of precision is relative and has changed dramatically over time.¹⁸⁰

The overarching motivation for precision was, and remains, efficiency—the ability to achieve desired results with less effort or expenditure of resources. Precision epitomizes the economy of force, because less can achieve more. By exponentially increasing the destructive power of munitions, precision allowed more bombs to be loaded onto the same platform—vastly increasing the potential lethal effects of each sortie. As the Defense Science Board explained, “A ton of PGMs [precision-guided munitions] typically replaced 12–20 tons of unguided munitions on a tonnage per target kill basis.”¹⁸¹ Precision also expanded airpower’s flexibility because even smaller targets could be struck with greater confidence that targets would be destroyed as intended and that fewer surrounding objects or people would be harmed in the process.

Thus, precision offers many additional advantages beyond efficiency. It increases airpower’s flexibility as a tool of military power, justifies new weapons systems, better protects pilots (by requiring fewer sorties and allowing weapons release at greater standoff distances), achieves a wider range of strategic effects, and reduces civilian casualties. Precision thereby advanced other institutional objectives as well, such as making airpower a more appealing tool of choice for national command authorities.¹⁸² Moreover, because precision provides greater military control over the level of destruction levied on the battlefield, precision thereby reduces the need for civilian authorities to restrict commanders’ freedom of action in order to control political or strategic effects. Lt Gen David Deptula, USAF, retired, observes that from a commander’s perspective, precision “can enable you to act without restrictions.”¹⁸³

The USAF first began using guided bomb units (GBU) toward the end of the Vietnam War. Precision laser-guided and electro-optically guided munitions allowed Airmen to protect themselves better in the face of more restrictive ROEs, and these new munitions’ dramatically improved accuracy enabled the USAF to conduct strikes that had previously been prohibited. The history of US efforts to destroy North Vietnam’s Thanh Hoa bridge illustrates the dramatic impact of precision. Prior to the use of GBUs, US Airmen had flown 873 air sorties and lost 11 aircraft to heavy air defenses protecting the bridge.¹⁸⁴ In May 1972 the USAF successfully employed laser-guided weapons against seven bridges, including Thanh Hoa.¹⁸⁵ During the Vietnam

War, precision weapons were hailed as a force protection capability and means of achieving greater operational freedom.¹⁸⁶

In the following decades, “the U.S. Air Force was slow to address the doctrinal implications of this new level of bombing accuracy.”¹⁸⁷ The service failed initially to capitalize on the new technology, declining to equip the bulk of its new combat aircraft with GBU delivery capability.¹⁸⁸ Thankfully, the USAF did continue pushing the munitions technology itself, improving guidance systems and shape (collapsing fins for easier storage) to further capitalize on accuracy and efficiency in delivery. Improving technologies for intelligence, surveillance, and reconnaissance also helped airpower achieve desired effects with less physical damage.

Enhanced precision was not directed toward minimizing the application of violence. Greater precision was fully consistent with the US objective of bringing maximum conventional force to bear against its primary strategic rival. “The only reason we had developed bigger bombs was to compensate for inaccuracy in delivery,” Lieutenant General Deptula explained.¹⁸⁹ Greater precision actually increased the lethality of US airpower—such that it became more plausible to imagine an effective conventional response to a Soviet attack against Western Europe. Still the conventional underdog in that prospective contest, NATO remained concerned about maximizing its destructive power against Warsaw Pact forces. This might help explain why precision’s full benefits were not fully realized during the Cold War. By mid-1980 GBUs had gained autopilot, a laser scanner, and greater maneuverability. A few years later, the USAF developed a hard-target penetrating PGM, the BLU-109B or 2,000-pound bomb, a combination of “awesome lethality, overwhelming leverage, and surgical precision.”¹⁹⁰ Yet as late as 1990, only a small number of USAF aircraft were equipped to carry PGMs.¹⁹¹

While precision was not born of concern for civilian protection, it nonetheless enabled development of a new approach to targeting that had important implications for civilians caught in conflict. These new capabilities allowed planners to focus on achieving specific effects rather than maximizing destruction, which would in turn reshape airpower strategies.

Effects-Based Targeting

Disputes about how best to achieve game-changing impact from strategic aerial bombing remained a central intellectual preoccupation of airpower advocates, and strategic bombing to affect enemy morale continued to hold great allure, despite controversy about its record.¹⁹² Theorists and planners have had competing views about the value of industrial targeting, morale targeting, and counterforce targeting.¹⁹³ In the 1980s precision began to change the contours of their debate.

During the 1980s a group of young Airmen, led by Col John Warden III, was tasked with helping envision the USAF's role as a decisive strategic force.¹⁹⁴ Their thinking harkened back to early industrial web theories, but Warden contributed a particular approach to targeting and sought to make attacks faster, synergistic, and more efficient.¹⁹⁵

Warden began with careful assessment of the enemy's sources of strength, judging fielded military forces to comprise the outer ring of adversary power, while enemy leadership was the innermost ring—the most important center of gravity. While he acknowledged Carl von Clausewitz's point that the civilian population was also a center of gravity, Warden specifically ruled out attacks on the population.¹⁹⁶ Given the growing prominence of international law—the 1977 Additional Protocols to the Geneva Conventions had strengthened civilian protection—and the human rights movement, no serious strategist could contemplate doing otherwise.

Warden sought to harness precision and economy of force principles to targeting strategies. His strategies would reject destruction in lieu of focusing on effects. The result would be more selective use of force and reduced collateral damage—including civilian harm. This thinking permeated different iterations of the air campaign plans for 1991 Operation Desert Storm.¹⁹⁷

The USAF eventually embraced many elements of this approach, dubbed effects-based operations (EBO).¹⁹⁸ Still considered an “emerging arena” as late as 2003, EBO theorizes that attacking specific links, nodes, or objects can achieve desired outcomes—though such attacks may sometimes require coordination with other attacks. Effects-based actions or operations are those designed to produce distinct effects while avoiding unintended or undesired effects. This conceptual model requires that Airmen think through the full range of first-

and second-degree outcomes, choose those that will best achieve objectives, and find ways to mitigate those that will impede achieving them.¹⁹⁹

An effects-based approach articulates tactics to achieve national objectives.²⁰⁰ EBO is driven by the desired effects (e.g., to ensure that enemy forces do not enter the city) rather than a task-based or target-based approach (e.g., to destroy all enemy forces). “You think about your objectives and you work backwards,” Lieutenant General Deptula explained. “It’s a completely different answer than that of annihilation or attrition. The best result of course is to get your adversary to act in accordance with your goals without really knowing that that’s what he’s doing.”²⁰¹

Reflecting the premise that “the ultimate aim in war is not just to overthrow the enemy’s military power, but to compel them to do one’s will,” the Air Force sees effects-based targeting as a more direct and less destructive route to achieving such political outcomes.²⁰² Less destruction seems unequivocally good, yet EBO also invites a shift away from attacking traditional military targets, raising a different set of concerns about the nature of targets that can be attacked.²⁰³ When the targets are traditionally military targets, the benefits of an EBO approach are evident. Instead of physically destroying an entire electrical grid, planners might destroy or even just disable a few key nodes, nonetheless rendering the relevant part of the system inoperative.

Seemingly validated by the US-led coalition’s 1991 victory in Iraq, EBO gradually became the dominant framework for USAF thinking about air operations.²⁰⁴ It was consistent with the Weinberger-Powell doctrine in that it sought decisive impact at the outset (i.e., it was not gradualism). Swift and overwhelming attack on strategic targets would enable victory.²⁰⁵ However, EBO differed from the traditional American approach of annihilation and overwhelming firepower because it focused on effects—not destruction per se. In this respect, EBO had great potential to enhance civilian protection.

The transition from destruction to effects as a focus of US aerial bombing reflected the synergistic evolution of the USAF’s belief in precision and its emphasis on strategic effects. This combination explains why strategic bombing in the twenty-first century looks nothing like the bombing of Tokyo and only faintly echoes Linebacker II. The United States still has the capacity to create indiscriminate damage, but this is no longer how the country chooses to use its power. US aerial bombing today focuses not on maximizing

destruction but instead on precisely attacking targets selected to achieve particular effects while minimizing civilian harm.

Conclusion

The conventional view of aerial bombing in 1948 was very straightforward: “The purpose of bombing is damage.”²⁰⁶ During the Vietnam War, the damage was constrained, but destruction remained the objective of airpower. After Vietnam, advances in precision made it possible to envision new purposes for bombing. Today, the USAF notes that destruction through attrition is “rarely the key objective in modern war” and touts airpower’s ability to offer to contribute to precise, coordinated power that forces enemies to comply with US national will.²⁰⁷

Douhet and Mitchell had once envisioned the strategic bombing of populations as the key for undermining morale and ending wars quickly. Doctrinally, the USAF rejected the notion of directly targeting civilians, preferring to bomb industry, infrastructure, and other specific targets—even when located within cities. However, the limits of technology through World War II and Korea deprived the US “precision bombing doctrine” of practical meaning.

A willful focus on military intentions (rather than judging their operational effects) was America’s way of reconciling the most morally problematic aspects of US military power. Even as the United States adopted the framing of collateral damage, factoring in civilian casualties as effects, the emphasis upon intent remained strong. Collateral damage was defined in terms of the LOAC, suggesting that compliance with law was the proper standard for judging civilian casualties.

It followed, then, that if good intentions exonerated actions and if collateral damage were lawful, civilian casualties were not a pressing problem to solve. There was little incentive to take additional action—such as adjusting operational practices or developing new capabilities—to reduce civilian harm. Throughout the Cold War, US military doctrine made virtually no mention—other than noting the laws of war—regarding how to plan, organize, train, or equip forces to avoid harming civilians during military operations.²⁰⁸

Nevertheless, toward the end of the Cold War, precision and EBO suggested a different route to ameliorate longstanding tensions

between the public goals of strategic bombing and the actual effects of US air campaigns. Precision and effects-based operational thinking might allow reduced civilian harm. Indeed, these tools prepared the USAF to respond when operational constraints on airpower resurfaced during the 1990s—this time specifically because of sensitivity to civilian deaths. The story of USAF adaptation picks up in chapter 4, after a detour into international law.

In chapter 3, I revisit the issue of standards of performance for the USAF regarding civilian protection. I explore the difference between the norm—expectations regarding civilian protection—and the standards of the LOAC. The military and the humanitarian communities approach these issues from competing perspectives. They see the law in different lights and sometimes confuse the requirements of law and higher normative expectations regarding minimizing civilian harm. Their differences help explain why outsiders criticize actions that the US military deems consistent with ROE and international law and why the military's legal defense of civilian casualties is unlikely to satisfy critics.

Notes

1. According to Dr. Antulio J. Echeverria, currently of the Strategic Studies Institute and a retired USAF lieutenant colonel, the term refers to “fundamental ideas and expectations, albeit modified in practice, that the U.S. military profession and U.S. political leadership have, or have had, about war, and their respective roles in it. These ideas and expectations, in turn, contribute to the assumptions that inform political and military decision makers in matters of strategic planning, budgeting, and concept and doctrine development.” Antulio J. Echeverria, *Toward an American Way of War* (Carlisle, PA: Strategic Studies Institute, US Army War College, 2004), 1.

2. Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1977). The approach was captured in the Vietnam War-era slogan “Expend shells not men.” For more information, see Guenter Lewy, *America in Vietnam* (New York: Oxford University Press, 1978), 268. Contemporary analysts have updated this theme by describing “new” American ways of war that depart from overwhelming force and utilitarianism but continue to focus on technology and information while minimizing exposure of US service members. For more information, see Ronald R. Fogleman, USAF Chief of Staff, “Air Power and the American Way of War” (paper presented at the Air Force Association Air Warfare Symposium, Orlando, FL, 15 February 1996); and Max Boot, “The New American Way of War,” *Foreign Affairs* 82, no. 4 (July/August 2003): 42–4. At the same time, Boot and others have chronicled competing parallel histories of US engagement in small wars that emphasize the human element. Max

Boot, *The Savage Wars of Peace* (New York: Basic Books, 2002); and Brian McAllister Linn, *The Echo of Battle* (Cambridge, MA: Harvard University Press, 2007).

3. Some refer to this as exceptionalism. See, for example, Michael Ignatieff, ed., *American Exceptionalism* (Princeton, NJ: Princeton University Press, 2005); Charles Lockhart, *The Roots of American Exceptionalism: History, Institutions, and Culture* (New York: Palgrave Macmillan, 2003); Seymour Martin Lipset, *American Exceptionalism: A Double-Edged Sword* (New York: W. W. Norton and Company, 1997); and Walter Russell Mead, *Special Providence: American Foreign Policy and How It Changed the World* (New York: Knopf, 2001). During the 1991 Persian Gulf War, President Bush and others reiterated that the United States was “doing everything possible” to minimize casualties and to avoid civilian sites, “despite the fact that Saddam is now relocating some military functions . . . in civilian areas such as schools.” Johanna Neuman, “Saddam Keeps Focus on Civilian Toll,” *USA Today*, 7 February 1991.

4. Conrad C. Crane, *Bombs, Cities, and Civilians: American Airpower Strategy in World War II* (Lawrence: University Press of Kansas, 1993), 14. Crane cites a captured zeppelin commander who insisted that Germany had not “set out to kill women and children. We have higher military aims. . . . Such things happen accidentally in war.”

5. Ward Thomas, *The Ethics of Destruction: Norms and Force in International Relations* (Ithaca, NY: Cornell University Press, 2001), 106.

6. Phillip S. Meilinger, “Air War and Humanitarian Concerns” (working paper, Humanitarian Challenges in Military Intervention Workshop, Project on the Means of Intervention, Carr Center for Human Rights Policy, Harvard Kennedy School, Washington, DC, 29–30 November 2001), 42; and Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 264. See also Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (New York: Coward-McCann, 1942).

7. Quoted in Jefferson D. Reynolds, “Collateral Damage on the 21st Century Battlefield: Enemy Exploitation of the Law of Armed Conflict, and the Struggle for a Moral High Ground,” *Air Force Law Review* 56 (2005), 11.

8. The related argument that overwhelming destruction offers the most humane approach to war by ending it swiftly or deterring it altogether has been continuously recycled, emerging in subtler form in the contemporary debate.

9. Reynolds, “Collateral Damage on the 21st Century Battlefield,” 11.

10. Jan C. Smuts, *The Second Report of the Prime Minister’s Committee on Air Organisation and Home Defence against Air Raids*, 17 August 1917.

11. The subsequent head of British air operations, Sir Hugh Trenchard, believed that “the moral effect of bombing stands undoubtedly to the material effect in a proportion of 20 to 1.” See Hugh Trenchard, dispatch, 1 January 1919, reprinted in H. A. Jones, *The War in the Air*, vol. 6, *Being the Story of the Part Played in the Great War by the Royal Air Force* (Oxford, UK: Clarendon Press, 1937), 136.

12. The British air force was the first “to put the Douhet model into practice.” Pape explores why Douhet-style thinking resonated in Great Britain. Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996), 60–2.

13. The persistence of this view, in the face of so much historical evidence to the contrary, remains puzzling. See the critique of morale targeting claims in Pape, *Bombing to Win*. For the United States, precision munitions allow strategic targeting

that undermines morale without widespread civilian deaths. Such strategic targeting nonetheless threatens to undermine legal distinctions between civilian and military targets. This issue is explored in chapter 3.

14. Mitchell's ideas grew closer to Douhet's in the 1930s; both men faced official sanction for their unorthodox views of airpower. Crane, *Bombs, Cities, and Civilians*, 15–18.

15. Alfred F. Hurley, *Billy Mitchell: Crusader for Air Power* (Bloomington: Indiana University Press, 1975), 93.

16. After World War II, his arguments would be used to help liberate airpower from its home within the Army and create an independent USAF.

17. Stephen L. McFarland, *America's Pursuit of Precision Bombing, 1910–1945* (Tuscaloosa: University of Alabama Press), 81.

18. Both Pres. Woodrow Wilson and Secretary of War Newton Baker were critical of British actions. Thomas, *Ethics of Destruction*, 112.

19. McFarland, *America's Pursuit of Precision Bombing*, 81.

20. Previously, the 1899 Hague Convention had temporarily banned launching projectiles and explosives from balloons (the reigning technology of the time) or other methods. The 1907 Hague Conference sought to extend the ban, but the advent of airpower left key states (Germany, France, and Italy) unwilling to do so. Tami Davis Biddle, "Air Power," in *The Laws of War: Constraints on Warfare in the Western World*, ed. Michael Howard, George J. Andreopoulos, and Mark R. Shulman (New Haven, CT: Yale University Press, 1994), 141–2.

21. Adam Roberts and Richard Guelff, *Documents on the Laws of War*, 3rd ed. (Oxford: Oxford University Press, 2000), 139–53.

22. Biddle calls the effort "a legal and political failure." Biddle, "Air Power," 148.

23. Ronald Schaffer describes Army Air Force leaders, courting popular opinion in their efforts to create an independent air force, as seeking "to convince the public that AAF bombing methods did not violate ethical principles widely held at home." Ronald Schaffer, *Wings of Judgment* (New York: Oxford University Press, 1985), 37.

24. Pape, *Bombing to Win*, 65–6.

25. *Ibid.*, 66; and McFarland, *America's Pursuit of Precision Bombing*, 82.

26. Henry H. Arnold and Ira C. Eaker, *Winged Warfare* (New York: Harpers & Brothers, 1941), 134.

27. McFarland suggests that the "traditional American reverence for marksmanship" also supported distinction in US airpower. McFarland, *America's Pursuit of Precision Bombing*, 82.

28. Tami Davis Biddle, *Rhetoric and Reality in Air Warfare* (Princeton, NJ: Princeton University Press, 2002), 143–4.

29. *Ibid.*, 161; and Robert T. Finney, *History of the Air Corps Tactical School: 1920–1940* (Maxwell AFB, AL: USAF Historical Division, Air University Press; Washington, DC: Center for Air Force History, 1998), 33, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA432954>. Citations are from the Center for Air Force History edition.

30. Essentially an analog computer, the Norden Mark 15 bombsight allowed pilots to calculate a weapon's trajectory, greatly increasing the accuracy of bombing. The Navy initially developed the technology, declining to share it with the Army Air Force. In practice, its impact was less revolutionary than anticipated. Maurer Maurer,

Aviation in the U.S. Army, 1919–1939 (Washington, DC: United States Air Force, 1987), 387–88.

31. For overviews of this process, see Michael S. Sherry, *Rise of American Airpower* (New Haven, CT: Yale University Press, 1987).

32. McFarland, *America's Pursuit of Precision Bombing*, 91–92; and Pape, *Bombing to Win*, 62.

33. Biddle, *Rhetoric and Reality in Air Warfare*, 141. The British had developed their own version of industrial fabric theory—from which the ACTS school borrowed—but Hugh Trenchard, the “father” of the RAF, preferred to focus on morale effects (which required less precision). McFarland, *America's Pursuit of Precision Bombing*, 79.

34. Pape, *Bombing to Win*, 62.

35. “The [US] planners speculated that civilians would suffer from these attacks and that bombing would undermine civilian morale, but the mass killing of non-combatants would not be a direct aim of the precision attacks.” Sahr Conway-Lanz, *Collateral Damage* (New York: Routledge, 2006), 10.

36. William W. Ralph, “Improvised Destruction: Arnold, LeMay, and the Firebombing of Japan,” *War in History* 13, no. 4 (2006), 498.

37. Franklin D. Roosevelt, “Appeal to Russia and Finland to Stop Bombing Civilians,” 1 December 1939, online in *American Presidency Project*, ed. Gerhard Peters and John T. Woolley, <http://www.presidency.ucsb.edu/ws/?pid=15845>. Conrad Crane calls Roosevelt's plea “largely a political ploy” and documents the president's more complicated personal views on morale bombing. Crane, *Bombs, Cities, and Civilians*, 32.

38. Roosevelt, “Appeal to Russia and Finland.”

39. For a thorough history, see Schaffer, *Wings of Judgment*.

40. Nonetheless, the United States developed a contingency plan for striking residential areas in order to conclude the war quickly. The ACTS had taught that attacking capitals and centers of population remained a possibility, governed by political considerations. Biddle, “Air Power,” 150–1.

41. The RAF abandoned daytime precision raids after determining that they were “terribly costly and not very effective.” Schaffer, *Wings of Judgment*, 36.

42. Charles Webster and Noble Frankland, *The Strategic Air War against Germany 1939–1945*, vol. 4, *Annexes and Appendices* (London, UK: H. M. Stationery Office, 1961), 143–8.

43. Thomas, *Ethics of Destruction*, 112.

44. Phillip S. Meilinger, “Airpower and Collateral Damage: Theory, Practice and Prospects,” draft chapter in *The Perfect War* (forthcoming), 9, <http://www.ausairpower.net/APA-EMEAC-2013-02.html>.

45. Schaffer, *Wings of Judgment*, 37.

46. Michael Sherry suggests that operational realities are also used as rationalization by allied forces. Sherry, *Rise of American Power*, 173–6.

47. Debate persists regarding when civilian personnel working in particular capacities are legitimate targets and when they retain their protected status as civilians, solely factored into proportionality analysis for attacks on military objectives. I further discuss the debate regarding which activities constitute direct participation in hostilities and which facilities or objects qualify as military objectives in chapter 3.

48. “Norden M-9 Bombsight Printable Fact Sheet,” National Museum of the US Air Force, 16 August 2010, <http://www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=8056>.

49. Richard G. Davis, “American Bombardment Policy against Germany, 1942–1945,” *Royal Air Force Air Power Review* 6, no. 3 (Autumn 2003), 49–62. Davis argues that air records reveal a more extensive practice of American city area bombing than traditionally understood (see 59, n. 17).

50. Jefferson D. Reynolds, “Collateral Damage on the 21st Century Battlefield,” 11.

51. Department of War, *US Strategic Bombing Survey (USSBS)*, vol. 2, *Over-All Report (European War)* (Washington, DC: Government Printing Office, 1945), 72, <http://babel.hathitrust.org/cgi/pt?id=mdp.39015049492716>.

52. Richard Davis argues that the Americans and British distinguished their level of effort to avoid civilian harm depending upon the nationality of the civilians. “American Bombardment Policy,” 58.

53. Biddle, *Rhetoric and Reality in Air Warfare*, 228–9.

54. These included Berlin, Magdeburg, Chemnitz, Leipzig, and Dresden.

55. Directives noted the need to “cause great confusion in civilian evacuation from the East and hamper [military] reinforcements” or, as Biddle summarizes, to use civilian refugees as a tool against the German army. Tami Davis Biddle, “Dresden 1945: Reality, History, and Memory,” *Journal of Military History* 72, no. 2 (April 2008), 431.

56. McFarland, *America’s Pursuit of Precision Bombing*, 184.

57. I would like to thank Tami Davis Biddle for emphasizing this point. For example, see Biddle, “Dresden 1945,” 434.

58. Among the February raids, Dresden ranked only 10th in the percentage use of incendiaries compared to high explosives, and this raid caused fewer civilian deaths than the bombing of Hamburg in July 1943. *Ibid.*, 414.

59. Crane, *Bombs, Cities, and Civilians*, 114. More were believed killed in the Hamburg raid.

60. British Prime Minister Winston Churchill asked whether the bombing should continue and implied that it aimed solely to increase terror, thereby angering British air force leaders, whom he had urged to undertake the raids. Churchill note of 28 March 1945, reprinted in Charles Webster and Noble Frankland, *The Strategic Air Offensive against Germany, 1939–1945*, vol. 3, *Victory* (London, UK: H. M. Stationery Office, 1961), 112. A concerned US Secretary of War Henry Stimson requested an investigation of the raids, frustrating Lt Gen Henry H. Arnold, commanding general of the US Army Air Corps, who warned against going “soft.” Stimson dropped the issue after being reassured that Dresden was an important communications center. “Report of Air Attacks on Targets in Dresden,” File 519.523-6, Air Force Historical Research Center of the United States Air Force, Air University, Maxwell Air Force Base, AL, March 1945 (hereinafter AFHRC). Nonetheless, new US press policy instructed spokespersons to specify military targets in future raids that were aimed at city centers. Biddle, *Rhetoric and Reality in Air Warfare*, 259.

61. Ralph, “Improvised Destruction,” 512.

62. Department of War, *US Strategic Bombing Survey (USSBS)*, *Field Report Covering Air Raid Protection and Allied Subjects in Tokyo, Japan* (Washington, DC: Civilian Defense Division, 1947), 63.

63. Ralph, "Improvised Destruction," 513.

64. LeMay stated, "All you had to do was visit one of those targets after we'd roasted it, and see the ruins of a multitude of tiny houses, with a drill press sticking up through the wreckage of every home." Quoted in Lynn Eden, *Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation* (Ithaca, NY: Cornell University Press, 2004), 47, n.18.

65. Ibid.

66. Curtis Emerson LeMay and MacKinley Kantor, *Mission with LeMay: My Story* (New York: Doubleday, 1965), 383–4.

67. Only Secretary of War Henry Stimson evinced concern, although the USAAF reassured him that it was doing the best it could to reduce civilian damage. Conrad, *Bombs, Cities, and Civilians*, 134–5.

68. "Analysis of Incendiary Phase of Operations," in AFHRC, 6.

69. Some observers have challenged the claims of military necessity, particularly given the overall trajectory of the war. See, for example, the argument of moral philosopher Michael Walzer in *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (New York: Basic Books, 2000), 255–63.

70. Biddle, *Rhetoric and Reality in Air Warfare*, 245.

71. Thomas, *Ethics of Destruction*, 134. Nonetheless, the USAAF still sought to "maintain its image as a 'precision' or 'pin point' force" through comparisons to the RAF. Biddle, *Rhetoric and Reality in Air Warfare*, 258. In the summer of 1944, RAF bombers attacked specific targets in preparation for the D-day landings. W. Hays Parks, "'Precision' and 'Area' Bombing: Who Did Which, and When?," *Journal of Strategic Studies* 18, no. 1 (1995), 147–51.

72. Conway-Lanz, *Collateral Damage*, 12.

73. Harry S. Truman, "97. Radio Report to the American People on the Potsdam Conference" (Public Papers of the Presidents, Harry S. Truman Library and Museum, Independence, MO, 9 August 1945), <http://www.trumanlibrary.org/publicpapers/?pid=104>.

74. Indeed, polling suggested that most Americans approved of the strategic bombing campaigns. For more information, see George E. Hopkins, "Bombing and the American Conscience during World War II," *Historian* 28, no. 3 (1966): 451–73. Most media was silent or supportive. Alternative sources of information might have tempered American views, but the contrast between apparent wartime support and a critical interwar view of bombing was stark. Some observers have noted additional differences in US perspectives toward European versus Japanese civilians and combatants. Biddle, *Rhetoric and Reality in Air Warfare*, 270; and Crane, *Bombs, Cities, and Civilians*, 120–1.

75. Historian Sahr Conway-Lanz has exhaustively documented the decade-long debate that ultimately produced what he calls the "reinterpretation" of noncombatant immunity. Conway-Lanz, *Collateral Damage*, 2.

76. David E. Lilienthal, *The Journals of David E. Lilienthal*, vol. 2, *The Atomic Energy Years, 1945–1950* (New York: Harper & Row, 1964), 271.

77. Lewis Mumford, "Atom Bomb: Miracle or Catastrophe?," *Air Affairs* 2, no. 3 (July 1948): 326–45; and A. J. Muste, *Not by Might: Christianity, the Way to Human Decency* (New York: Harper, 1947), 5–7, 15–17, 149–50.

78. The term "strategic" is used primarily to differentiate attacks from those aimed directly at an adversary's military forces. For example, Michael Sherry defines

“strategic” air war as an attack on “an enemy’s capacity and will to sustain military operations, rather than on those operations.” Sherry, *Rise of American Power*, 12n. According to Robert Pape, strategic attacks aim to force enemy capitulation without destroying enemy forces or occupying terrain. Pape, *Bombing to Win*, 321.

79. Arthur W. Radford, commander of the Pacific Fleet, warned that mass area bombings of urban areas were “politically and economically senseless” and questioned whether Americans would support such a strategy. Strategic air warfare, Rear Adm Ralph A. Ofstie testified, “is militarily unsound and of limited effect, is morally wrong, and is decidedly harmful to the stability of a postwar world.” House Committee on Armed Services, *The National Defense Program – Unification and Strategy: Hearings* 81st Congress, 1st sess., 1949. The Navy’s view evolved after the service acquired a strategic capability.

80. Omar N. Bradley, *The Collected Writings of General Omar N. Bradley*, vol. 4, *Testimony, 1946–1949* (Washington, DC: Government Printing Office, 1967), 17.

81. Conway-Lanz, *Collateral Damage*, 43, 76–7.

82. For an overview of US nuclear strategy, see David Rosenberg, “The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960,” *International Security* 7, no. 4 (Spring 1983): 3–71.

83. Conway-Lanz, *Collateral Damage*, 79.

84. David 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, CT: Yale University Press, 1994), 169. Rosenberg points out that “full execution of the 1961 Single Integrated Operational Plan (SIOP) would have killed 285 million people in the Soviet Union and People’s Republic of China.”

85. Conway-Lanz, *Collateral Damage*, 79.

86. *Ibid.*, 78.

87. Rosenberg, “Overkill,” 64–69.

88. Conway-Lanz, *Collateral Damage*, 20.

89. *Ibid.*

90. Conrad C. Crane, *American Airpower Strategy in Korea, 1950–1953* (Lawrence: University Press of Kansas, 2000), 9.

91. *Ibid.*; and Charles Hanley, Sang-Hun Choe, and Martha Mendoza, *The Bridge at No Gun Ri: A Hidden Nightmare from the Korean War* (New York: Henry Holt, 2001).

92. Gen Douglas A. MacArthur was willing to accept collateral damage as a result of striking military targets but interpreted Truman’s guidance as forbidding the firebombing initially proposed by Maj Gen Emmet “Rosy” O’Donnell. Conrad Crane, “Raiding the Beggar’s Pantry: The Search for Airpower Strategy in the Korean War,” *Journal of Military History* 63, no. 4 (October 1999), 889.

93. According to Conway-Lanz, these rules “provided some real protection for Korean noncombatants.” Conway-Lanz, *Collateral Damage*, 92.

94. See Crane, *American Airpower Strategy*; and John Tirman, *The Deaths of Others: The Fate of Civilians in America’s Wars* (New York: Oxford University Press, 2011).

95. Charles J. Hanley and Martha Mendoza, “‘Shoot Refugees’ Letter Went Undisclosed,” *USA Today*, 13 April 2007, http://usatoday30.usatoday.com/news/world/2007-04-13-korea-refugees_n.htm.

96. In addition to concerns about precision bombing, US officials emphasized efforts to warn Korean civilians by dropping leaflets and plans for relief and reconstruction of the country.

97. Hanley, *No Gun Ri*, 162.

98. Col Turner C. Rogers, operations chief, Fifth Air Force, to Maj Gen Earle E. Partridge, commander, Fifth Air Force, memorandum, 25 July 1950. Rogers observed that the actions might cause embarrassment and that the Army should be able to develop alternatives to air bombardment. He recommended that the USAF cease cooperation, but such attacks continued.

99. Hanley, *No Gun Ri*, 275. Intrepid reporting finally made it to the Associated Press worldwide news wires on September 29, prompting an official US Army investigation of the incident.

100. Tirman, *Deaths of Others*, 288.

101. Thomas, *Ethics of Destruction*, 149.

102. Crane, *Korea*, 42–6.

103. Sahr Conway-Lanz, “The Ethics of Bombing Civilians after World War II: The Persistence of Norms against Targeting Civilians in the Korean War,” *Asia-Pacific Journal* 12, iss. 37, no. 1, 15 September 2014, http://www.japanfocus.org/-Sahr-Conway_Lanz/4180.

104. Crane, *Korea*, 47.

105. George E. Stratemeyer, *The Three Wars of Lt. Gen. George E. Stratemeyer: His Korean War Diary*, ed. William T. Y’Blood (Washington, DC: Air Force History and Museums Program, 1999), 258. Only the city of Rashin and hydroelectric plants were exempted from his orders.

106. Crane, *Korea*, 63. MacArthur neglected to inform even the Joint Chiefs of Staff.

107. Destruction became the operative concept guiding US strategy. Staff Study for Deputy for Operations, Far East Air Forces, “The Application of FEAF Effort in Korea,” 12 April 1952, in FEAF Historical Division, FEAF Operations Policy, Korea, Mid-1952, March 1955 file K720.01 1952 (addendum), AFHRC. Conrad Crane observes that the command’s recommendation—that the modified strategy be described not as a major change but simply as a “shift in emphasis”—was designed to prevent the Army from objecting and to avoid public controversy. Crane, *Korea*, 117.

108. Crane, *Korea*, 155, 159.

109. Crane, “Raiding the Beggar’s Pantry,” 917.

110. Crane, *Korea*, 160.

111. Conway-Lanz, *Collateral Damage*, 107.

112. *Ibid.*, 83.

113. Conway-Lanz found that the terms “collateral devastation” and “collateral effects of damage” originated in discussions about nuclear weapons during the 1950s. “Cuban Missile Crisis and Aftermath, Document 236, 7 December 1962” in *Foreign Relations of the United States, 1961–1963*, vol. 11, *Cuban Missile Crisis and Aftermath*, ed., John P. Glennon, Ronald D. Landa, and Charles S. Sampson (Washington, DC: Department of Defense, 1998), 10; see Eden, *Whole World on Fire*, for an exhaustive survey of US efforts to assess and model nuclear weapons effects.

114. Silvanus T. Gilbert III, “What Will Douhet Think of Next?: An Analysis of the Impact of Stealth Technology on the Evolution of Strategic Bombing Doctrine” (MA thesis, Air University, Maxwell AFB, AL, 1992), 30.

115. See, for example, Morton H. Halperin, *Limited War in the Nuclear Age* (New York: Wiley and Sons, 1963), 108; and George H. Quester, *Deterrence before Hiroshima: The Airpower Background of Modern Strategy* (New York: Wiley, 1966), 23, 26, 63.

116. This is a common complaint of human rights groups, which also criticize antiseptic military parlance such as “servicing a target.” An example was one German organization for the preservation of language in 1999 awarding collateral damage the distinction of “bad expression of the year.” Andru E. Wall, ed., *Legal and Ethical Lessons of NATO’s Kosovo Campaign*, International Law Studies 78 (Newport, RI: Naval War College, 2003), 184.

117. Grossman describes these as adaptations to enable killing, which is fundamentally difficult to undertake. David A. Grossman, *On Killing: The Psychological Cost of Learning to Kill in War and Society* (New York: Little, Brown, 2009).

118. Michael R. Rouland, CIV USAF AF/HOH, Air Force Historical Research Office, to the author, e-mail, 23 August 2010. Mr. Rouland cited Air Force Manual (AFMAN) 1-1, *United States Air Force Basic Doctrine*, August 1964.

119. *Ibid.*, 179.

120. The architects of US nuclear weapons doctrine continued to discuss collateral damage in the context of planning factors for nuclear targeting and employment. Joint Publication (JP) 3-12.1, *Doctrine of Joint Theater Nuclear Operations*, 9 February 1996.

121. Air Force Pamphlet (AFPAM) 110-34, *Commander’s Handbook on the Laws of Armed Conflict*, 25 July 1980, 3-3.

122. A subsequent AFMAN’s definition of collateral damage neglected to mention people, defining it as “damage to surrounding resources, either military or non-military, as a result of actions or strikes directed specifically against enemy forces or military facilities.” Air Force Manual (AFMAN) 11-1, *Air Force Glossary of Standardized Terms*, 29 September 1989.

123. Air Force Doctrine Document (AFDD) 3-60, *Targeting*, 28 July 2011.

124. This definition is not unique to the USAF. The current DOD definition of collateral damage is “unintentional or incidental injury or damage to persons or objects that would not be lawful military targets in the circumstances ruling at the time.” Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 08 November 2010, as amended through 15 August 2014.

125. Conway-Lanz, *Collateral Damage*, 220–1.

126. AFDD 3-60, *Targeting*, 28 July 2011.

127. The Judeo-Christian tradition of ethical reasoning and the customary law of armed conflict both incorporate the principle of proportionality in the use of force. In 1977, a formulation of this principle became an element of positive law, although it remains difficult to define precisely. This is Article 51 (5) (b) of the 1977 *Geneva Protocol I Additional to the Geneva Convention of August 12, 1949*. See Roberts and Guelff, *Documents on the Laws of War*, 448–9.

128. Legal issues are discussed in detail in the following chapter.

129. Eden, *Whole World on Fire*, 50.

130. I describe this in chapter 5.

131. Many aspects of conventional military operations, such as maneuver and coordination of different first force components, do not apply to nuclear weapons use.

132. US Army Field Manual (FM) 6-01.1, *Knowledge Management Operations*, July 2012.

133. Mark Clodfelter argues that in World War II, Korea, and Vietnam air leaders' commitments to avoiding civilian harm faded in the face of indecisive results, such that they "reluctantly ordered direct strikes on war-making capability and civilian morale." Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: Free Press, 1989), 127.

134. Pape, *Bombing to Win*, 190, 208. Also see, for example, W. Hays Parks' comparison of Linebacker II with other bombing raids. W. Hays Parks, "Air War and the Law of War," *Air Force Law Review* 32 (1990), 154.

135. Then-Ambassador Maxwell Taylor began to voice these concerns immediately. For more information, see Mike Gravel, Noam Chomsky, and Howard Zinn, eds., *The Pentagon Papers*, vol. 3, *The Defense Department History of United States Decisionmaking in Vietnam* (Boston: Beacon Press, 1971), 316.

136. Thomas C. Hone, "Strategic Bombardment Constrained: Korea and Vietnam," in *Case Studies in Strategic Bombardment*, ed. R. Cargill Hall (Washington, DC: Air Force History and Museum Programs, 1998), 498.

137. For a detailed discussion of the strategies employed during Rolling Thunder, see Pape, *Bombing to Win*, 174–95.

138. Guenter Lewy, *American in Vietnam* (New York: Oxford University Press, 1978), 57–64, 77–84.

139. See discussion in Nick Turse, *Kill Anything That Moves* (New York: Henry Holt and Company, 2013), 42–51.

140. Nixon's Linebacker campaigns succeeded, Robert Pape argues, because the Vietnamese had shifted from a guerilla war to a conventional war strategy that was vulnerable to air interdiction. See discussion in Pape, *Bombing to Win*, 195–202.

141. Nixon railed, "I don't want any more of this crap about the fact we couldn't hit this target or that one." Clodfelter, *Limits of Air Power*, 190. At the same time, Clodfelter notes, Nixon did not want indiscriminate raids to harm détente or increase communist support for North Vietnam. Parks contrasts Linebacker with the gradualism and hesitation of Rolling Thunder. He implies that the reduction of geographic restrictions on targeting, devolution of greater authority to military commanders, and end of the "paranoiac fixation" regarding civilian casualties make Linebacker a success. W. Hays Parks, "Linebacker and the Law of War," *Air University Review* 34, no. 2 (January/February 1983), 5–8.

142. Clodfelter, *Limits of Air Power*, 190.

143. Thomas, *Ethics of Destruction*, 152.

144. Robert McNamara, secretary of defense, to Pres. Lyndon B. Johnson, memorandum, October 1966.

145. Pape, *Bombing to Win*, 208.

146. This is a striking contrast between American public attitudes toward civilian deaths during the Vietnam War and the public's views decades later during humanitarian interventions and the wars in Iraq and Afghanistan. In chapters 4 and 5, I show that public pressure on US forces to reduce civilian casualties was largely external. As of this writing, the use of drones to conduct targeted killing seems to have revived an American debate about the use of force and civilian deaths.

147. Civilian leaders initially rejected the USAF's original proposal to destroy North Vietnam's industrial base, a strategy that Robert Pape dubbed the "genteel Douhet" approach. The supporting rationale for imposing widespread destruction in what would include urban areas was undermining the population's morale. Pape, *Bombing to Win*, 180–1.

148. White House instructions on a 1966 raid on Hanoi and Haiphong petroleum targets included the need to instruct pilots on avoiding civilian casualties, awaiting good weather, selecting an axis of attack that avoided populated areas, and limiting the suppression of ground to air threats to those sites outside populated areas. W. Hays Parks, "Rolling Thunder and Law of War," *Air University Review* 33, no. 2 (January/February), 12.

149. *Ibid.*, 9–11.

150. Pape, *Bombing to Win*, 188.

151. *Ibid.*, 190.

152. Parks, "Linebacker," 11–2.

153. Thomas, *Ethics of Destruction*, 153.

154. Parks, "Rolling Thunder," 19.

155. Lewy, *America in Vietnam*, 268.

156. *Ibid.*, 233–4.

157. See, for example, Parks, "Linebacker"; U. S. Grant Sharp, *Strategy for Defeat: Vietnam in Retrospect* (San Rafael, CA: Presidio Press, 1978); and Thomas, *Ethics of Destruction*, 154.

158. Parks argues that the laser and electro-optically guided weapons had a "pronounced effect" on the war. "Linebacker," 11, 13; and Clodfelter, *Limits of Air Power*, 191.

159. Pape argues that the campaigns' primary impact was not on morale but rather on North Vietnam's conventional war strategy—which was more vulnerable to bombing than its earlier guerilla war. Pape, *Bombing to Win*, 176. The *Washington Post* editorial of 28 December called the bombing "the most savage and senseless act of war." Editorial, "Terror Bombing in the Name of Peace," *Washington Post*, 28 December 1972, A20.

160. The time frame for these estimates is from 1965 to 1974. For a review of estimates of civilian casualties, including total Vietnamese casualties, see Charles Hirschman, Samuel Preston, and Vu Manh Loi, "Vietnamese Casualties during the American War: A New Estimate," *Population and Development Review* 21, no. 4 (December 1995), 790.

161. Pape, *Bombing to Win*, 190, 208.

162. *Ibid.*, 190.

163. Compared to historical figures and overall Vietnamese casualties, Pape regarded Rolling Thunder's civilian deaths as "exceedingly low" and Linebacker campaign figures as "small numbers." Pape, *Bombing to Win*, 190, 208.

164. Lewy, *America in Vietnam*, 268.

165. Hirschman, Preston, and Vu, "Vietnamese Casualties," 790.

166. "Contrary to the impression given by the U.S. communiqués, on-the-spot inspection indicates that American bombing has been inflicting considerable civilian casualties in Hanoi and its environs for some time past." Harrison E. Salisbury, "Visitor to Hanoi Inspects Damage Attributed to American Raids," *New York Times*, 26 December 1966, 1.

167. Fall described the United States as choosing “to wage unlimited aerial warfare inside the country at the price of literally pounding the place to bits.” Bernard Fall, “Vietnam Blitz,” *New Republic*, 9 October 1965, 17–21.

168. Indeed, while Powell specifically meant to avoid another Vietnam-like war and formally countenanced the role of peace operations in US military strategy, military and conservative figures used the doctrine to dismiss humanitarian intervention and “operations other than war” during the 1990s. For additional information, see Kenneth J. Campbell, “Once Burned, Twice Cautious: Explaining the Weinberger-Powell Doctrine,” *Armed Forces and Society* 24, no. 3 (Spring 1998): 357–74; and Jeffrey Record, “Back to the Weinberger-Powell Doctrine?” *Strategic Studies Quarterly* 1, no. 1 (Fall 2007): 83, <http://www.au.af.mil/au/ssq/2007/Fall/Fall%2007%20PDF.pdf>.

169. Caspar W. Weinberger (remarks prepared for delivery, National Press Club, Washington, DC, 28 November 1984); and later in Caspar W. Weinberger, “U.S. Defense Strategy,” *Foreign Affairs* 64, no. 4 (Spring 1986): 686–7. Powell’s key additions were acknowledging the place of peace operations and humanitarian intervention (“a given”), insisting on an exit strategy, and assessing the risks and costs involved in the use of force and achievement of the objectives. Colin L. Powell, “U.S. Forces: Challenges Ahead,” *Foreign Affairs* 71, no. 5 (Winter 1992), 37, 39.

170. Prussian general Helmuth von Moltke’s words have been translated with some variation, but each version conveys his view that wars should be prosecuted vigorously and concluded swiftly. He does acknowledge, however, that some (undefined) limits on warfare should exist. “The greatest good deed in war is the speedy ending of the war, and every means to that end, so long as it is not *reprehensible*, must remain open” (emphasis in the original). Helmuth Karl Bernard von Moltke, chief of the Prussian general staff, to Prof. Johann Kaspar Bluntschli, jurist of international law, letter, 11 December 1880, in *Die Zerstörung der deutschen Politik: Dokumente 1871-1933* [The Destruction of German Politics: Documents 1871-1933], ed. Harry Pross, trans. Richard S. Levy (Frankfurt, West Germany: Fischer Bücherei, 1959), 29–31, <http://www.h-net.org/~german/gtext/kaiserreich/moltke.html>.

171. The original Weinberger doctrine tenets, later echoed by Powell, included the requirements to defend US and allied vital national interests, use overwhelming means, achieve clear objectives, continually reassess means and objectives, gain public support, and use force as a last resort. For context, see Walter LaFeber, “The Rise and Fall of Colin Powell and the Powell Doctrine,” *Political Science Quarterly* 124, no. 1 (Spring 2009): 71–93.

172. I further consider the implications in chapter 3.

173. John L. Romjue, “The Evolution of the Airland Battle Concept,” *Air University Review* 35, no. 4 (May/June 1984), <http://www.airpower.maxwell.af.mil/airchronicles/aureview/1984/may-jun/romjue.html>.

174. This attitude stemmed from the US view of customary international law, which held that the primary responsibility for preventing civilian casualties rested with the defender and the individual civilian. Parks, “Air War,” 153.

175. Michael B. Donley and Norton A. Schwartz, *United States Air Force Posture Statement 2010* (Washington, DC: Department of the Air Force, 9 February 2010), <http://www.posturestatement.af.mil/shared/media/document/AFD-100223-010.pdf>.

176. Lambeth, *Transformation of American Airpower*, 263. “The inherent flexibility of air power is its greatest asset.” See also War Department Field Manual 100-20,

Command and Employment of Air Power, 21 July 1943, 55; and Air Force Manual (AFMAN) 1-1, *Air Force Basic Doctrine*, cited in Air Force Doctrine Document (AFDD) 2, *Organization and Employment of Aerospace Power*, 17 February 2000.

177. This thinking was articulated in 1942: “Land power and air power are co-equal and interdependent forces; neither is an auxiliary of the other.” United States Army Field Manual (FM) 100-2, *Command and Employment of Air Power* (Washington, DC: Government Printing Office, 1942), 1. A more modern variation is that “it is possible to directly affect adversary sources of strength and will to fight by creating shock and destroying enemy cohesion without close combat.” Air Force Doctrine Document 1, *USAF Basic Doctrine*, 17 November 2003, 17–18.

178. “Control of available air power must be centralized and command must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited.” War Department Field Manual 100-20. The desire for USAF control of airpower was evident in the case of Gen Chuck Horner’s desire for independence in Desert Storm and Lt Gen Michael C. Short’s disputes with Gen Wesley Clark in the Kosovo campaign, as I describe in chapter 4.

179. A USAF publication on irregular warfare notes that “regardless of the size, composition, or command structure established for conducting an IW campaign, commanders should still adhere to the tenet of centralized control and decentralized execution.” Air Force Doctrine Document (AFDD) 2-3, *Irregular Warfare*, 15 March 2013, 11.

180. The Norden bombsight, like many technologies that followed, was initially oversold. Promoters claimed it would be able to drop a “bomb into a pickle barrel,” although this was never the case. It was resilient, however. The same basic system “soldiered on” for decades and was even resurrected to provide a cheap and reliable means of dropping acoustic sensors on the Ho Chi Minh Trail. McFarland, *America’s Pursuit of Precision Bombing*, 206.

181. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, *Report of the Defense Science Board on Tactical Air Warfare* (Washington DC, Department of Defense, November 1993), 17, <http://www.dtic.mil/dtic/tr/full-text/u2/a275347.pdf>.

182. Parks argues that precision has always helped “justify using the U.S. Air Force in the field.” W. Hayes Parks, former special assistant to the US Army’s Judge Advocate General, interview with author, Washington, DC, 21 December 2009.

183. Lt Gen David A. Deptula, USAF, retired, interview with the author, Washington, DC, 21 December 2009.

184. John T. Correll, “The Emergence of Smart Bombs,” *Air Force Magazine* 93, no. 10 (March 2010), <http://www.airforce-magazine.com/MagazineArchive/Pages/2010/March%202010/0310bombs.aspx>.

185. Thanh Hoa had been dubbed the bridge that would never go down. The attacks also dropped the Paul Doumer Bridge, another target that had thwarted US attacks for five years. Richard G. Davis, *Decisive Force: Strategic Bombing in the Gulf War* (Washington, DC: Air Force History and Museums Program, 1996), 2.

186. “The whole notion of precision arose in context of protecting the aviator, not stopping civilian casualties.” Maj Gen Charles Dunlap, USAF, retired, interview with the author, Washington, DC, 4 December 2009.

187. Richard G. Davis, “Strategic Bombardment in the Gulf War,” in R. Cargill Hall, ed., *Case Studies in Strategic Bombardment*, Air Force History and Museums Program, 1998, 529.

188. Ibid.

189. “Now with precision, we’ve evolved to the point where we don’t need to cause as much damage.” Deptula, interview.

190. Davis, *Decisive Force*, 3.

191. In 1990 fewer than 150 fighter-bombers could carry PGMs, although the precision-capable Strike Eagle was deployed by the end of that year. Ibid., 529–30.

192. For example, 2011 Air Force basic doctrine asserted that “it is possible [for airpower] to directly affect adversary sources of strength and will to fight by creating shock and destroying enemy cohesion without close combat.” AFDD 1, *Air Force Basic Doctrine*, 17–8. See also Clodfelter, *Limits of Air Power*.

193. For a history of the USAF targeting debate, see Pape, *Bombing to Win*; or Lambeth, *Transformation of American Airpower*.

194. Richard G. Davis describes senior USAF leaders’ concern that airpower had become too tied to tactical support for ground forces as part of the AirLand Battle concept. Warden’s work was initiated to counter this trend and develop “independent uses and functions” for airpower. Davis, *Decisive Force*, 9.

195. In 1986 Warden had already codified his ideas on independent air operations and drew on these concepts in his initial planning for Operation Desert Storm. His work was published as John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, DC: National Defense University Press, 1988).

196. Ibid., 9, 134.

197. For a thorough account of the campaign planning, see Richard T. Reynolds, *Heart of the Storm: The Genesis of the Air Campaign against Iraq* (Maxwell AFB, AL: Air University Press, 1995).

198. The doctrine is dated 3 April 2007. For a historical overview of EBO, see Edward C. Mann III, Gary Endersby, and Thomas R. Searle, *Thinking Effects: Effects-Based Methodology for Joint Operations*, CADRE Paper no. 15 (Maxwell AFB, AL: Air University Press, October 2002).

199. The most detailed current doctrine is Air Force Doctrine Annex 3-0, *Operations and Planning, The Effects-Based Approach to Operations (EBOA)*, 9 November 2012.

200. Robyn S. Read and Air University, *Transformation: Effects-Based Planning and Operations*, CADRE MDA Quick-Look 2003–07 (Maxwell AFB, AL: College of Aerospace Doctrine, Research, and Education, Air University; Airpower Research Institute, Air University, 2003).

201. Deptula, interview.

202. Air Force Doctrine Annex 3-0, 21.

203. Ironically, EBO’s push toward targeting nontraditional targets with discriminate means has raised questions about LOAC compliance, an issue I examine in chapter 3.

204. Air Force Doctrine Document (AFDD) 2, *Organization and Employment of Aerospace Power*, 7 April 2007, included a “completely new discussion on the effects-based approach to military operations.” EBO was never fully embraced by the joint community. For discussion of the associated controversies, see P. Mason Carpenter

and William F. Andrews, “Effects-Based Operations Combat Proven,” *Joint Force Quarterly* 52, no. 1 (2009): 78–81.

205. Lambeth cites “its demonstrated capacity to neutralize an enemy’s army with a minimum of casualties on both sides.” Lambeth, *Transformation of American Airpower*, 320.

206. John E. Burchard, *Rockets, Guns and Targets: Rockets, Target Information, Erosion Information, and Hypervelocity Guns Developed during World War II by the Office of Scientific Research and Development* (Boston: Little, Brown, and Company, 1948), 240.

207. AFDD 1, 40. The doctrine nonetheless notes that airpower can deliver large-scale destruction if necessary, 17.

208. As late as 2003, the military noted that “while several joint pubs mention the issue of limiting collateral damage, there is not focused discussion on the topic in joint doctrine.” US Joint Forces Command, Joint Warfighting Center (JWFC) Doctrine Pam 2, *Doctrinal Implications of Low Collateral Damage Capabilities*, 27 January 2003, 15.

Chapter 3

The Limits of Law

The law of armed conflict (LOAC) regulates the modern US use of force, but law's impact today is more limited than either the military or its humanitarian critics might like to acknowledge. The LOAC, also called international humanitarian law (IHL), does not require the degree of restraint and civilian protection that human rights actors often claim. Nor does the law provide the normative justification for how the United States uses force that military actors assert.¹ Put simply, compliance with law is not the central humanitarian issue for the US military in modern armed conflict today. The norm of minimizing civilian harm has overtaken law.

In this chapter, I explore two key reasons for the law's limits. First, the law rarely provides a definitive standard of behavior on the most controversial aspects of the US use of force. As I will explain, one can discern the LOAC's clarity on vexing questions only at its outer edges. Thus, law infrequently provides a bright line; more often, it suggests a direction, a sensibility, and a process for weighing and arguing about battlefield actions. In a domestic context, the law's meaning would be articulated and refined through court decisions about specific questions, but the limitations of international adjudication have failed to clarify many important LOAC provisions.² While flexibility helps ensure the law's relevance to states and armed actors with dramatically different capabilities and goals, it creates challenges for reaching collective judgments about compliance. The LOAC, like the US constitution, remains an invitation to struggle.

The second reason for the law's limited impact is the rise of normative expectations, as explained in chapter 1. The nonlegal expectation that US forces will minimize civilian harm imposes a higher standard upon the conduct of combat operations. The norm judges only effects (not intent), and the dead and wounded can be starkly quantified. The US military has been slow to recognize the divergence of legal and normative standards. Faith in the law's power to justify civilian harm lingered long after the United States had in practice abandoned the legal "floor" and begun adapting to the more demanding norm, at least in the limited wars the country has fought since the end of the Cold War. In chapters 4 and 5, I will detail the process by which the

military came to recognize the importance of the norm as a standard that exists independently of the LOAC. Today, the level of effort to minimize civilian harm that characterizes US air operations generally *exceeds* the requirements of the LOAC—certainly as the United States understands the law. The civilian casualty norm has now overtaken the LOAC in influencing US military actions.

In this chapter, I discuss the range of interpretations and uses of law in contemporary debate about armed conflict. I review the LOAC's sources, principles, and roles in military operations. I then outline generic differences in the military (or "inside") and humanitarian ("outside") approaches to the LOAC and show how these approaches shape understanding of a legal provision that is particularly important for airpower—the definition of "military objectives." I end with an analysis of the role of law in expert and public discourse. The use of law as a framework for assessing how US use of force affects civilians is problematic both because the disagreements about law are rarely acknowledged and because the US military is grappling with standards that far exceed what it believes the law requires.

The Law of Armed Conflict

It is said that international law lies at the vanishing point of jurisprudence.³ The LOAC, in turn, must lie at the vanishing point of international law. Its principles are clear. However, its provisions are often disputed and rarely adjudicated, and enforcement or tangible sanction is rarer still.⁴

The LOAC is a collection of rules created by state action and state agreement that prescribes desired behavior. The LOAC provides a universal standard for the conduct of war. The LOAC's sources are varied. The original source of law was customary behavior. State practice that over time becomes consistent is regarded as customary law.⁵ State judgments about practice (referred to as *opinio juris*) also contribute to building customary law. The LOAC is also codified in treaties and other legal instruments—called "black letter" law. No single source is most authoritative. Yet because the central LOAC treaties are more readily identified and dissected than disparate state practice and comment, black letter law is the LOAC source most often debated in the public sphere. The LOAC's main texts are the *Hague IV Regulation of 1907* and the four *Geneva Conventions of*

1949 (with their 1977 *Additional Protocols*).⁶ These instruments establish rules regarding types of weapons and their use, protection of noncombatants, and other aspects of warfare.

The LOAC serves several purposes. Conceptually, the law's primary goal is balancing necessity with humanity, providing a counterweight to *kriegsraison* (the position that morality permits whatever actions are required to win a war).⁷ Pursuant to that balancing, civilian harm is lawful under certain circumstances. Therefore, the law also provides a justification or explanation when the use of force produces civilian suffering.

Thereby, compliance with the law can provide critical reassurance to both American society and its military forces. It enables Americans to reconcile a fierce approach to war with a conception of themselves as moral actors. The United States pioneered the LOAC during the American Civil War through what came to be known as the Lieber Code.⁸ Originally issued as General Order No. 100, Pres. Abraham Lincoln's instructions to the Union Army outlined rules for its conduct in wartime. After the Vietnam War, in response to gross law of war violations at My Lai, the United States made the LOAC part of basic military training—eventually making it central to operational decision making.⁹ Military lawyers now advise operational commanders at multiple levels of the battlespace.

The “legalization” of armed conflict provides service members with confidence in their actions. Faith that one has acted lawfully is extremely important in helping individuals retain their moral integrity—even when civilian harm results from their actions.¹⁰ Lawfulness also offers a public legitimization; legal justification figures prominently in the official US response to allegations of civilian deaths.¹¹ Thus, LOAC compliance provides a form of reassurance that is both internal (within the military) and external (for the nation or the world).

The law's core principles are intuitive. They include military necessity (the use of force must be a requirement to “win”); distinction (the requirement to target only combatants); and proportionality (the need to ensure an appropriate relationship between noncombatant harm and the military benefits of force).¹² While the principles are easy to grasp, they defy precise, quantifiable definitions. The 1977 *Additional Protocols to the Geneva Conventions* introduced new language and definitions.¹³ The interpretive challenge is like peeling an onion—another layer of complexity always waits. This is due, in part, to the fact that the law itself embodies tensions.

The principal tension in the LOAC is that between humanity and necessity. Since the law governs war as a *permissible* activity, the law is not intended to make war impossible to fight or win. The LOAC effectively prioritizes sovereignty (the right of states to make war) over noncombatant protection (individual human rights).¹⁴ If human rights concerns dominated the conduct of war, IHL constraints might preclude victory.

The law is also highly contextual and relational. It focuses more on the processes of balancing and judging than on the post-facto outcomes and effects. This provides the war fighter great latitude. Since the law emerged from customary conduct, combatants retained significant authority in determining how to balance necessity and humanity.

The principle of proportionality provides an illustration of these phenomena. Determining the proportionality of a military act requires weighing civilian costs and military benefits when taking military action.¹⁵ Treaty law does not use the specific term “proportionality” but implicitly discusses it in the context of the independent principle of discrimination. The *1977 Additional Protocol I to the Geneva Conventions* prohibits indiscriminate actions that would violate the longstanding customary principle of proportionality. The relevant provision is in Article 51, which is concerned with protection of the civilian populations. Article 51 5 (b) defines as indiscriminate “an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.”¹⁶

Many difficulties attend this formulation of the principle of proportionality.¹⁷ The most fundamental is that because evaluators may weigh each of the two “goods”—military advantage and civilian harm—differently, the provision cannot provide a clear formula for determining when civilian deaths are excessive in relation to the anticipated military value of an action.¹⁸ This central problem of underlying values exists even if the parties have similar understandings of other key aspects of the principle, such as what constitutes excessive, the definition of concrete and direct military advantage, what level of certainty in anticipation is required, and so forth. Where law involves a process of weighing relative principles and actors value those principles differently, the rules will often fail to resolve a particular controversy.

Disputes about the meaning of law influence overall assessments of US performance in military operations. Thus, the North Atlantic Treaty Organization (NATO) and human rights nongovernmental organization (NGO) Amnesty International (AI) reached starkly divergent assessments of Operation Allied Force, the 1999 NATO operation regarding Kosovo. NATO argued that there was no “armed conflict in the history of modern warfare where there has been more discipline and care taken to comply with the laws of war.”¹⁹ AI concluded that NATO had committed serious violations of the laws of war leading to the unlawful killings of civilians. Indeed, AI even charged that NATO had committed a war crime.²⁰

Institutional interests certainly shape the arguments of each organization, but the competing assessments of the Kosovo campaign are also rooted in perspectives on the LOAC itself. There are several ways one might parse competing perspectives toward the LOAC: one can differentiate between military and humanitarian views, discern differences between the attitudes of status-quo states and “progressive” states, or see the distinctions primarily between those “inside” the use of force and those “outside.”²¹ It may be easiest for our purposes to differentiate between a perspective that emphasizes humanity and civilian protection and one that prioritizes military necessity.²²

However, before diving into this comparative exercise, it is important to clarify a central point about how the principle of humanity and human rights concerns have influenced both legal and broader normative and political standards of war. The legal standards have been slowly shifting toward humanity, as evidenced in language of the *Additional Protocols*.²³ The impulse for these changes is the same impulse that has reshaped normative expectations with regard to minimizing civilian casualties—the principles of humanity. Nevertheless, normative expectations to minimize civilian casualties also are manifest *outside* of the law, unhinged from the principle of necessity (a point to which I shall return later in this chapter). Many of the same actors that push to minimize civilian casualties as a moral imperative also work to make international law more protective of noncombatants.

Competing Perspectives

For our purposes, the community of international law experts can be divided into two general categories: those who prioritize the principles

of humanity within the LOAC and those who prioritize the principle of necessity. While generalization about such complex issues risks oversimplification, these two “ideal type” perspectives highlight key differences of opinion regarding international law’s protection of noncombatants.

Promoting Humanity

The first perspective (of the humanitarians, progressives, or outsiders) promotes the philosophy of IHL—enhancing protection of noncombatants.²⁴ This perspective holds that the military reading of the LOAC “at times tilts away from the protection of civilians toward broad and lenient readings of what is permissible and reasonable under the law.”²⁵ Since most humanitarian lawyers lack security or military backgrounds, they can find a more equal footing with military lawyers on the field of black letter law. Accordingly, humanitarian lawyers focus less on applying state *practice* than upon debating the meaning of codified laws and related written commentaries.

Groups such as AI and Human Rights Watch (HRW) couple on-the-ground investigations of armed conflict with public relations and advocacy work. They work to publicly pressure governments during the course of armed conflict, and, in the longer term, they seek to influence development of the law. Some humanitarian groups use the law as a yardstick not only for evaluation but also as a form of legal “discovery” of the facts. HRW staffers, for example, argue that military actors give professional colleagues “quite a bit of latitude when facts are ambiguous or scant.”²⁶ The outsider’s responsibility, they argue, is to challenge this latitude, asking for a justification of government actions where “enough facts suggest a violation of the law.”²⁷ HRW sees its role as one of forcing “social scrutiny of IHL compliance” by placing the burden of proof upon military actors.²⁸

In its approach to potential LOAC violations, the International Committee of the Red Cross (ICRC) plays a different role—one that is closer to that of an “insider.” Charged by the Geneva Conventions to preserve and shepherd IHL across the globe, the organization works confidentially with armed forces to shape their behaviors through a frank dialogue. The ICRC forgoes “naming and shaming” military actors in exchange for preserving quiet insider influence, in what is sometimes a controversial bargain.²⁹ At the same time, the ICRC adopts an outsider perspective in seeking to advance its “IHL

philosophy” through its role in interpreting law and convening conferences about the meaning and future direction of the law. This aspect of ICRC work strikes some as advocacy, and it can be seen as conflicting with the organization’s responsibility to preserve extant laws.³⁰

Military lawyers sometimes regard legal analyses by humanitarian actors as biased. First, the analyses naturally highlight alleged violations rather than the degree to which LOAC is followed. Second, many NGOs focus their critique on precisely the states that, by virtue of national ethics or desires for legitimacy, are already largely compliant with the law. Some NGOs document LOAC violations by states or nonstate actors that lack interest in LOAC compliance. Still, these groups believe that they must focus their limited effort where it is most likely to have impact.³¹ Furthermore, HRW argues that the powerful and law-compliant states will most heavily influence the law’s evolution and therefore merit special attention. In addition, the most technologically advanced states can demonstrate state-of-the-art law compliance and therefore set important precedents.³² However, this intense focus on critiquing the behavior of states at the vanguard of legal and normative compliance can appear unwarranted or biased.

Preserving Necessity

US military lawyers have a different outlook on the role of law. They recognize that law regulates conflict, yet allows belligerents to fight ferociously. Legal constraint cannot come at the expense of victory because the law is meant to be consistent with effective war fighting. Given the US historical experience, this view appears to be shared by civilian political leaders who direct the use of force.³³ As historian John Fabian Witt summarizes, “From the Revolution forward, the United States’ long history of leadership in creating laws of war stands cheek by jowl with a destructive style of war that has come to be known among military historians as the ‘American way of war.’”³⁴

In a contemporary context, military lawyers seek to sustain a workable balance between necessity and humanity. They fear that overemphasis on humanity could vitiate the practice of war. Mindful that words are easily debated, while state practice provides firm precedent, military lawyers often emphasize what states do rather than relying primarily on interpretations of treaty texts. Skepticism about

the humanitarians' engagement with law extends to the vocabulary of law itself. Lawyers within the armed forces sometimes reject the term *IHL*, believing that IHL is widely understood to include human rights law that is not properly part of the LOAC.³⁵

Military lawyers have what might be called a “conservative” or “minimalist” view of the LOAC.³⁶ While humanitarians focus on what cannot be done, military lawyers emphasize possibilities. For military lawyers, the law serves as a “floor” guiding military options. US military lawyers see their role as helping commanders understand the wide flexibility of the LOAC.³⁷ During the Kosovo air campaign, military and political authorities feared launching attacks that might cause civilian harm; lawyers found themselves emphasizing that the law *permits* collateral damage.³⁸ Thus, compared to normative concerns, the law can provide a relatively permissive standard for military conduct.

In seminars and discussions, as part of the *opinion juris* process shaping custom, military lawyers work to “preserve” the balance between necessity and humanity in the LOAC. Some express skepticism about how humanitarian interlocutors aim to interpret and shape the law. Groups like AI and HRW, writes one military lawyer, “have the not-so-hidden agenda of promoting rules that would make the legal conduct of war impossible, in order to end warfare itself—at least by law-abiding states.”³⁹ Military lawyers must continually defend the law's balance against those who relentlessly seek to push the principle of humanity.

Not all militaries share the conservative US approach. Even some of America's closest allies, the progressive states within the NATO alliance, disagree on key points.⁴⁰ More broadly, US skepticism of the 1977 Additional Protocols to the Geneva Convention places the United States at odds with mainstream views of international law.⁴¹ US military lawyers therefore can find themselves in the minority on key points of law. Since the 1977 Additional Protocols to the Geneva Conventions, the United States has declined to sign or ratify many international agreements to create new humanitarian institutions and treaties.⁴² The differences in approach to the law and distance from recent LOAC treaties can create tensions during coalition operations. Examples include frequent disputes about targeting of dual-use objects during the Kosovo campaign and complications when coalition members disagree about the legality of specific weapons

(e.g., many NATO members have rejected the use of cluster munitions, which the United States still employs).

Each legal community's positions include some roughly analogous weaknesses. Military attorneys are uncomfortable with broad definitions of civilian harm (for assessing proportionality), which parallels the human rights community's unease with broad definitions of military advantage. Each community would define the other's core concern (necessity or humanity) as concretely and objectively as possible, while preferring a broader, more subjective definition of its issue of primary interest. They both seek maximum interpretive freedom in the arena they most value.

Both perspectives are inconsistent in their respective emphases upon the *intent* of action versus the *effects* of action. For example, the human rights critique finds intent critically important in identifying morale bombing. Yet humanitarians reject the military's claims about the importance of a commander's intent in defining military objectives. It is problematic to cherry-pick the context in which intent matters. Likewise, it is inconsistent for the military to insist upon the importance of intent *except* where not doing so might yield greater targeting freedom. The US military argues that capabilities to reduce civilian casualties enable proportional targeting of dual-use objects. Yet it rejects civilian effects as a metric by which others might judge US airpower.

Applying the Law to US Military Operations

Today when outsiders criticize US military activities on legal grounds, they generally typically focus on three main issues: 1) an attack's proportional benefits and harms, 2) the precautions taken to reduce civilian harm, and 3) the lawfulness of target choice.⁴³

Questions related to proportionality and feasible precautions arise directly from the fact of civilian injury or death. Critics are unlikely to raise questions regarding these LOAC principles unless civilians have been harmed in a specific attack.

Our prior consideration of the main difficulties in assessing proportionality revealed that judgments will be clearest at the furthest margins—where a strike is grossly damaging and of marginal utility or where the military utility is evident and collateral damage is negligible. Moreover, because US airpower has, on the whole, become

more accurate and accordingly causes fewer civilian deaths, proportionality arguments have become less prominent in the public debate. As a result, where civilian harm occurs today, critics are likely to focus on the question of feasible precautions.

Belligerents are required by law to take “all feasible precautions” to avoid causing civilian harm.⁴⁴ The basic point, echoed throughout the LOAC, is that combatants should make reasonable efforts to respect the principle of discrimination. Yet any retrospective analysis of a civilian casualty incident is likely to be able to identify additional steps that might have been taken to avoid or reduce civilian harm. The contentious question generally is whether additional steps would have been “feasible.” Military actors often argue that civilian armchair quarterbacks lack the expertise and experience to accurately assess the question. Insiders and outsiders may fundamentally disagree about the level of risk a combatant could feasibly assume or viable operational alternatives.

In addition, the standards themselves can become blurred. Sometimes human rights actors dress normative claims in legal analysis, as when they assert that the military is required to adopt all possible precautions.⁴⁵ Such views may be fueled by the US military’s repeated emphasis on doing everything possible to avoid civilian casualties, by which it means that it exceeds requirements of the law.⁴⁶ The potential to conflate legal requirements for civilian protection with decisions taken for other reasons further complicates the already challenging work of applying legal standards to the conduct of war.

Disputes about law also extend to areas far outside the influence of the strengthened norm of civilian protection. The best example is the contemporary controversy regarding defining military objectives. Outsiders see law as constraining military choices to a narrow range of targets; insiders instead view law as facilitating targeting choices that the United States has long favored in air war. While outsiders emphasize the need for a target to be directly connected to the enemy’s war fighting capabilities, the US military holds that attacks on a wide array of targets that would only indirectly affect civilian lives and morale are lawful. Ironically, the United States’ progress in limiting civilian casualties during airstrikes has only reinforced its interest in pursuing a broad array of military objectives.

The Case of Military Objectives

Air campaign planners and targeteers are consumed with the question of which objects to target and why. They work from a doctrinal philosophy or set of assumptions about military effects, often supported by empirical historical evidence.⁴⁷ Targeting choice is considered part of the operational art of war, informed by military science.

Defining what is a military objective is the initial threshold for targeting choice, the question to be answered *before* considering proportionality or the feasible precautions in launching the attack. The determination of a military objective is reached independently of risks of civilian harm. The definition of a military object has particular significance for airpower and the debate about strategic targeting. The debate about military objectives has been shaped by changes in warfare, technology, and conceptions of how to attain victory. In the nineteenth century, combatants sought to destroy military forces and equipment in set battles. Victory lay in defeating military capability. During the world wars, however, combatants targeted virtually all aspects of industrialized society: the means of economic production, transportation networks, energy sources, and so forth. They sought tangible effects on the enemy's ability to fight, and they also hoped to destroy the morale of the adversary's population at large. The ensuing physical destruction was immense.

American air planners continue to believe that strategic, including psychological, effects offer an efficient alternative to tactical attacks on fielded forces. The allure of strategic targeting has only increased as technological advances allow more focused destruction. Airpower advocates see the possibility of achieving decisive effects with minimal civilian impact as the most humane strategy. Ironically, though, airpower's ability to attack a wide range of strategic targets without causing massive destruction has intensified legal debate about the definition of military objectives.

The Geneva Convention's Additional Protocol I defines military objectives more broadly than simply troops and tanks.⁴⁸ Military objectives are objects that, by their nature, location, purpose, or use, make "an effective contribution to military action" *and* whose destruction or neutralization in the circumstances ruling at the time "offers a definite military advantage."⁴⁹ Objectives must meet the criteria outlined in both the first and second clauses (or "prongs"). Civilian objects, in turn, are all those things that are *not* military objectives.⁵⁰

The central issue for US airpower is how far beyond self-evidently military targets (e.g., forces and equipment) the definition of a military objective extends. W. Hays Parks objects to what he regards as the law's insistence that "any destruction have a nexus to a 'military' rather than strategic, psychological, or other possible advantage."⁵¹ The question directly engages the viability of targeting objects that support political will and civilian morale. In general, the US military assumes an expansive interpretation of military objectives.⁵² This interpretation proves especially controversial in the context of US strategic air targeting. It is unclear that the US government would accept a reciprocal application of this interpretation if, for example, adversaries were to justify attacks on Wall Street in the name of undermining US economic strength or morale.

For targeteers, the spectrum of military objectives runs from military forces and fielded military equipment (what the United States Air Force [USAF] would consider tactical targets) to objects with a less direct relationship to military force.⁵³ Generally speaking, the less direct the contribution to military action, the greater the controversy about its status as a lawful military objective. Specific aspects of the debate include the potential (versus actual) military use of an object, the legality of targeting an object that simply "sustains" war fighting, and whether targeting is motivated by law or is simply justified by a lawful rationale.

Attacking "dual use" facilities that inherently serve both military and civilian purposes, for example, electricity or transportation grids, is not inherently illegal.⁵⁴ However, controversies arise if parties dispute the military advantage provided by destroying those objects, since the second legal condition for attacking dual use facilities is that their destruction offers a definite military advantage. This can be particularly difficult to discern if the conflict is short and the attack is on war-sustaining infrastructure or if the claimed advantage relates to morale or psychological will to resist.

Almost by definition, dual-use objects can be expected to affect civilians. Thus, a distinct principle of international law—proportionality—comes into play. Combatants must weigh the anticipated civilian harm against the attack's expected military advantage. In air attacks on dual use objects, the civilian harm generally raises more humanitarian objections than the legal status of the target itself.⁵⁵

Potential Use

A purely civilian object in peacetime may become a military objective in war. Factual dispute may arise regarding the question of whether infrastructure is dual use or a civilian object is a military objective. In this regard, a key question is whether an object's *current* or *potential* use makes an effective contribution to military action under the definition's first prong.

Humanitarians often argue that an object's military contributions must be actual or reasonably expected—not simply possible. In their view, US military lawyers are either wrong as a matter of law about the law's flexibility or they are overly credulous of operators' claims that civilian objects might have a military purpose.⁵⁶ HRW argues that "some hypothetical military use" of a civilian object is insufficient as a matter of law to render it a military objective.⁵⁷ One commonly disputed case is NATO attacks on civilian media during air operations in Serbia. AI charged that the United States attacked targets based only on Serbia's *potential* future use of civilian media outlets for military purposes.⁵⁸ In Operation Iraqi Freedom, the United States similarly argued that the Iraqi regime had been known to broadcast songs on television stations as a means of communicating with military forces and therefore that the stations were legitimate military objectives. HRW objected on the basis that it was not clear that the broadcasts *were actually* being used to direct the armed forces.⁵⁹

The US *Operational Law Handbook*, which is issued annually by the International and Operational Law Department of the Judge Advocate General's Legal Center and School, states that classifying an object as a military objective "is dependent upon its value to an enemy nation's war fighting or war sustaining effort (*including its ability to be converted to a more direct connection*), and not solely to its overt or present connection or use" (emphasis added).⁶⁰

The American armed forces' allowance for *potential* contributions to military action is at odds with the humanitarian insistence that the contributions be evident.⁶¹ Outside critics believe that conjectured future contributions often fail to meet the legal standard. While it is "difficult to define a standard of reasonable probability," one NGO argued, "it must certainly stop short of the mere objective *possibility* of use."⁶² The ICRC likewise argues that the determinant criteria must be fulfilled in the circumstances ruling at the time, because otherwise "every object could *in abstracto*, under possible future developments,

e.g., if used by enemy troops, become a military objective.”⁶³ However, from the US military’s perspective, this is an overly restrictive interpretation of the law.

War-Sustaining

A related controversy revolves around the requisite directness of an object’s “effective contribution to military action” in order for that object to be considered a military objective.⁶⁴ The US definition pointedly departs from the language in Protocol Additional (I) to the Geneva Conventions of 12 August 1949 (AP I). The US considers military objectives to include those that may effectively contribute to the enemy’s war-fighting or *war-sustaining* capability. The Army’s annually updated law handbook states, “A decision as to classification of an object as a military objective and allocation of resources for its attack depends upon its value to an enemy nation’s war fighting or war sustaining effort (including its ability to be converted to a more direct connection), and not solely to its overt or present connection or use.”⁶⁵ Joint Publication 3-60, *Joint Targeting*, reinforces this approach by defining civilian objects as “all civilian property and activities other than those used to support or *sustain* the adversary’s warfighting capability” (emphasis added).⁶⁶

How does a war-sustaining contribution differ from a contribution to military action? Some outsiders see them as fundamentally different categories. Critics of the US view argue, “It seems that the category of objects with a ‘war sustaining capability’ is broader than and includes objects making an ‘effective contribution to military action.’”⁶⁷ An ICRC expert concludes that the US position “means to abandon the limitation to military objectives and to admit attacks on political, financial (e.g., the main export industry, the stock market, or taxation authorities) and psychological targets, as long as they include the possibility or the decision (which are two different things) of the enemy to continue war. Those who suggest a large interpretation of the concept of military objectives mention that targeting of bank accounts, financial institutions, shops, and entertainment sites may prove in the long run more destructive than attacks on dual-use targets.”⁶⁸ He argues that AP I effectively excluded “*indirect* contributions and *possible* advantages. Without this restriction, the limitation to ‘military’ objectives could be too easily undermined” (emphasis in original).⁶⁹

Indeed, the United States advanced this broader interpretation during the Kosovo War as it explored attacking the factories and other economic interests of Yugoslavian president Slobodan Milosevic's key political allies.⁷⁰ Planners believed that harming Milosevic's allies' private economic interests would translate into political pressure on Milosevic to end the war. A plain reading of the AP I does not allow targeting the economic interests of civilians where those interests do not contribute to adversary military action. However, where the United States was able to posit a link to war sustainment, the letter of the law could be met—despite the fact that Kosovo was not perceived as a lengthy total war in which industrial production was a critical factor.

American military lawyers would dispute the characterization of this interpretation as broad. Many regard the US position as simply the longstanding American view, backed by the historical record of US attacks on war-sustaining objects. The *Operational Law Handbook* provides little consolation for humanitarian critics.⁷¹ The United States accepts a more attenuated connection between object and contribution than that supported by humanitarian organizations and many states.⁷²

Dual Motivations

A related concern is how easily belligerents can skirt the intent of AP I simply by asserting a lawful reason for attack—even if that reason is not the principal motivation. This reflects a historical pattern of targeting rationalization that we earlier traced through World War II, Korea, and Vietnam. The United States often attacked legitimate military objectives in the hope that their destruction would yield additive or alternative results (e.g., degradation of citizens' morale). It requires only a small additional step to attach a legitimate rationale to an air strike of dubious legality. For this reason, one critic maintains that the law prompts “belligerents to give hypocritical justifications for their attacks.”⁷³

Outsiders' suspicion about targeting motivations sometimes reflected misunderstanding. This appears to have been the case regarding attacks upon Serbian bridges in 1999.⁷⁴ In other instances, though, belligerents offered mixed motivations for target choice, which sowed doubts and vastly complicated legal analysis for outsiders. For example, NATO leaders suggested that attacks on Serbian media facilities

were intended to disrupt the regime's dissemination of political propaganda. Humanitarian groups charged that the attacks were LOAC violations. NATO officials then insisted that the facilities' communications had been integrated into government command and control capabilities, stating that "Yugoslavia military radio relay stations are often combined with TV transmitters but we attack the military target. If there is damage to the TV transmitters, it is a secondary effect but it is not the primary intention to do that."⁷⁵ AI nonetheless maintained that the facilities were civilian objects. There was both a factual dispute and a deficit of trust with regard to the primary motivation for the strike.

The United States and other allies see no reason to refrain from attacking lawful targets that might also yield psychological or political benefits. "Otherwise lawful targeting which secures a coercive dividend is legally unobjectionable," said a NATO military lawyer.⁷⁶ The International Criminal Tribunal for the Former Yugoslavia agreed in this instance that disrupting propaganda was an incidental aim of NATO's primary targeting goal, but the tribunal also noted that seeking to end propaganda would probably not have been lawful as a primary objective.⁷⁷

Outsiders can only judge external statements and actions. When political and military leaders describe their goals differently or when rationales change, legitimate questions surface. Arguments by government legal advisors (for example, that a nation's will to resist *is* a military objective) sometimes intensify doubts about national motivations.⁷⁸ Transparent belligerent intent is critical but not always possible—sometimes even for security reasons. Thus, there are several layers of controversy associated with this topic. Fundamentally, the United States hopes for psychological or political impact from attacks that are otherwise lawful, whereas humanitarian critics suggest that secondary motives may discredit the legality of primary motivations.

We have seen how insider and outsider perspectives on the issue of defining military objectives diverge on various grounds. This summary has only touched upon debate regarding the first prong of the criteria for military objectives; however, disagreements attend the second prong as well.⁷⁹ The discussion shows how the underlying goals and values of actors, traced earlier in this chapter, become manifest in understanding law and where and why the interpretations clash.

The discussion also illustrates an emerging irony regarding the law and civilian protection. As will be shown in chapter 4, normative concerns regarding civilian casualties increasingly drive US behavior, although the United States continues to hew to its more permissive interpretation of the LOAC. Yet even when the United States is able to avoid harming any civilians in a particular strike, tensions between views of the law may persist. On the question of military objectives in particular, the US ability to reduce civilian harm may actually *exacerbate* disagreements about the law. From the military's perspective, humanitarian interpretations of military objectives can have perverse effects on civilians.

Civilian Harm versus the LOAC

Changing military capabilities can upend the law's humanitarian priorities. Advanced USAF capabilities and concepts, as described in chapter 2, have reignited debate about strategic targeting in at least two respects. The first is the breadth of targeting, familiar from the above discussion about military objectives; the second respect is the relationship of temporary effects to military advantage and contributions. Overall, precision and effects-based operations suggest new targeting possibilities that will cause few civilian deaths and contribute to ending conflict. However, new possibilities sometimes run afoul of a humanitarian logic demanding destruction that is directly connected to the enemy's military action.

Some airpower advocates argue that a strict interpretation of the law undermines its humanitarian intent by removing key targets from attack even where their destruction would not cause civilian harm. Precision capabilities enable the United States to target a wider range of objects without causing or with reduced collateral damage.⁸⁰ As explained in our historical survey and in the legal discussion above, the United States has taken a broader view of military objectives, targeting war-sustaining infrastructure and hoping that attacks on targets would have secondary effects on morale and national psychology. If the United States believed that significant civilian deaths still would result from the broader view of military objectives (i.e., if bombing in urban areas would cause levels of civilian harms seen in WWII, Korea, or even Vietnam), it is unlikely that the USAF would seek to pursue these targets. This would reflect sensitivity to civilian

harm, not a changed view of the law. However, since the USAF can now strike urban targets with reduced civilian harm, Airmen see a double benefit in the expansive view: a quicker route to victory that also protects civilians.

The Kosovo air war provided examples of this thinking. As mentioned earlier, the NATO alliance sought to bomb the economic interests of cronies of Serbian president Slobodan Milosevic in the belief that they might pressure him to stop the violence. The idea of attacking economic infrastructure was not new; the novelty lay in prioritizing attacks on facilities (copper smelter, iron works) that were owned by political supporters of the Serbian leader.⁸¹ This offered an innovative and less destructive approach to prosecuting the air war. The attacks were not limited to tank plinking but also avoided the large numbers of civilian casualties associated with bombing of other infrastructure. Yet a narrow definition of military objectives conceivably would have prevented the United States from using such options. The US military is confounded by humanitarians' criticism that, in the name of IHL, would block military efforts to reduce overall civilian deaths.

Airpower's efforts to reduce harm may upend the LOAC in a second respect. By rejecting the destruction of objects in favor of attaining more tailored and less definite effects, air planners undercut their arguments regarding the military advantage or necessity of such attacks. Thus, where the United States seeks to mitigate damage to military targets, it may unwittingly undermine its case for attacking them at all. If the damage to a military objective is only temporary or only slight, the attack can be more easily challenged on the grounds that it fails to provide a definite military advantage—the second prong of the military objectives definition.

This is exactly the direction in which the United States is heading in rejecting destruction in favor of seeking tailored effects. For example, the United States has adapted a nonkinetic weapon that uses carbon fiber filaments to temporarily incapacitate electrical power transformer stations rather than permanently destroying them.⁸² Outsiders could seize upon the temporary nature of the damage to question the military benefits accrued. This is not purely hypothetical. HRW's critique of the bombing of a Serbian television station included the argument that NATO had anticipated only temporary benefits from the strike.⁸³ In that case, broadcast redundancy was the reason for temporary effects. Because the effects were not anticipated

to be permanent, AI questioned the military value of the strike, in this case regarding proportionality, but by the same logic could have challenged the attack's ability to provide a definite military advantage.⁸⁴ The argument shows that limiting the degree of damage to a target—a humanitarian goal—may provide an opening for critics to question the strike's legality.

It is tempting to want to apply rules differently to the United States. After all, Americans regard themselves as the good guys who do not seek to kill civilians and who employ unequalled capabilities to reduce noncombatant harm. However, the LOAC does not apply only to the United States. It is a universal system of rules. It is theoretically possible to parse its standards more finely, calibrating them for states with different characters, causes, or capabilities. For example, one could say in a particular type of war, these specific targets would be military objectives, or if a state had x capabilities, it would be able to deem y type of target a military objective. As a practical or political matter, such nuance is infeasible. Even starting down that route might prove a slippery slope, compromising the law's bedrock principle of distinction. In addition, few foreign militaries can approximate the United States' capacity to attack objects without harming persons. Because LOAC rules must extend to all, not just those nations at the forefront of collateral damage mitigation, their potentially perverse effects are the price of maintaining a legal regime for diverse actors. The humanitarian community is attuned to this need but perhaps less aware of how its push for ever-higher LOAC standards might undermine the global legal regime.⁸⁵

Democratization of Law

While in this chapter I have emphasized differences in perspectives on the LOAC, those differences lie along a spectrum. At the core of the professional LOAC community lies a small fraternity that intensively debates the law's meaning and application. Familiarity among individuals from diverse perspectives helps deflate suspicions and misunderstanding and sands the rougher edges of disagreement down toward their smaller nubs. Where lawyers are free of their institutional affiliations, they can more easily acknowledge imprecision and subtleties in applying law.⁸⁶ “The most capable IHL practitioners, regardless of whether they work for the U.S. or the ICRC, agree on a

great deal of the law,” said one well-respected military lawyer. “Within this group, disagreements tend to be on nuanced or arcane points.”⁸⁷ This guild of experts no longer dominates the public discourse, however, as IHL concepts disseminate more widely throughout international society—where most people are not lawyers and norms hold greater currency than nuances of law.

IHL principles and language allow the civilian outsider to analyze war and engage with military actors. The spread of IHL beyond legal circles and into the mainstream of policy, press, and public discussion reflects the growing human rights movement and the role played by NGOs that monitor the conduct of armed conflict. Engaging the military through law has significant appeal for nonmilitary actors. First, it provides a point of entry into the evaluation of military activity for actors that lack any formal authority over belligerents. The LOAC provides a framework for the human rights critique and a universally recognized lexicon—unlike the operational syntax of a military campaign. LOAC principles are accessible, even if the specific meaning of legal provisions can be arcane. Thus, the law structures a debate in which outside actors can participate. To its adherents, legal argument may appear more powerful than policy or religious or ethical exhortation. Law describes a required, not just desired, standard of behavior for all bound by it. Reference to law can therefore strengthen a moral argument or political claim.

As LOAC concepts permeate the public consciousness, they create greater awareness of the costs and challenges of war and increase pressure on national forces to “fight well.” However, this mainstreaming of LOAC concepts also risks contaminating careful legal analysis with legal posturing and normative opinion. This democratization of the LOAC adds greater uncertainty to the meaning of legal standards. As observers increasingly use legal concepts and language, they often do so without acquiring deep legal expertise. Humanitarians have promoted mainstreaming IHL in order to boost the law’s relevance and impact.⁸⁸ This expands the number of people employing legal concepts that have been explained in simplified form to be readily understood. Activists and advocacy groups may inadvertently or strategically misrepresent the law as they evaluate military action. For example, AI wrote of an attacker’s “responsibility under international humanitarian law to take all possible precautions to avoid harming civilians.” The United States disagrees with this claim as a matter of law.⁸⁹ When such disputed legal positions are reflected as

factual in press coverage, and then absorbed in popular imagination, defining the law itself becomes a political struggle.⁹⁰

An additional challenge in public discourse about law is the conflation of legal and normative argument.⁹¹ This conflation has two dimensions. The just war tradition of moral reasoning employs many of the same concepts and words as the law; yet it is not a legal standard. It is easy to confuse the two modes of argument. Even US political leaders sometimes use language that seems to imply that ethics are the equivalent of legal requirements. Additionally, many outsiders who use legal analysis to evaluate military activities *also* promote minimizing civilian harm and protecting human rights as an absolute goal. Humanitarian advocates sometimes fail to distinguish between the role of legal analysis, on the one hand, and the role of an advocate for civilian protection that exceeds any legal requirements on the other.

These advocates may regard the interweaving of legal and normative argument as strengthening the humanitarian interpretation of the law, but it can create misleading impressions about the legality of states' actions. Some humanitarian advocates privately acknowledge the distinction between a legal floor and higher ethical standard of behavior in war. In a closed session, one NGO representative told US service members, "There are lots of things the United States could be doing that arguably would be legal. But morally, it's better not to do them, especially if they're simply not necessary."⁹²

Advocates sometimes fudge the distinction between law and morality so they can demand the greatest degree of humanitarian protection. In its report on the Kosovo operation, for example, AI argued, "The most powerful military alliance in the world cannot afford but to set the highest standard of protection in this regard."⁹³ While much of the AI report analyzes NATO's compliance with the LOAC, this particular judgment has nothing to do with *legal* requirements for military action.

The UN High Commissioner for Human Rights also seemed to confuse the law with morality. During the air war in Kosovo, she suggested that military actors must be certain that civilians would not be harmed before using force.⁹⁴ "If it is not possible to ascertain whether civilian buses are on bridges," she asked, "should those bridges be blown?"⁹⁵ The suggestion that states forego the use of force if they cannot ensure the safety of civilians reflects a laudable normative concern but does not accurately represent the LOAC.

The law does not require fighting with a handicap. The military may pursue lawful advantage in order to reduce the length and costs of the conflict, including the costs to belligerent forces—a sore spot with humanitarians who claim that the law requires forces to assume more risks for civilians.⁹⁶ Reducing civilian harm is a singular goal, one decoupled from the law's balance with military necessity. No party is required to forego military advantage simply because it is likely to prevail, or could afford to wait, or might suffer fewer casualties in the end. The LOAC recognizes that victory, not minimizing civilian harm, is the purpose of war. Indeed, the law is largely consistent with the American view that short, sharp wars are, on balance, more humane.

Both the military and its critics would do well to acknowledge and respect the distinction between the norm of minimizing civilian casualties and the standards of the law. Humanitarians may wish to make normative or pragmatic arguments that do not rely on contested claims and may in fact be more compelling for military logic.⁹⁷ Humanitarians do not strengthen the law by conflating legal and nonlegal standards; instead, they undermine the law's legitimacy by suggesting it is something that it is not. The democratization of the LOAC may unwittingly dilute law's utility as a standard for guiding or evaluating military actions.

As normative standards have gained power to shape US military actions (as the next chapter shows), the armed forces learned that they could not hide behind claims of lawfulness in explaining civilian deaths. Military forces can act lawfully and still fail to satisfy their humanitarian critics, particularly when those actions cause civilian harm. The US military, with its permissive view of the law, can defend its actions as lawful even where civilian harm results. However, where the underlying objection is civilian casualties—a normative objection—the military's legal defense simply misses the point. The USAF learned this the hard way during the 1990s.

Conclusion

The law has become less useful for understanding how airpower affects civilians. The LOAC continues to play a role in justifying US military activities internally and externally. It remains the primary frame and lever for critics of US military action. But the law is not a

trump card in either military or humanitarian hands. Nor is it the most powerful standard regarding the protection of civilians in armed conflict. Emphasis upon legal compliance may even be counterproductive in promoting US protection of noncombatants in war.

While outsiders have long hoped that regulating war through law might lead to its abolition, the United States has seen law as a means to legitimate and facilitate its “short, sharp wars.”⁹⁸ In keeping with a dominant strand in American military thought, the creator of the first US military code believed that “the more vigorously wars are pursued, the better it is for humanity.”⁹⁹ Consequently, the United States has inculcated the basics of the LOAC into air operations such that they are routine and nearly invisible.

Today, though, the USAF has nearly left the law behind as it pertains to civilian protection. Technology and longstanding USAF tenets of efficiency have combined to create new tools and concepts for a different style of war. Precision targeting combined with effects-based operational logic made it possible to create less destruction and kill fewer civilians while pursuing campaign objectives.

During the 1990s, these capabilities combined with political pressure to reduce civilian deaths as described in the following chapters. The USAF’s main humanitarian project became reducing civilian casualties. While it continued to use the law to explain its actions, the USAF became more responsive to concerns about civilian harm—a norm that exists *outside* of the LOAC and is generally more demanding than the LOAC. Ironically, the law’s relevance for airpower is greatest where the US ability to reduce civilian casualties has reinvigorated debate—as in the broader interpretations of military objectives and how reduced destruction changes calculations of military utility.

Despite the impact of higher normative expectations, humanitarians continue to evaluate US military operations through a legal lens. This is limiting for several reasons. First, military leaders and non-military outsiders will continue to insist on their understanding of what the law requires. Institutional imperatives preclude compromise on questions of law. For humanitarians and military alike, too much is at stake in reevaluating their longstanding views. As a result, the legalization of the critique of US actions freights the exchange with a defense of respective legal positions.

Second, the democratization of IHL has brought legal concepts and language into the mainstream, where they readily mix and fuse with normative arguments. This frustrates military actors, who take

LOAC compliance seriously and expect credit for exceeding legal requirements in their use of force. At the same time, it precludes humanitarians from leveraging the power of the normative expectations. When normative expectations are cast as legal requirements, they can be beaten back with the military's understanding of the LOAC.

Finally, a debate about law impedes more constructive discussions about protecting civilians and obscures the power of norms (rather than law) to shape military behaviors. Both the military and humanitarian communities can hide behind law. It is more productive for outsiders to engage military actors in dialogue about operational choices, practical effects, and future capabilities than to focus on fault-finding in a legal context.

Law is not the primary factor shaping the conduct of war. The next chapter shows how normative—not legal—concerns have translated into very real constraints upon military action, providing a *de facto* enforcement mechanism for normative change. Outsiders should credit the USAF for responding to these nonlegal expectations and recognize the power that norms can hold for shaping the future of armed conflict.

Notes

1. I am concerned here with the LOAC's provisions pertaining to the use of force during combat, as distinguished from LOAC provisions concerning treatment of prisoners, occupation responsibilities, neutrality, or other matters.

2. After the Nuremberg Tribunals, juridical silence followed for a half-century—while nations enforced law within their ranks and battlefield practices evolved. Beginning in the 1990s, ad hoc tribunals and now the permanent International Criminal Court began offering limited additional clarity about war crimes. For enforcement, self-help in the form of reprisals was long the primary means of ensuring reciprocal state compliance. See John Fabian Witt, *Lincoln's Code: The Laws of War in American History* (New York: Free Press, 2012).

3. Thomas Erskine Holland, *The Elements of Jurisprudence*, 13th ed. (1985, repr., Oxford, UK: Clarendon Press, 1924), 392.

4. Powerful countries may face legal judgment, but no independent enforcement power exists for international law—a fact that contributes mightily to skepticism about the law itself. Enforcement of the law hinges on individual states, whose views or actions may be expressed through regional or international bodies. For example, the International Court of Justice ruled against the United States in 1984 in the case related to US support for the Contra guerillas and the mining of Nicaragua's harbor. The United States was able to block UN Security Council (UNSC) enforcement of the judgment. See Harold G. Maier, "Appraisals of the ICJ's Decision: Nicaragua V.

United States (Merits),” *American Society of International Law* 81, no. 1 (January 1987): 77–183. In other instances, such as the International Criminal Tribunal for the Former Yugoslavia, support from the UNSC and actions by states to seize or relinquish suspects allowed the successful enforcement of international law.

5. See discussion in Adam Roberts and Richard Guelff, eds., *Documents on the Laws of War*, 3rd ed. (New York: Oxford University Press, 2000), 7–10.

6. The United States is not a party to the Additional Protocols but regards some of its provisions as customary law. See Michael J. Matheson, “Remarks on the United States Position on the Relation of Customary International Law to the 1977 Protocols Additional to the 1949 Geneva Conventions,” reprinted in “The Sixth Annual American Red Cross Washington College of Law Conference on International Humanitarian Law: A Workshop on Customary International Law and the 1977 Protocols Additional to the 1949 Geneva Conventions,” ed. Martin P. Dupuis, John Heywood, and Michele Y. F. Sarko, *American University Journal of International Law and Policy* 2, no. 2 (Fall 1987): 419–27.

7. For discussion of the concept in a contemporary context, see Scott Horton, “Kriegsraison or Military Necessity? The Bush Administration’s Wilhelmine Attitude towards the Conduct of War,” *Fordham International Law Journal* 30, no. 3 (2006): 576.

8. Named after its author Francis Lieber, a German-American legal scholar with experience in combat, the code sought to distill “the laws of war for the age of democratic nations and mass armies.” Witt, *Lincoln’s Code*, 231.

9. By 1983 the role of operational lawyers was greatly expanded, and they have continued to be deployed at lower echelons in the field. Steven Keeva, “Lawyers in the War Room,” *American Bar Association Journal* 77, no. 12 (December 1991), 55.

10. See, for example, Shannon E. French, “When Teaching the Ethics of War Is Not Academic,” *Chronicle of Higher Education*, 21 March 2003.

11. American government officials stress the legitimacy of US actions (as in the case of the 1991 Amiriyah bunker bombing explored in chapter 4) and emphasize the illegality of adversary tactics (e.g., Victoria Clarke, press briefing, US Department of Defense, 29 March 2003).

12. Roberts and Guelff, *Documents on the Laws of War*, 9–10.

13. The United States objected to several aspects of the Protocol Additional (I) to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, also known as AP I; some are discussed below. For a detailed US military perspective, see William Hays Parks, “Air War and the Law of War,” *Air Force Law Review* 32, no. 1 (1990): 112–45. Among Parks’s objections to AP I is what he sees as the shift of responsibility for the protection of the civilian population away from the host nation and “almost exclusively onto the attacker,” 112. Parks regards AP I as a humanitarian deceit aimed at “off-setting any military advantage a superior enemy force might have—particularly an air power,” 218.

14. Walzer reconciles this rights dilemma as privileging the defense of collective rights over individual rights. See Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, 1977), 136.

15. Roberts and Guelff, *Documents on the Laws of War*. For a discussion of the *jus ad bellum* and *jus in bello* meanings of proportionality, see pages 9–10. The condition that proportionality judgments be based upon information reasonably available to

the commander at the time is known as the “Rendulic Rule,” stemming from post-WWII war crimes trials.

16. AP I, Art. 51.; and Roberts and Guelff, *Documents on the Laws of War*, 449.

17. For a discussion of the limits of proportionality, see Janina Dill, *Applying the Principle of Proportionality in Combat Operations*, policy briefing (Oxford Institute for Ethics, Law, and Armed Conflict, December 2010).

18. Michael Schmitt notes, “Dissimilar value genres—military and humanitarian—are being weighed against each other.” Michael N. Schmitt, “The Principle of Discrimination in 21st Century Warfare,” *Yale Human Rights and Development Law Journal* 2 (1999), 143, 176.

19. Quoted in Amnesty International, *NATO/Federal Republic of Yugoslavia: “Collateral Damage” or Unlawful Killings?; Violations of the Laws of War by NATO During Operation Allied Force* (London: Amnesty International, 2000), 13.

20. Amnesty International, *NATO/Federal Republic of Yugoslavia: “Collateral Damage” or Unlawful Killings?; 24.*

21. Such an approach is suggested in Dinah Pokempner, Marc Garlasco, and Bonnie Docherty, “Off Target on the Iraq Campaign: A Response to Professor Schmitt,” *Yearbook of International Humanitarian Law* 6 (2003), 113.

22. This is the dichotomy described in Michael N. Schmitt, “Military Necessity and Humanity in International Humanitarian Law: Preserving the Delicate Balance,” *Virginia Journal of International Law* 50, no. 4 (2010), 795.

23. Michael Schmitt sees the law’s balance slowly shifting away from military necessity and toward humanity. I agree with this assessment. I see the trend as both a function of the global evolution of human rights norms and as a function of who is involved in shaping and interpreting the law.

24. Marco Sassòli, “Legitimate Targets of Attack under International Humanitarian Law” (background paper prepared for the Informal High-Level Expert Meeting on the Reaffirmation and Development of International Humanitarian Law, Program on Humanitarian Policy and Conflict Research, Harvard University, June 2004), 2, <http://www.hpcrresearch.org/sites/default/files/publications/Session1.pdf>.

25. While Pokempner et al. are refuting claims by a specific former military lawyer, their views can be generalized to apply to the US military as a whole. Pokempner et al., “Off Target on the Iraq Campaign,” 113.

26. Ibid.

27. Ibid.

28. Ibid.

29. Controversy arose when the United States ignored ICRC warnings of torture in secret prisons. See International Committee of the Red Cross, *ICRC Report on the Treatment of Fourteen “High Value Detainees” in CIA Custody* (Washington, DC: ICRC, February 2007), <http://www.nybooks.com/media/doc/2010/04/22/icrc-report.pdf> (accessed January 21, 2012).

30. Military lawyers in discussions with the author; see also W. Hays Parks’s detailed critique of ICRC efforts to promote a “radical shift” from the customary practices in the LOAC in Parks, “Air War and the Law of War,” quote on page 157.

31. Audiotape archives from the Project on the Means of Intervention Proceedings, National Security and Human Rights Program, Carr Center for Human Rights

Policy, Harvard Kennedy School of Government, Washington, DC, 1992–1996. This source will hereafter be referred to as NSHR Proceedings.

32. Pokempner et al., “*Off Target* on the Iraq Campaign,” 113–14.

33. The United States has often loosened prior constraints on the use of force if those constraints appeared to preclude military success (e.g., urban area bombing toward the end of WWII or the expansion of permissible targets during 2011 Operation Odyssey Dawn in Libya). However, it is important to note that where this has occurred, the restrictions had been regarded not as legal requirements but as political constraints (i.e., *more* restrictive than required by the LOAC at that time). Therefore, even when constraints were eased, American officials and lawyers still regarded US military actions as lawful.

34. Witt, *Lincoln’s Code*, 5–6. Francis Lieber, author of the civil-war code of conduct believed that “when war is begun, the best and most humane thing is to carry it on as intensely as possible so as to be through with it as soon as possible,” quoted in Witt, *Lincoln’s Code*, 235.

35. NSHR Proceedings. The concern is not without foundation. As Roberts and Guelff explain, the term *IHL* “can also encompass relevant parts of the international law of human rights.” The authors go on to note that the term *IHL* “could be seen as implying that the laws of war have an exclusively humanitarian purpose, when their evolution has in fact reflected various practical concerns of states and their armed forces on grounds other than those which may be considered humanitarian.” Roberts and Guelff, *Documents on the Laws of War*, 2.

36. W. Hays Parks’s entire article could be said to embody this view. Parks, “Air War and the Law of War.”

37. This example appears to affirm that the norm of minimizing civilian casualties is powerful.

38. One JAG officer explained that air commanders sometimes sought to minimize collateral damage during air operations. “That would have made pilots unnecessarily vulnerable,” the colonel explained. “We had to tell them that they can take a more liberal approach.” Steven Keeva, “Lawyers in the War Room,” 57. “LOAC does not specifically direct a part to take more risk,” a US Air Force deputy judge advocate general said. Maj Gen Charles Dunlap, interview with the author, Washington, DC, 4 December 2009.

39. Frederic L. Borch, “Targeting after Kosovo: Has the Law Changed for Strike Planners?,” *Naval War College Review* 56, no. 2 (Spring 2003): 64–81; and on the origins of the ICRC and the humanitarian agenda of abolishing war, see also Witt, *Lincoln’s Code*, 341.

40. It should be noted that state positions can be wrong, as evidenced by Iraq’s claim that its 1990 invasion of Kuwait was lawful or by Pres. George W. Bush’s claims regarding the legality of certain “coercive interrogation” techniques. While there is little formal adjudication of international law, minority views generally lack standing equal to those of the majority (unless those minority views are supported by a history of customary practice).

41. A prime example is the legitimacy of attacking “war-sustaining” targets, which is discussed below.

42. These would include the 2003 Rome Statute of the International Criminal Court creating the International Criminal Court, the 1997 Mine Ban Treaty, and the 2008 Convention on Cluster Munitions.

43. This list exempts the issue of detainee treatment, which has been covered at length elsewhere: for example, Rigel Rodley and Matt Pollard, *The Treatment of Prisoners under International Law*, 3rd ed. (New York: Oxford University Press, 2009); and Emily Crawford, *The Treatment of Combatants under the Law of Armed Conflict* (New York: Oxford University Press, 2010).

44. See Article 57 of AP I. Roberts and Guelff, *Documents on the Laws of War*, 452–3.

45. AI, for example, insists that an attacker has a “responsibility under international humanitarian law to take all possible precautions to avoid harming civilians.” Amnesty International, “Amnesty International Concerns Relating to NATO Bombings,” news release, EUR 70/69/99, 18 May 1999, <http://www.amnesty.org/en/library/asset/EUR70/069/1999/es/a0255094-fca7-44a3-b147-461723c5f4a5/eur700691999en.pdf>.

46. See, for example, Jim Garamone, “U.S. Regrets Any Loss of Innocent Lives in Afghanistan, Gates Says,” *American Forces Press Service*, 7 May 2009; and Johanna Neuman, “Saddam Keeps Focus on Civilian Toll,” *USA Today*, 7 February 1991.

47. This is especially true regarding discussions of airpower and coercion or dual use targeting.

48. The United States regards some of the Protocol as a codification of customary law. See Matheson, “Remarks on the United States Position.”

49. AP I, Art. 52.2.

50. Where there is doubt, an object normally used for civilian purposes (e.g., a school) “shall be presumed not to be so used.” AP I, Art. 52 (3).

51. Parks, “Air War and the Law of War,” 141.

52. Sassòli, “Legitimate Targets of Attack under International Humanitarian Law,” 6.

53. AP I itself does not mention military forces. However, the commentary to AP I states that “members of the armed forces are military objectives.” International Committee of the Red Cross Commentary 1987, to AP I, Art. 52, sec. 2017, <http://www.icrc.org/ihl>.

54. Some criticize this term as creating an impression that the targets should be protected because of their importance to civilians. See W. Hays Parks, “Asymmetries and the Identification of Legitimate Military Objectives,” in *International Humanitarian Law Facing New Challenges*, eds. Wolff Heintschel von Heinegg and Volker Epping (Berlin, Germany: Springer, 2007), 65–116.

55. The destruction of infrastructure during Operation Desert Storm was criticized for this reason. Human Rights Watch (HRW), *Needless Deaths in the Gulf War* (New York: HRW, 1991), 8–10, 169–90. Questions about the military necessity or benefit of such attacks are independent from the issue of whether a target is a lawful military objective.

56. See HRW lawyers’ critique of arguments advanced by a leading US military law expert. Pokempner et al., “*Off Target* on the Iraq Campaign,” 113.

57. *Ibid.*, 122.

58. There was an independent debate about whether media broadcasts of political propaganda met the criteria of military objective. See the debate about “war sustaining” objects in this chapter.

59. HRW, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: HRW, 2003), 49.

60. US Department of the Army, *Operational Law Handbook 2014* (Charlottesville, VA: Judge Advocate General’s Legal Center and School, August 2014), 23.

61. *Ibid.* The US Army’s operational law manual states that “while the criterion of purpose is concerned with the intended, suspected, or possible future use of an object, the potential military use of a civilian object, such as a civilian airport, may make it a military objective because of its future intended or potential military use.”

62. University Centre for International Humanitarian Law Geneva, *Targeting Military Objectives* (proceedings from an expert meeting, Centre de Conférences de Varembe in Geneva, Switzerland, 12 May 2005), 7.

63. Sassòli, “Legitimate Targets of Attack under International Humanitarian Law,” 3.

64. Article 52(2) in the AP I also requires that the destruction, capture, or neutralization of the objective offers a “definite military advantage.” Roberts and Guelff, *Documents on the Laws of War*, 450.

65. US Army, *Operational Law Handbook*, 23. The logic yields interesting arguments. For example, the Navy’s law handbook in 1995 instructed: “economic targets of the enemy that indirectly but effectively support and sustain the enemy’s war-fighting capability may also be attacked,” citing the example of raw cotton, which Union forces targeted during the American Civil War because it was a source of revenue for the South. US Navy, NWP 1-14M, *The Commander’s Handbook on the Law of Navy Operations*, July 1995, para. 8.1.1.

66. Joint Publication (JP) 3-60, *Joint Targeting*, 31 January 2013, appendix A, para. 4.a.

67. University Centre for International Humanitarian Law Geneva, *Targeting Military Objectives*, 24.

68. Sassòli, “Legitimate Targets of Attack under International Humanitarian Law,” 6.

69. *Ibid.*, 3.

70. William Arkin and Robert Windrem, “The Other Kosovo War,” *InfoSec News*, 30 Aug 2001, <http://www.msnbc.com/news/607032.asp>; and Julian H. Tolbert, “Crony Attack Strategic Attack’s Silver Bullet?” (MA thesis, School of Advanced Air and Space Studies, Air University, Maxwell AFB, AL, 2006).

71. *Operational Law Handbook*, 23.

72. It is worth considering the reciprocity of the logic. Would the United States consider it lawful for belligerents today to attack private US economic targets that were not directly related to military activities?

73. Sassòli uses several examples from the Kosovo air campaign to illustrate his point. Attacking power stations in order to induce regime change, while justifying the attacks as being against dual use facilities is one example; another illustration focuses on attacking private industry in order to undermine regime supporters while claiming that the strikes aimed to keep cigarettes from enhancing the military effort. Sassòli, “Legitimate Targets of Attack under International Humanitarian Law,” 5.

74. Critics charged that NATO attacked bridges on the grounds that military forces might use them in the future, whereas the coalition's primary motivation had been to destroy military communications (fiber-optic cables) that had been installed in the bridges. "Human rights organizations did not accept the military value of the bridge alone and did not understand that the purpose of the strike was to disrupt command and control." Burch, "Targeting after Kosovo."

75. Amnesty International, *NATO/Federal Republic of Yugoslavia: "Collateral Damage" or Unlawful Killings?*, 44.

76. NSHR Proceedings.

77. International Criminal Tribunal of the Former Yugoslavia (ICTY), *Final Report to the Prosecutor by the Committee Established to Review the NATO Bombing Campaign against the Federal Republic of Yugoslavia* (New York: United Nations, 13 June 2000), para. 47, <http://www.icty.org/x/file/Press/nato061300.pdf>.

78. See Parks, "Asymmetries and the Identification of Legitimate Military Objectives," 97.

79. The United States considers the question holistically. The value of each attack is not seen tactically but must be "linked to the full context of war strategy." Parks, "Asymmetries and the Identification of Legitimate Military Objectives," 90. European human rights lawyer Francoise Hampson insists that even a broad view of an attack as a whole must be finite or it would erase the distinctions between *jus in bello* and *jus ad bellum* analysis. See comment in Francoise Hampson, "Means and Methods of Warfare in the Conflict in the Gulf," in *The Gulf War 1990–91 in International and English Law*, ed. Peter Rowe (London: Sweet and Maxwell, 1993), 94.

80. In fact, some observers have argued that becoming so discriminate and precise undercuts the psychological impact and full benefit of strategic bombing. Williamson Murray, "Not Enough Collateral Damage: Moral Ambiguities in the Gulf War," in *Civilians in the Path of War*, eds. Mark Grimsley and Clifford J. Rogers (Lincoln: University of Nebraska Press, 2002), 251–70.

81. Arkin and Windrem, "The Other Kosovo War"; and Julian H. Tolbert, "Crony Attack" Tolbert asserts, "Crony attack attempts to negatively affect the key supporters and advisors of the adversary leader to effect policy change in our favor," 4. Examples cited are the Bor copper smelter and the Smederevo iron works—both bombed by B-2 bombers on 15 May 1999.

82. HRW, *Off Target*, 46.

83. AI also considered Radio Television of Serbia (RTS) a civilian object that should have been immune from attack. Amnesty International, *NATO/Federal Republic of Yugoslavia: "Collateral Damage" or Unlawful Killings?*, 44. It should be noted that humanitarian arguments sometimes conflict. Whereas AI has argued that foreseeably temporary destruction undermines military benefits and therefore makes it more difficult for an attack to meet the proportionality test, HRW has argued that when attacking dual use infrastructure the United States should seek only to incapacitate capabilities temporarily rather than destroy them in order to minimize civilian impact. See HRW, *Off Target*, 42.

84. HRW, *Civilian Deaths in the NATO Air Campaign* (New York: HRW, February 2000), 43, 44.

85. See Sarah Sewall, “Limits of Law: Promoting Humanity in Armed Conflict” in *Law and War*, ed. Austin Sarat, Lawrence Douglas, and Martha Merrill Umphrey (Stanford, CA: Stanford University Press, 2014), 23–47.

86. An example of institutional imperatives at play is HRW’s titling its report on Operation Iraqi Freedom *Off Target*; the message does not capture the conclusion of the report itself. HRW, *Off Target*.

87. Anonymous military lawyer, interview with the author, Newport, RI, 24 September 2012.

88. See, for example, Françoise Bouchet-Saulnier, *The Practical Guide to Humanitarian Law* (Lanham, MD: Rowman and Littlefield, 2007), xv–xxvii.

89. See Borch, *Targeting after Kosovo*; and Parks, “Air War and the Law of War.”

90. This is a source of discomfort for humanitarian IHL experts as well. See Pokempner et al., “*Off Target* on the Iraq Campaign,” 112.

91. An example of the tensions between careful analysis and attention-grabbing public impact can be found in the titles of HRW reports that are more sensational than the analysis within (e.g., *Off Target*).

92. NSHR Proceedings.

93. Amnesty International, *NATO/Federal Republic of Yugoslavia: “Collateral Damage” or Unlawful Killings?*, 25.

94. Steve Boggan, “War in the Balkans: NATO Is Warned on War Crimes,” *Independent* (UK), 5 May 1999, <http://www.independent.co.uk/news/war-in-the-balkans-nato-warned-on-war-crimes-1091503.html>.

95. *Ibid.*

96. The ICTY’s ruling that the NATO flight deck was not unlawful reaffirmed the statist perspective. ICTY, *Final Report*, para. 56.

97. The case for assuming additional risk and minimizing civilian harm during counterinsurgency operations is fundamentally pragmatic, based on assumptions about the requirements of operational success when fighting insurgents.

98. Witt, *Lincoln’s Code*, 184, 279.

99. Quoted in Witt, *Lincoln’s Code*, 235.

PART 2

Impact of Civilian Casualties

Every bomb is a political bomb.

—Gen Michael E. Ryan, USAF, retired

Chapter 4

Air Campaigns of the 1990s

Civilian Casualties Lead to Operational Restrictions

As airpower took center stage during US military operations during the 1990s, it faced unprecedented scrutiny and criticism for causing noncombatant casualties. The heightened scrutiny of airpower was somewhat ironic. By 1990 improved technology had combined with the longstanding airpower tenet of “economy of force” to increase dramatically US airpower’s accuracy and ability to discriminate among targets. Yet as explained in chapter 1, heightened normative expectations combined with other factors such as the transparency of war to make civilian deaths a key criterion by which the world judged the American way of war. Despite airpower’s progress, the expectations were higher still.

This chapter traces how US leaders began to internalize the more stringent expectations of minimizing civilian harm. Chapters 2 and 3 showed that while American political and military leaders sought to avoid intentionally targeting civilians during war, they also relied upon an interpretation of the law of armed conflict (LOAC) that easily accommodated collateral damage. However, the 1990s operations in the Middle East and the Balkans revealed that civilian casualties could be highly costly for political or operational reasons. As a result, US planners became more sensitive to civilian harm in the design of air campaigns. More notably, when significant civilian casualty incidents occurred, US leaders routinely responded by imposing further operational restrictions on airpower.

Over the course of the decade, the United States Air Force (USAF) concluded that civilian casualties led to operational constraints. This realization ultimately prompted institutional change within the service—not simply adaptation *during* air operations. The USAF noted the new realities in professional military education curricula and in doctrine.¹ It also began developing and prioritizing capabilities and tools specifically designed to minimize civilian harm—one of which proved crucial during Operation Allied Force. These USAF innovations are detailed in the next chapter.

This chapter reviews key events during military interventions of the 1990s in order to illustrate how heightened expectations of

civilian protection shaped understandings and restrictions on US airpower.

Operation Desert Storm

Operation Desert Storm was Pres. George H. W. Bush's successful coalition effort to expel Iraqi forces from Kuwait. Formally launched on 17 January 1991, the war featured 42 days of air campaign followed by 100 hours of ground war. The conflict was dramatic—with the visual debut of precision weapons and CNN's coverage of “shock and awe” air strikes in Baghdad—but brief, concluding on 28 February 1991. The US-led coalition of states eventually numbered 34 members, including several Arab states whose support was particularly crucial for political reasons.²

Operation Desert Storm was the first massive combined-arms operation after Vietnam. Air planners enjoyed the autonomy to craft an air campaign that they felt they had lost during Vietnam.³ This was an opportunity to reconceptualize how airpower could be applied and to validate Gen Henry “Hap” Arnold's claim that airpower could be “a war-winning weapon in its own right.”⁴

The initial plan was reminiscent of industrial web targeting but with the twist of inflicting overwhelming paralysis at the outset. Before ground forces crossed the berm, air and naval power were deployed against air defenses and then immediately against strategic targets. Using his model of concentric rings of national power, USAF planner Col John Warden identified within each ring the targets most critical to the regime, striking at the heart of Saddam Hussein's power suddenly and overwhelmingly—not incrementally and halfheartedly. The initial plan's name, “Instant Thunder,” was intended to contrast starkly with the name assigned a gradual escalation campaign in Vietnam.⁵

President Bush did provide an element of early guidance for the conduct of the war. He directed that civilian casualties be minimized in order to demonstrate that the international community's quarrel was with Iraqi president Saddam Hussein rather than the people of Iraq.⁶ In fall 1990, then, the USAF reviewed air weapons system malfunction and human error data, studying the potential risk of civilian casualties in Baghdad.⁷

Air planners sought to reassure the National Command Authorities that they could meet the president's intent with their plans for the air campaign. Colonel Warden claimed that the earlier study illustrated that "pre-mission planning to avoid misdesignation of targets (the principal driver of noncombatant casualties) and the employment of suitable aircraft and weapons systems" could minimize civilian harm.⁸ This emphasis on preplanned targeting to address the challenge of civilian casualties thus became a dominant theme of future air campaigns.⁹

Based on its study of past weapons data, the USAF incorporated civilian protection into its targeting choices and rules of engagement (ROE). As the official history concluded, "coalition planners followed stringent procedures to select and attack targets."¹⁰ These stringent procedures focused on immediate civilian harm, not the potential second-order effects of air strikes. Yet the targeting strategy prominently featured attacks on dual use infrastructure, the destruction of which would produce unanticipated long-term effects on Iraqi citizens. At the time of Desert Storm, air planners' focus on civilian protection in target choice was conceived more narrowly: minimizing direct civilian deaths resulting from the initial strikes.

In addition to targeting choice, planners instituted a variety of procedural and other precautions, improving upon earlier precautionary tactics of the Vietnam War. According to a Department of Defense report, "Attack routes were planned to minimize the results of errant ordnance; the norm was to use PGMs [precision guided munitions], rather than less-accurate gravity weapons, in built-up or populated areas. Attack procedures specified that if the pilot could not positively identify his target or was not confident the weapon would guide properly (because of clouds for example), he could not deliver that weapon."¹¹

However, as the official Desert Storm history pointed out, civilian casualty reduction steps were taken "to the degree possible and consistent with allowable risk to aircraft and aircrews."¹² This means that the USAF did not reduce its emphasis on force protection. Adding civilian protection measures without diminishing force protection is fully consistent with the US view of LOAC, which regards military necessity as including force protection. Indeed, one key Desert Storm air war commander regarded additional civilian protection measures as also antithetical to effective war fighting.¹³

The president's direction about minimizing civilian harm and the nascent development of policy and procedures ultimately had limited impact on air operations beyond the greater precision with which airpower now could be applied. Planners seemed to interpret the guidance and rules as requiring compliance with the "floor" of the LOAC and working within the context of infrastructure targeting strategies and force protection priorities. The approach represented an incremental emphasis on existing tools and concepts rather than a significant alteration or intensification of extant process.

When civilian casualties inevitably occurred and international criticism ensued, the United States responded by deflecting blame and stressing the coalition's good intentions.¹⁴ The war plan included "intensive efforts to show the Iraqis and the world that the responsibility for civilian casualties rested squarely on Saddam Hussein's shoulders and that the coalition would have no choice in the matter."¹⁵ President Bush and others reiterated that the United States was doing everything possible to minimize casualties and was trying to avoid civilian sites "despite the fact that Saddam is now relocating some military functions . . . in civilian areas such as schools."¹⁶ US officials also blamed Hussein for not protecting his citizens, for violating the laws of war, and for shooting surface-to-air missiles that they suggested may have caused civilian deaths.¹⁷ US military leaders further explained that weapons sometimes malfunction, implying that most casualties were the result of technical errors. In response to an appeal to halt the assault, President Bush wrote, "As to the use of lethal force, we have been very careful in the planning of this liberation effort. I think you will agree that up until now, the performance of the Allied Air Forces has been magnificent in the accuracy of its attack and in achieving our goal of limiting casualties to innocent civilians."¹⁸

US officials argued that the "apparently low number [of civilian casualties] clearly reflects Coalition efforts to minimize civilian casualties."¹⁹ When queried, though, US officials denied having any information about Iraqi civilian deaths.²⁰ One military official specifically stated, "We are not in the body count business."²¹ US leaders were caught in a contradiction. They sought to justify coalition actions as laudable because they caused few civilian casualties, even though they rejected numbers as a metric and refused even to compile them.

For a month this approach appeared to suffice. There was limited domestic American criticism of the war, and allies largely reiterated

the US public commentary in response to civilian casualty allegations.²² As one airpower chronicler put it, “The popular image of the Desert Storm air war remains one in which the effects of allied air power often seemed barely short of technological magic.”²³ However, despite the magic of precision, the US effort ultimately was forced to confront the issue of civilian casualties.

Bombing the Amiriyah Bunker

The realities of war’s impact on civilians broke through on 13 February 1991.²⁴ The air strike on a military bunker in Baghdad proved to be a watershed for the USAF—one with a “spectacularly bad effect.”²⁵ The *Washington Post* melodramatically called it “the day illusions [about a bloodless war] shattered.”²⁶ The event is worth examining in detail because it was the most significant US-caused collateral damage incident since the Vietnam War, and its political and operational impacts illustrate the power of normative expectations about civilian casualties.²⁷ The Amiriyah bunker incident also shows that the civilian protection norm is more demanding than the legal standards emphasized by the United States.

The bombing was neither reckless nor careless, yet its consequences were severe. The decision to target the shelter was made only after extensive study and deliberation, and it was clearly believed to be a traditional military target—not an esoteric military objective. Ultimately, the decision to strike the shelter located in a middle-class suburb of Amiriyah, which Allied forces called Al Firdos C3 bunker, hinged on the quality of the intelligence. Central Intelligence Agency analysts believed it was a war command bunker that Iraqi secret police had occupied.²⁸ Outside the bunker hung a sign reading “Department of Civilian Defense–Public Shelter Number 25” in English and Arabic. Air planners initially resisted putting it on the target list because they considered the evidence of its military utility to be insufficient. Gradually, additional intelligence information accumulated, and planners eventually moved the target onto the master air attack plan.²⁹ A key intelligence officer concluded that there was no evidence that civilians were taking shelter inside.³⁰

On 13 February, pilots in two Lockheed F-117 Nighthawk stealth ground-attack aircraft dropped GBU-27 Paveway III bunker-busting bombs on the structure. An immediate surge in emergency radio traffic in Baghdad indicated what had gone wrong. USAF Lt Col David

Deptula called Brig Gen Buster Glosson, US Central Air Force (USCENTAF) director of campaign plans, to explain that civilians had been in the bunker and that the carnage would be on CNN shortly.³¹ Glosson told Deptula, “Listen, on the basis of the information we had available there was absolutely no reason not to target that bunker.” Glosson also called the air wing commander, instructing him to make sure that the pilots did not feel personally guilty.³²

The chairman of the Joint Chiefs of Staff (CJCS), Colin Powell, went to the White House with the evidence used to select the target. “Mr. President,” he said, “we don’t have a case that you could take to the Supreme Court, yet we passed the commonsense test. We are convinced that this was a military target. We don’t understand why those civilians were in there. . . . We stand as strongly behind the decision after the fact as we did before the fact.”³³

Due to modern communications, the carnage quickly gained local, then global, attention. “By midmorning five thousand Iraqis stood outside the shelter, watching. . . . For the first time in the war, Western television cameras filmed without censorship.”³⁴ A journalist described the horrifying scene: “For hours rescuers lugged victims out into the morning light, sometimes vomiting from the stench or collapsing in anguish beneath their unbearable loads.”³⁵ Iraqi minister of foreign affairs Tariq Aziz initially claimed that 400 civilians had been killed, although the government would later give the number of 204 deaths to the United Nations Human Rights Commission.³⁶

International Reaction

The news dominated international headlines and airwaves for days, although the international response to the civilian deaths varied. Governments that had opposed the war predictably seized upon the incident to attack the United States. There were massive demonstrations in Jordan. Libya called the event an appalling crime committed by America. Sudan’s foreign ministry called it a “hideous, bloody massacre” that aimed “to destroy the Iraqi people.”³⁷

US officials publicly defended the attack. They marshaled the evidence used to justify the strike and called the bunker a legitimate military target.³⁸ White House spokesman Marlin Fitzwater blamed Saddam Hussein for using human shields. He stated, “America treats human life as our most precious value. That is why, even during this military conflict in which the lives of our servicemen and women are

at risk, we will not target civilian facilities.”³⁹ Allies within the US-led coalition largely followed the US lead in publicly blaming Hussein for the deaths.⁴⁰

Yet US leaders were worried. Regardless of whether it might have been possible to know the truth about the bunker, the facts of Amiriyah were simply inconsistent with President Bush’s promise to spare civilians. The world expected the coalition to attack the regime, not the people, especially given the tools at its disposal. Not only was the US technologically superior, it had touted its precision capabilities and publicly released video of precision-guided munitions traveling directly down building airshafts.⁴¹ Yet in one air strike, the United States killed a greater number of Iraqi civilians than the number of US combatants lost during the entire war.

The incident plainly illustrated the vast difference between a legal strike and a violation of the civilian protection norm. One observer noted, “The American claim that [the bunker] had been a legitimate military target . . . became irrelevant once it was revealed that three hundred women and children from families of the military elite had sheltered there and had been incinerated.”⁴²

Restricting Operational Freedom

While the Pentagon and US Central Command (USCENTCOM) publicly “circled the wagons” after Amiriyah, according to two seasoned observers, “privately it was a different matter.”⁴³ In addition to the horror of the unintended deaths, the bombing placed at risk everything the Bush administration had worked toward in its war effort. President Bush had invested enormous personal effort to obtain international political support.⁴⁴ The West had gained the blessing of many Arab leaders to use force against another Muslim state. International support yielded United Nations (UN) authorization, nearly ideal basing infrastructure, and generous financial support, as well as military coalition partners. President Bush had made political unity his signature.

With the massive civilian carnage, Secretary of Defense Dick Cheney and his deputy believed a political threshold had been crossed.⁴⁵ The official USAF lessons learned analysis described the Amiriyah incident as a “dangerous story,” because of its potential impact upon support for the war not just domestically but among Arab and Western European countries of the coalition.⁴⁶ National Security

Advisor Brent Scowcroft and his deputy, Robert Gates, “worried not only about American public opinion but also about sentiments abroad. Solidarity within the coalition—as well as support from the Soviets, the Chinese, and the Arab world—would be important if sanctions were to be maintained against Iraq after the shooting stopped.”⁴⁷

The theater commander, Gen Norman Schwarzkopf, US Army, immediately “recognized that the coalition had major press and political problems.”⁴⁸ USAF leaders became concerned about their continued ability to use airpower and began considering tactics that might help prevent a similar incident.⁴⁹ Brigadier General Glosson concluded that “things would never again be the same.”⁵⁰

It was General Powell who swiftly “moved to reign in the air campaign.”⁵¹ Well-schooled in the political and bureaucratic ways of Washington, he was sensitive to his civilian bosses’ reaction to Amiriyah.⁵² Powell feared that “another massacre like Al-Firdos would destroy the allies’ moral standing.”⁵³ He explained to Schwarzkopf that targeting decisions had “policy and political overtones,” and he warned that the allies could not “take a chance on something like this happening again.”⁵⁴ Specifically, he believed that if more such incidents occurred, the Desert Storm coalition would be undone.⁵⁵ International reactions to civilian casualties made the war effort itself appear at risk. Powell recalculated the US interests.

After Amiriyah, Powell questioned whether each target’s destruction was required for prosecuting the war.⁵⁶ As he described it, the questioning was not intended to “second-guess every mission, but as a safeguard against imprudence.”⁵⁷ In light of Powell’s post-Vietnam efforts to promote military freedom of action, his reaction to Amiriyah was a great irony. Powell was violating core precepts of his own “doctrine,” which demanded autonomy for field commanders and the decisive application of force. General Schwarzkopf, commander of the coalition forces, complained that while CJCS Powell was a political genius, he lacked “the stomach for war.”⁵⁸

The day after the Amiriyah bombing, Brigadier General Glosson’s aide noted in his journal, “CINC [Schwarzkopf] has big concern over cities. Receiving pressure from Chairman not to hit urban areas in Baghdad or urban targets anywhere. Urban targets now being approved in Washington.”⁵⁹ Suddenly, Glosson had to justify every mission beforehand, initially verbally and later through a formal written

process.⁶⁰ Tighter control, some might argue micromanagement, was the underlying response to the civilian deaths.

Air commanders sought to maintain their operational freedom. When Brigadier General Glosson recounted the new restrictions, Lieutenant Colonel Deptula proposed redefining “downtown Baghdad. . . . How about making it just the central business district?” he suggested.⁶¹ Additionally, General Chuck Horner, USAF, maintained that if a target had been very important, he could have obtained permission to strike it.⁶²

Nonetheless, civilian protection concerns resulted in a ban on urban air operations for five days, which then transformed into a presumption against any strikes in Baghdad through the end of the air campaign. Bunkers that could be used as shelters and bridges were now completely off limits.⁶³ As a result, only five additional targets were hit in Baghdad over the next two weeks until the campaign’s end.⁶⁴ “To the Air Force,” write Michael Gordon and Bernard Trainor, “it seemed as if the political fallout from the Al Firdos raid had accomplished what the Iraqi air defenses could not: downtown Baghdad was to be attacked sparingly, if at all.”⁶⁵ The official lessons learned report concluded, “The strategic consequences of this attack were considerable. To all intents and purposes the civilian losses ended the strategic air war campaign against targets in Baghdad.”⁶⁶

The Amiriyah incident changed the calculus of US political and military leaders of the military costs and benefits of continued air strikes.⁶⁷ Political and military leaders became concerned about the political fallout of the bombing and what it would mean for the war effort. Powell in particular worried that the carefully crafted coalition might crumble even this far into the effort. The costs of potentially losing such carefully accrued material and political benefits now outweighed the added benefit of striking additional strategic targets.

In fact, US operational leaders were wrong about political sensitivity at home. The Amiriyah bombing had little effect upon *American* public opinion, in part because US citizens largely believed what their government had told them about the incident. Accordingly, 80 percent of Americans blamed the Iraqi government for the civilian deaths. Only 13 percent said the United States should take greater precautions to avoid civilian casualties.⁶⁸ The responses reveal a high degree of trust in government statements and military actions. Domestic concerns about civilian deaths were not problematic for the conduct of the war. The civilian protection norm ultimately mattered to US leaders for

other reasons. Coalition partners, political allies, neutral governments, and global opinion indirectly affected the United States' ability to continue prosecuting the conflict or to achieve other foreign policy goals. The same set of concerns would reemerge in force during the last air campaign of the decade.

Iraq: No-Fly Zones and Desert Fox

From the end of Desert Storm until the invasion of Iraq in 2003, the United States, along with the United Kingdom and other nations, maintained “no-fly zones” in the south and north of Iraq. The northern effort began with Operation Provide Comfort, a relief and protection operation to help Iraqi Kurds fleeing government forces. In January 1997 the effort transitioned to a pure no-fly zone called Operation Northern Watch.⁶⁹ Operation Southern Watch commenced in 1992 to prevent the Iraqi government from persecuting Shiite citizens who had rebelled against the government.⁷⁰ Both no-fly zones were also intended to help enforce extant UN resolutions regarding Iraq.

Maintaining the no-fly zones for over a decade proved operationally challenging. Avoiding civilian harm remained a significant concern throughout the course of the operations. Iraq placed its antiaircraft batteries near civilians and protected sites in an effort to induce the coalition to cause civilian casualties. Pilots were allowed to strike Iraqi antiaircraft threats only under strict ROE designed to avoid escalation and civilian harm.⁷¹ The ensuing “cat and mouse” game increased institutional sensitivity to collateral damage and expanded familiarity with weapons choice and effects.⁷² While some air proponents complained that aircrews were losing their high-intensity combat readiness, the operations provided experience that would prove extremely useful.

The air operations generally stayed below the political radar. Apart from a friendly fire incident in April 1994, the coalition avoided aircraft losses. Iraq sporadically reported civilian casualties, and the United States occasionally admitted that its bombs had hit civilian areas—even if US forces could not confirm deaths.⁷³ Overall, suspicions of Iraqi propaganda and limited press access diluted the impact of claims regarding civilian casualties.

In 1998 the United States and United Kingdom launched an additional four-day air campaign called Operation Desert Fox. This was a

short but intense aerial bombing effort designed to degrade Iraqi capabilities to produce weapons of mass destruction. The campaign both followed and intensified the breakdown in the UN inspection regime against Iraq. Iraqi officials said that as many as 70 civilians had been killed.⁷⁴ Perhaps because the effort was so brief, there was little traction for these claims either politically or operationally.

No-fly zones and the associated attacks in Iraq continued. However, humanitarian attention instead focused on the suffering caused by international sanctions. The civilian death toll from this “non-lethal” tool of foreign policy was staggering, and losses were exacerbated by the Iraqi government’s cynicism and selfishness, as well as physical damage to infrastructure inflicted during the first Persian Gulf War. Sanctions were estimated to have caused hundreds of thousands of Iraqi deaths.⁷⁵ Successive UN humanitarian coordinators for Iraq expressed concern about the impact of sanctions on civilians. In 1999 coordinator Hans von Sponeck also turned his attention to compiling records of Iraqi civilian deaths from the air strikes.⁷⁶ The United Kingdom and United States charged that he was exceeding his mandate as he reported that over 100 civilians had been killed.⁷⁷ Yet compared to sanctions, civilian casualties from the bombing were almost invisible.

Airmen had endeavored, with significant success, to avoid civilian casualties while enforcing the no-fly zones, going so far as to experiment with a nonexplosive bomb (discussed in chapter 5). They viewed their ability to minimize collateral damage and avoid escalation as an unsung success, receiving little recognition or reward from Washington. Avoiding civilian casualties was a “nonbarking dog”—an achievement that was invisible until it suddenly failed. USAF leaders were frustrated that the operations consumed massive human and material resources yet garnered so little credit.⁷⁸

Operation Deliberate Force

While the Persian Gulf remained a busy theater of air war for over a decade, the Balkans diverted global attention from the Middle East and prompted two separate US/NATO aerial bombing campaigns in the mid-1990s and then in 1999. Shortly after the fall of the Soviet Union, the state of Yugoslavia began to dissolve into widespread armed conflict among Serb, Croat, and Bosniak factions. The Bosnian Serb Army’s genocide against Muslim Bosniaks—and particularly the

brutal siege of Sarajevo—came to define the conflict, although all factions committed atrocities. The UN provided largely ineffectual peacekeeping forces, and UN leaders evinced discomfort in employing the NATO airpower dedicated to support the UN effort. In July 1995 the Bosnian Serb Army massacred some 8,000 Bosnian Muslim males in the town of Srebrenica, while UN peacekeepers on the ground failed to intervene (their requests for airpower having been denied by higher-ups).⁷⁹ The ensuing outrage prompted increased UN willingness and new ROE to employ offensive airpower to help resolve the conflict.⁸⁰

Operation Deliberate Force, the US-led NATO air campaign, aimed to compel a negotiated settlement to the conflict in the former Republic of Yugoslavia.⁸¹ For 12 days between 30 August and 20 September 1995, NATO aircraft bombed Bosnian Serb military forces and equipment. Concerns about civilian casualties helped explain the UN's initial reluctance to employ airpower; civilian protection measures during Operation Deliberate Force were therefore central to the air strategy.

While coalition forces in Iraqi no-fly zones sought to reduce civilian harm during their enforcement efforts, planners viewed limiting collateral damage as a *prerequisite* for NATO's use of airpower in Bosnia. This was not an official requirement formally imposed upon Gen Michael Ryan, USAF, commander, Allied Air Forces Southern Europe, and leader of the air campaign. General Ryan regarded the need to minimize civilian harm as self-evident.⁸² The conflict would be fought by consensus (as NATO required), and bombs would be dropped in NATO's backyard. An authoritative study of the operation concluded that if "NATO and UN leaders expected enough collateral damage to give the Serbs a political lever, they probably would not have approved initiation of Deliberate Force, or if such damage had begun, they probably could not have sustained the operation politically for long."⁸³ Minimizing civilian harm was understood to be the condition that made it possible to use force at all.⁸⁴

As the Combined Force Air Component commander (CFACC), General Ryan internalized this understanding.⁸⁵ He "personally chose and approved each target and placed certain restraints on delivery means and methods."⁸⁶ He refused to delegate decisions because he felt that he should be held accountable for the political implications of targeting.⁸⁷ His detailed management style "met with some resistance from theater Airmen."⁸⁸

The campaign applied force incrementally, up a tiered ladder of targets, rather than in a swift decisive blow. However, target choice itself was not controversial. Colin Grey put it succinctly: “The focus on the campaign was ‘distinctly military.’”⁸⁹ Most of the targets within the progressively demanding “three tiers” were indisputably military objects: Serb artillery and mortars used to shell “safe areas,” air defense systems, weapons depots, and munitions storage sites. Communications systems and a limited number of bridges and roads could have been considered dual use objects, but these were clearly connected to Bosnian Serb military activity, and their targeting was not a topic of humanitarian criticism.⁹⁰

During Deliberate Force “everything from rules of engagement to aircraft, weapons, and tactics selections was driven to some degree by concerns about collateral damage.”⁹¹ Because many targets were in close proximity to civilians, General Ryan placed great emphasis upon tactical mitigation of the risk of civilian casualties. These targets “were not struck unless planners could come up with a combination of weapons and tactics that virtually precluded an errant weapon from causing unintended harm.”⁹² Operation Deliberate Force employed a far higher percentage of precision weapons than were used in Operation Desert Storm (69 percent compared to 8 percent). Many additional precautions were prerequisites for dropping ordnance, and these precautions often increased the level of risk that pilots were forced to assume.⁹³

While the operation featured the gradual and constrained use of force, it achieved its objectives at what NATO judged to be low costs. Two French aviators were shot down and captured. Fewer than 30 civilians were killed.⁹⁴ The bombing helped lead to a negotiated end to the conflict, and Operation Deliberate Force was perceived as a significant success. This vindication of airpower, despite severe operational constraints, was a harbinger of the next Balkan air campaign.⁹⁵

Operation Allied Force

From 24 March to 11 June 1999, NATO conducted Operation Allied Force (OAF) to pressure Yugoslavian president Milosevic to halt human rights abuses in Kosovo.⁹⁶ Despite its avowedly humanitarian goals, the operation was controversial from the outset. From an international perspective, the operation was illegal. The UN Security

Council had not authorized it, nor was it an exercise of self-defense as allowed under the UN Charter. Within the United States, the intervention was perceived as a “war of choice” rather than one of necessity. The lack of widespread domestic and international political support, coupled with its humanitarian rationale, only heightened sensitivities to how the war was fought. The international concerns highlighted the importance of avoiding civilian harm (to be consistent with humanitarian objectives), while domestic concerns underscored the importance of limiting the risks and costs of US participation.

For both political and military reasons, then, airpower was again the tool of choice and NATO again provided the coalition architecture for the operation. The United States contributed most of the military assets and capabilities.⁹⁷ However, the operation featured “infrastructure, transit and basing access, host-nation force contributions, and most importantly, political and diplomatic support provided by the allies and other members of the coalition.”⁹⁸ Based on the experience of Operation Deliberate Force, planners initially anticipated that the aerial bombing would focus on military targets and last just a handful of days; however, both assumptions proved very wrong. As NATO expanded its military efforts over the course of the air campaign, it was forced to seek wider support—largely overflight rights—from additional states.

Coalition members sometimes had different views of the conflict, divergent approaches toward the use of force, and competing understandings of the civilian protection norm and international humanitarian law more broadly.⁹⁹ As in Deliberate Force, targeting choice was nominally delegated to the NATO secretary general but in practice required consensus among NATO members. The length of the campaign and the controversy about nontraditional targets made this process unwieldy. During NATO deliberations, the power of members’ views reflected the significance of their role in the conflict. US Secretary of State Madeleine Albright sought to maintain coalition unity through daily diplomatic conference calls with the foreign ministers of the other “Quintet” countries (the United Kingdom, Germany, France, and Italy).¹⁰⁰

The United States, the central coalition actor, recognized from the outset that civilian deaths could prove to be NATO’s Achilles’ heel. Because the operation was cast as a humanitarian intervention, coalition members were particularly sensitive to the irony of killing civilians in the name of protecting them. Political legitimacy was especially cru-

cial given the operation's disputed legal authority. Civilian casualties would only further antagonize states already critical of the intervention's legal status. From the outset, then, US and NATO leaders underscored the coalition's commitment to civilian protection. US secretary of defense William Cohen vowed, "We will do everything in our power to minimize the damage to innocent civilians."¹⁰¹ Other leaders promised "extraordinary efforts" or "all possible measures" to avoid civilian casualties.¹⁰²

Yet NATO's sensitivity to civilian protection was qualified by a competing political priority.¹⁰³ Protecting aircraft was also a chief "measure of merit" or criterion for the air campaign.¹⁰⁴ NATO Supreme Allied Commander (SACEUR) Gen Wesley K. Clark's logic was straightforward: if NATO members lost forces, they might then end their support for the war. He also saw force protection as a political necessity—particularly an American political necessity—that was somewhat in tension with civilian protection.¹⁰⁵

Targeting: From Tactical to Strategic

NATO's initial strategy of gradualism was an effort to reconcile the tensions between protecting forces and protecting civilians. The strategy also sought to balance attacks on tactical or traditional military targets (derided as "tank plinking") with attacks on strategic targets that might yield more decisive effects. As General Clark later wrote, political leaders were holding the Airmen back, "because they wanted something more limited, more *diplomatique*."¹⁰⁶ NATO hoped that minimal bombing would suffice, as had been true during Operation Deliberate Force. Unfortunately, as chroniclers of the conflict wrote, NATO had no backup plan.¹⁰⁷ When the initial list of air defense targets was exhausted three days into the war, the coalition expanded the war to a second, broader set of targets—principally military forces and infrastructure in the south. However, this effort also proved inconclusive.¹⁰⁸

In late April, NATO leaders pledged to increase military pressure; however, they refused to grant broad discretion to military commanders to hit strategic targets. These targets were more controversial for several reasons: the political symbolism of their location in Belgrade (not Kosovo), NATO debate about their legality as military objectives, and the potential for civilian harm.¹⁰⁹ Kosovo Forces Air

Component commander Lt Gen Michael C. Short in particular sought to attack the “head of the snake” and forego the tank plinking, but NATO’s political leaders wanted to avoid killing civilians—even as they ratcheted up the military effort.

This complicated an already complex process of selecting and phasing attacks on targets.¹¹⁰ During Desert Storm, the US military had directed the targeting process without detailed political guidance—until the Amiriyah incident prompted greater scrutiny. During OAF, in contrast, each of the nearly 2,000 fixed targets was independently evaluated pursuant to both the law of war and “the law of coalition politics,” which at its core was the desire to avoid civilian casualties. More than half of these targets required political approval at the highest levels.¹¹¹ US president Bill Clinton became personally involved. He met with his secretary of defense, chairman of the Joint Chiefs of Staff, and national security advisor “several times a week to go over the high-profile targets in an attempt to maximize damage to Milosevic’s aggression while minimizing civilian casualties.”¹¹² This targeting review process occurred in parallel with the NATO process.¹¹³

Lawyers were deeply involved, working to clarify and harmonize the disparate concerns of coalition participants and ensuring that strikes could be defended publicly.¹¹⁴ In just the first few weeks, up to half of the proposed strike missions were aborted due to weather and “the refusal of some allies to approve certain target requests.”¹¹⁵ Disputes about targets and acceptable levels of civilian harm frequently emerged among allies, most prominently regarding the legality of targeting media facilities but also for other dual-use infrastructure.¹¹⁶ NATO’s military lawyers remained uncertain about the legality of destroying the electrical grid.¹¹⁷ Even where concerns may have been political (e.g., one state’s desire not to unduly punish Belgrade), national objections were often cast as a matter of law.¹¹⁸ Perhaps this was because the law was believed to provide greater authority.¹¹⁹ As noted in chapter 3, the United States held an expansive view of the law. Yet US officials were also able to argue that proposed attacks would not necessarily cause extensive civilian casualties.¹²⁰

The target approval process underscored the fact that the permissive US view of LOAC—and the underlying assumption that this constituted compliance with the civilian protection norm—remained a minority opinion even within the alliance.¹²¹ The distinction in perspectives eventually forced the United States to develop a separate

approval process for targets that the United States was willing to strike independently.¹²²

In addition to the constraints of the target approval process, the ROE for the operation were restrictive. They were similar to those used during Deliberate Force, a peace operation in which adversaries had deployed minimal air defenses. Now these constraints applied to a major combat operation against a robust air defense network. The US vice director for strategic plans and policy, Maj Gen Charles F. Wald, called these constraints the strictest he had seen.¹²³

Civilian Casualty Sensitivity and the Coalition

As the air campaign continued through April without apparent success, civilian harm became a growing concern. Preventing civilian harm in a campaign of this magnitude was impossible.¹²⁴ This was particularly true given the urban terrain and the Yugoslavian forces' use of deception, human shields, and other tactics.¹²⁵ The transparency of the war magnified the effects of civilian casualties on political and military actors. Yugoslavian government officials, international reporters, and citizens freely roamed the battlespace, recording events on videotape and blogging on the Internet. The Kosovo air campaign was the rare conflict in which one could count civilian casualty incidents (30) and deaths (500) almost exactly and in near-real time.¹²⁶ Moreover, most deaths (two-thirds of the total) were the result of just 12 incidents. The discrete and highly visible nature of the incidents enhanced their impact upon the coalition's conduct.

Military communications and video technology also enhanced real-time oversight from higher military and political levels, and with this came restrictions and second-guessing about decisions that previously had been judged only in hindsight.¹²⁷ It was not just pilots that felt the chain of command looking over their shoulders. The air war commander, Lieutenant General Short, felt micromanaged by his boss, General Clark.¹²⁸ Clark, in turn, felt national capitals and the press watching his every move.¹²⁹ As Clark put it, "each incident of accidental harm to civilians sent 'shock waves up and down through NATO.'"¹³⁰

NATO allies repeatedly called for additional care during air strikes, voicing concerns during NATO deliberations and through outside consultations such as the daily Quintet calls.¹³¹ There were two "flavors" of

concern—the generic sensitivity to how the alliance or a nation would be perceived by the world and the more specific concerns of individual states regarding their domestic politics and publics. Sensitivity to international opinion was a “constant and a background factor” in shaping NATO’s views; in other words, it did not rise and fall during the course of the campaign.¹³² States making arguments for or against targets would often reference this generic sensitivity to civilian casualties, but in the words of a participant, the generic argument was “open to manipulation.”¹³³

However, domestic public opinion inside NATO states also loomed large, particularly given public protests against civilian casualties that were held in several capitals. When the civilian protection sensibility might impact a government’s political options or even future, it became a more urgent factor shaping alliance deliberations. European heads of state occasionally warned that their governments would fall if attacks on certain targets were carried out.¹³⁴

Civilian casualties threatened the operation because Clark believed that the United States could not fight the war alone.¹³⁵ As James C. O’Brien, special presidential envoy for the Balkans during the Clinton administration, told me, “Allied concerns were intense and ongoing and so had more direct impact on decisions about particular targets. This was especially true with regard to allies whose logistical support was needed for the campaign.”¹³⁶ Unsurprisingly, this included Quintet members Italy, which contributed bases, and France, which was important for overflight rights, and other Eastern European nations that eventually allowed bombing runs over their territories.¹³⁷ NATO was concerned, in turn, that “if the Italian and German governments would have been forced out of the coalition . . . the use of their bases [would have been] lost.”¹³⁸

Inside the alliance, tensions among NATO members surfaced in the press, sometimes directly from the statements of foreign leaders themselves.¹³⁹ A representative account described intensifying internal coalition demands to avoid civilian casualties, concluding, “As the toll rises—and, as the bombing intensifies, it almost certainly will—the North Atlantic Treaty Organization faces a moral and political conundrum.”¹⁴⁰

US leaders became concerned that NATO civilian casualty concerns could prevent a military victory by splintering the coalition itself.¹⁴¹ On more than one occasion, Clark warned Washington not to pursue a particular target because “the Allies may walk away from

this thing.”¹⁴² Clark later noted, “We always maintained that no single target or set of targets was more important than NATO cohesion. This was the most crucial decision of the campaign.”¹⁴³

Civilian Casualty Incidents and Tactical Restrictions

In addition to exercising veto power over bombing in Belgrade, the allies raised specific concerns after each high-profile incident in which civilians died.¹⁴⁴ As a result, US leaders occasionally altered decision-making processes and military tactics in order to reduce civilian harm further—by pausing bombing, forcing pilots to assume more risk by flying lower, and temporarily banning cluster munitions. The additional restrictions were meant to assuage other NATO nations’ concerns about civilian protection in order to maintain the coalition and win the war. As one participant summarized the dynamic, “concern over public [reaction] was an internal constraint, allied reaction an external constraint. The latter was less vulnerable to interpretation or dismissal.”¹⁴⁵

Flight Deck

One of the most dramatic changes entailed forcing pilots to fly at lower altitudes, thereby assuming greater risk. Lieutenant General Short had imposed a 15,000-foot flight deck on pilots, requiring aircraft to fly above the height of small arms and shoulder-launched FIM-92 Stinger missiles.¹⁴⁶ The flight deck did not eliminate the threat from surface-to-air missiles, but Yugoslavian forces had shut down their anti-aircraft systems early in the conflict to avoid detection and potential destruction.

While increasing force protection, the flight deck challenged pilots’ ability to see what they were bombing. Flying at 15,000 feet made it more difficult to visually identify targets or confirm the presence of civilians at risk. As Lieutenant General Short acknowledged, “Under the limitations I had placed on the crew, it was inevitable that we were going to drop a bad bomb.”¹⁴⁷

In fact, there were several bad bombs. On 12 April a NATO plane attacked the Grdelica Bridge in Serbia just as a civilian passenger train was crossing, returning to restrike after the initial pass. Roughly a dozen civilians died. Two days later at Djakovica, Kosovo, NATO aircraft fired on a convoy composed largely of tractors and wagons,

killing over 70 Albanian refugees. The pilot appeared to have mistaken the group for a military convoy.¹⁴⁸

Critics charged that NATO was mistakenly killing civilians because they preferred protecting pilots. Public and coalition pressure mounted to stop striking categories of targets (i.e., bridges) or improve visual confirmation.¹⁴⁹ Lieutenant General Short continued to insist that the flight deck was necessary to protect aircraft. Experts emphasized that 15,000 feet was the optimal height from which to release PGMs.¹⁵⁰ However, there was no doubt that the height complicated visual confirmation of targets. The USAF did not want to place entire categories of targets off limits.

Thus, shortly after the Djakovica bombing, Short's deputy, Brig Gen Daniel P. Leaf, proposed an adjustment to address civilian protection.¹⁵¹ He suggested lowering the flight deck to 8,000 feet, with the option to fly even lower to verify targets.¹⁵² Suddenly, what had been out of the question became part of the special instructions to pilots. Civilian casualties led to significant ROE adjustment.¹⁵³

Munitions

Particular weapons proved controversial—beyond the general question of their precision. During the Kosovo campaign, fewer than 30 percent of the munitions were precision weapons, a lower percentage than that used during Operation Deliberate Force four years earlier.¹⁵⁴ The Kosovo campaign featured a new generation of GPS-guided munitions—prominently including the Joint Direct Attack Munition—that could nonetheless result in horrific mistakes when its coordinates were wrong (see next section).

The main concerns within and outside NATO revolved around the use of depleted uranium and cluster munitions.¹⁵⁵ Depleted uranium, valued for its ability to penetrate armor, became a divisive issue largely *after* the conclusion of Operation Allied Force.¹⁵⁶ The delayed reaction reflected the nature of the threat, alleged to be the toxic remnants of its use.¹⁵⁷ Concern about environmental and health risks from depleted uranium weapons persists today.¹⁵⁸ Cluster weapons, on the other hand, emerged as a humanitarian risk during the war. The 7 May cluster bombing of the Niš airfield, located on the edge of the city, hit a market and other populated areas, killing 14 civilians and injuring 28. The attack was so widely condemned that “after the incident in Niš, the White House quietly issued a directive to the

Pentagon to restrict cluster bomb use” by US forces for the balance of the campaign.¹⁵⁹

Chinese Embassy

One politically sensitive air strike prompted General Clark to temporarily halt all bombing in the Serbian capital and illustrated the interplay between the concrete effects of civilian casualties and operational restrictions. On 7 May, NATO bombed the Chinese embassy in Belgrade and killed three Chinese nationals.¹⁶⁰ Analysts had mistakenly identified the wrong building. President Clinton called the event “the worst political setback of the conflict.” Clinton was “dumbfounded and deeply upset by the mistake and immediately called [Chinese president] Jiang Zemin to apologize. He wouldn’t take the call, so I publicly and repeatedly apologized.”¹⁶¹ The chill on US-China relations lingered long after the incident.¹⁶² Thus, as in the case of the Amiriyah bombing during Desert Storm, civilian casualty incidents could require the direct intercession of the US president and affect major strategic interests. When civilian casualties were nationals of important states or allies, they heightened the concrete costs of civilian casualties.

Sensing the resulting loss of momentum in the air war, however, General Clark decided within days to resume attacking Belgrade but with even greater caution.¹⁶³ Then on 13 May, a NATO airstrike killed 87 civilians who had been locked in a building. “Public pressure after the strike . . . was intense,” Clark recounted. “The NATO ambassadors were concerned; their governments were being subjected to widespread public criticism. ‘You must be more careful,’ [the chairman of NATO’s military committee] said. ‘Please don’t allow such incidents to occur.’”¹⁶⁴ The event was part of a reactive pattern—a civilian casualty incident, followed by criticism from allies and their wider publics, which prompted operational adjustments to seek to avoid future incidents.

Civilian Casualty Sensitivity

While airpower advocates considered Kosovo a triumph for strategic bombing, many nonetheless were troubled by the gradualism and initial ineffectiveness of the campaign. Some suggested that General Clark, an Army commander, could not be expected to understand how to employ airpower. Yet service affiliation was not the critical

factor shaping the SACEUR's decision making. Clark was responding to pressures that would have shaped a USAF officer's thoughts as well—just as they had shaped General Ryan's decisions during Operation Deliberate Force four years earlier.

Political and strategic pressures, not parochial interests or professional bias, were determinate. The short-term responses to civilian casualty incidents, as evidenced by Brigadier General Leaf's proposal to Lieutenant General Short, illustrated the critical role of civilian harm in shaping tactics as well as the overall operation.

Concern about civilian deaths was not simply a function of respect for the law, nor was it the result of misreading LOAC (as has been alleged regarding the air war in Vietnam).¹⁶⁵ Civilian deaths, not the nominal legality of a particular target, mattered most during the course of the Kosovo air campaign. This is not to argue that legal disputes were unimportant. However, the operational commander was concerned about coalition partners and political support for the operation. These partners and allies in turn responded to public outrage—both internationally and in their states—that was directly linked to civilian deaths. The alleged legality, character, or importance of the target seemed quite irrelevant in this chain of concerns.

Divergent reactions to attacks against similar targets illustrate that the sensitivity to noncombatant deaths, not the target choice, was the critical source of public concern. On 23 April, a NATO air strike killed 16 Serb office workers in a radio and television station.¹⁶⁶ International condemnation was widespread, based both on legal concerns (legitimacy of the target and the proportionality of the attack) and upon the fact of civilian deaths.¹⁶⁷ Yet the reaction when non-combatants were killed stood in stark contrast to NATO attacks on other media facilities in which no civilians were killed. Those attacks were virtually ignored in the media.¹⁶⁸

Overall, the roughly 500 civilian deaths during the Kosovo campaign were few compared to the estimated 3,000 Iraqi noncombatants killed during the shorter Operation Desert Storm.¹⁶⁹ However, Kosovo was in Europe, with its citizens recording the violence in real time. Moreover, standards seemed to have changed. As retired Lt Gen David Deptula, USAF, saw it, civilian protection pressures that were evident in Desert Storm later culminated in Operation Allied Force.¹⁷⁰ The thresholds of tolerance appeared to have dropped. In Desert Storm, the strike on Amiriyah that killed more than 200 civilians provoked widespread condemnation. However, during the Kosovo

air campaign, incidents that killed even a handful of noncombatants sparked international outrage.¹⁷¹

In the face of such pressures, the USAF's ability to mitigate collateral damage became an enabler of the use of force at both the strategic and tactical levels. The use of carbon filament warheads during OAF illustrates how valuable low-collateral-damage options had become. The French initially vehemently opposed attacks on electrical grids.¹⁷² After planners proposed using nonlethal attacks with temporary effects, the French eventually relented. The step proved to be particularly significant, because once NATO had crossed the psychological Rubicon of targeting electricity, it was easier to transition to conventional strikes after temporary effects were deemed ineffective.

Over the 1990s, the USAF had come to appreciate the political salience of civilian casualties and began developing new tools and processes to minimize civilian impact (described in the next chapter). One US innovation proved particularly crucial as an enabler of operational freedom during OAF. The Collateral Damage Estimate Tool (CDET) could model information related to a planned strike, taking into account munitions choice, tactics, and other adjustable parameters. The model predicted the full range of effects, including the strike's estimated impact on noncombatants.

The number of estimated civilian deaths was supposed to be one element of the overall target analysis, but because alliance members were so sensitive to civilian harm, CDET played a critical role in coalition target approval. The estimate determined the level of political scrutiny that a target would receive. If an air strike was predicted to result in 20 or more civilian deaths, it automatically required approval at the highest levels of the US government.¹⁷³ This threshold for approval was an impediment to certain types of air strikes. A low estimate, on the other hand, could help overcome reluctance to proposed strikes.

As the war continued, NATO juggled two competing impulses. It increased tactical restrictions on how targets could be attacked. It simultaneously widened the categories of acceptable dual use targets, attacking infrastructure, media, and private businesses. The Kosovo campaign illustrated that the real issue of sensitivity was not legality but effects upon civilians. If the actual standard had been legal compliance, it might have been more difficult to justify the attacks. Because popular expectations primarily concerned effects upon civil-

ians rather than the nature of the target itself, these controversial strategic targets became easier to justify.

As the United States became frustrated with the ineffectiveness of NATO attacks on military equipment, it pushed to broaden attacks on strategic targets.¹⁷⁴ However, some states worried about the lawfulness of suggested attacks.¹⁷⁵ Where the numbers of civilian casualties predicted were low, CDET helped overcome legal or political objections.

The civilian casualty number assumed a life of its own, and it eventually drove the entire targeting process.¹⁷⁶ A US military lawyer centrally involved in OAF target approval wrote, “Whether it was the nature of the [Kosovo] conflict, an outgrowth of the ever increasing visibility of the results of military actions, over sensitivity by political authorities, the desire to make a decision based on some objective ‘number’ (no matter how unscientifically reached or misunderstood) rather than a subjective ‘value,’ or a combination of the above, the collateral damage estimate quickly became central to much of the targeting process.”¹⁷⁷

Many NATO members valued CDET because it helped reassure them that civilian harm could be limited. The USAF also appreciated the tool’s role in helping obtain approval for strikes. As much as Airmen chafed at any intrusion upon their strategic art, civilian casualties had become just that. CDET facilitated efforts to maintain operational freedom in the face of expectations regarding noncombatant harm. As one analyst wrote, “The use of this methodology . . . to minimize unwanted collateral damage often proved decisive in persuading NATO’s civilian leaders to approve attacks on many of the most politically sensitive targets.”¹⁷⁸

By late May the air war appeared to have reached its political limits. Many USAF commanders had concluded that NATO would be unable to find and destroy more dispersed Yugoslavian troops and equipment without incurring more unintended casualties.¹⁷⁹ The coalition took the sobering step of planning a ground force invasion. Most observers believe that this sign of resolve, coupled with the Croatian ground offensive that month, were critical factors prompting Milosevic’s capitulation to NATO.¹⁸⁰

The Kosovo case illustrates how civilian protection concerns shaped the overall air campaign and translated into additional operational constraints after civilian casualty incidents. “Never before in human history,” opined NATO spokesman Jamie Shea, “have so many

people made such an enormous effort to minimize the harm to civilians.”¹⁸¹ Concerns about noncombatants appeared to have reversed normal war-making processes. The strategy did not drive targeting choice; the civilian protection norm drove the strategy. Pilots felt that they were being asked to win a war without causing any civilian harm. When “zero noncombatant casualties becomes not only the goal of strategy but also the expectation,” a USAF analyst wrote, Kosovo is the result.¹⁸²

The 2000s: The Decade of Counterinsurgency and Civilian Casualties

Airpower had been through a crucible of criticism and constraints, and as a result, the USAF had begun the process of not just operational adaptation but also institutional change. CDET was one manifestation of that change; the USAF also developed new munitions and capabilities specifically designed to minimize collateral damage. These institutional innovations, which continued throughout the next decade, are detailed in the following chapter.

On the operational side, airpower benefited from this new attitude and these new capabilities when the United States attacked Afghanistan in 2001 and when it launched its war against Iraq in 2003. There was very little strategic bombing in Afghanistan; instead US aircrews quickly found themselves supporting Afghan insurgents and US special forces (SF) in an irregular warfare campaign (and then, much later, in a counterinsurgency effort). Operation Iraqi Freedom (OIF) featured strategic bombing at the outset, with painstaking monitoring of targets in Baghdad and use of discriminate weapons systems.¹⁸³ Unclassified surveillance video documented an aircrew’s extensive efforts to confirm the absence of civilians during an attack on a communications antenna, a degree of effort that fueled higher-level concerns that the aircraft itself would become vulnerable to attack.¹⁸⁴

The Human Rights Watch (HRW) report on OIF provided a useful measure of how far the USAF had come in its strategic targeting. The report praised US decisions to spare infrastructure and to target carefully. The main critique of airpower was the repeated strikes against leadership targets, which failed to kill Iraqi leaders but instead killed civilians. HRW faulted the methodology of relying on cell phone location data to identify targets, i.e., the intelligence used for targeting,

rather than the target choice or execution of the strikes.¹⁸⁵ Yet HRW expressed little complaint about issues that had dominated its critiques of prior air wars: the destruction of electrical systems, the use of air-delivered cluster weapons, or the failure to visually confirm the absence of civilians nearby prior to the release of weapons. The dogs that failed to bark spoke volumes.

Airpower sensibilities had changed significantly since the Cold War, and this created a sharp contrast with the ground force perspective. For the USAF, civilian casualties were no longer just a question of adherence to the LOAC; they had become a central issue of operational concern. Sensitivity to civilian harm was now a routine aspect of war planning and operations. Airmen expected to produce collateral damage estimates, they knew to select the least destructive weapons that could achieve the desired military effects, and they anticipated that the targeting process might become more complicated when civilian casualties were anticipated. Civilian protection had indeed become more “like the weather” in Airmen’s minds.

However, land power had not been forced through an analogous crucible regarding the operational impact of civilian casualties on its freedom of action or effectiveness. Ground forces also remained more vulnerable to immediate fires, including threats from actors that appeared to be civilian in nature. This meant that infantry Soldiers were forced to assume greater risks when averting unintentional harm during combat operations. The combination of airpower’s changing institutional mind set and ground forces’ greater physical exposure created frictions as the two components began working together in combat.

Airpower’s primary sustained mission during the wars in Iraq and Afghanistan was close air support. For the first time since Operation Desert Storm, the USAF performed the critical function of supporting deployed ground forces. This was a different ball game from strategic targeting. In addition to honing attacks while taking collateral damage into account, aircrews now faced another competing imperative: protecting US personnel on the ground. This was not a pressure they had experienced during most of the 1990s when they were enforcing no-fly zones or conducting the Balkan air campaigns. With US forces on the ground, aircrews feared that their hesitation or miscalculations might jeopardize the lives of American Soldiers.¹⁸⁶ The calculus for using force became more complex with this additional and often urgent concern.

Initial air-ground interactions in Afghanistan offered a glimpse of the extent to which pilots had internalized civilian protection by dint of their experience and training and how this could create tensions with ground forces. Early in the war, a small special forces A-team, typically supported by a USAF joint tactical air controller, coordinated most fixed-wing air strikes.¹⁸⁷ However, the operating environment was dramatically different for pilots that had trained to minimize civilian harm in a conventional fight in urban areas. From the air, mud huts and sedans and taxis seemed to indicate civilians. Some pilots were reluctant to release weapons without obtaining greater certainty about potential collateral damage.

Frustrated with pilots' questions, SF Soldiers on the ground began to play a "terminology game" with the aircrews to entice them to drop their weapons.¹⁸⁸ One SF team leader told his men to call civilian villages and mud huts a military compound, barracks, or a command and control facility.¹⁸⁹ If the enemy used civilian vehicles, he would call them a military convoy or troop transport. Even when he saw that convoys included women and children, the team leader explained that "the guidance I gave my team and the guidance from [headquarters] is that they are combatants."¹⁹⁰

Airmen sometimes felt they were being asked to reverse the direction in which they had been traveling since the 1990s and instead apply force in keeping with the traditional Weinberger-Powell doctrine. Some pilots observed that their service ethos was at odds with that of a ground commander whose dominant frame of reference remained Operation Desert Storm.¹⁹¹ These tensions persisted as insurgencies developed, quickly in Iraq and more gradually in Afghanistan.

Guerilla warfare is an ancient asymmetric approach to war. Insurgents can deprive US forces of many advantages upon which they rely in conventional conflict. Traditional US military strengths such as advanced technology, a detailed assessment of the enemy order of battle, commitment to ethical and legal standards, and sheer destructive power can be vitiated, or even become liabilities, in counterinsurgency (COIN) struggles. Guerilla tactics increase the physical and psychological risks to COIN forces. Because guerillas disguise themselves as and shelter among civilians, counterinsurgents have great difficulty distinguishing adversary from noncombatant. There are rarely front lines or rear areas in which to take respite. The insurgents' use of improvised explosive devices and the early US response

to the threat exemplified the challenge facing US forces in Iraq, and later, in Afghanistan.

These realities on the ground further stressed the air-ground partnership. However ambiguous a situation might appear from the air, ground forces could not afford to be ambivalent about seeming portents.¹⁹² Infantry troops felt exposed, if not directly threatened, once they moved “outside the wire,” leaving their heavily secured base areas. American air forces faced no equivalent threats once they had established air superiority.

The divergence in perspectives was all the wider because the US military lacked any doctrine for fighting COIN. After Vietnam, the armed forces had decided that COIN was not a mission for which it would prepare (only SF had any training for irregular warfare). Thus there was no doctrine, education, or training to prepare the joint force for what it faced in Afghanistan and Iraq after toppling the national political leadership.

The gap between air and ground forces’ operational experiences during the 1990s, coupled with their starkly different risk profiles in COIN operations as well as the absence of COIN doctrine, complicated the air-ground interface in Afghanistan and Iraq. When aircraft operated as close air support, the commander on the ground literally called the shots. His desire to neutralize potential threats to his forces, though, could conflict with the awareness of civilian harm that had become more engrained in Airmen.

Airpower essentially had to wait for ground forces to catch up to its awareness of the impact of civilian casualties. It was not until well into the Iraq war, and even later in Afghanistan, that a new COIN doctrine began to permeate the Army and Marine Corps (USMC). Even then training lagged behind, and committed leadership remained vital for inculcating a counterintuitive approach to combat. Only after ground forces better understood the long-term operational impact of civilian harm were they able to adapt their employment of airpower.

Change came first to Iraq, the fight that US policy makers prioritized. Gen David H. Petraeus, US Army, took command of the coalition operation in 2006, having just directed the revision of US Army and USMC COIN doctrine to emphasize the protection of civilians.¹⁹³ This new approach (along with exogenous factors) helped drive down civilian casualties in Baghdad and improved various other aspects of security. Indeed, the dramatic decrease in civilian casualties became

one of the key indicators General Petraeus used to convince a skeptical Congress that the war effort was succeeding.¹⁹⁴

If the deployed force in Iraq was finally adapting, these changes had not penetrated to the supporting service organizations. In a stunning example of how resistant the force-providing Army and USMC remained to COIN, few of the changes that Petraeus implemented in Iraq were gravitating to Afghanistan. Civilian casualties had become a growing irritant in the relationship between the US-led International Security Assistance Force (ISAF) coalition and the Afghan government. By 2009 the issue was an oozing political sore. The 4 May aerial bombing in Farah, which killed dozens of Afghan civilians, proved to be a tipping point. Although it was just one in a recurring series of civilian casualty incidents, the Farah strike came to dominate not just the bilateral dialogue but also the Washington debate about continuation of the war. Amid pressures to draw down forces, many US observers argued that the “economy of force” operation in Afghanistan was already overreliant on airpower and causing unnecessary civilian deaths.¹⁹⁵

Consequently, Gen Stanley McChrystal, US Army, promised Congress that he would make civilian casualty reduction a priority when he assumed command of ISAF. Arriving in June 2009, McChrystal almost immediately issued a tactical directive to educate ground forces regarding the appropriate use of airpower. The directive clarified the circumstances in which ground commanders could direct aerial bombing. While air strikes could still be used to protect US lives, the directive clarified and restricted some options in situations short of self-defense. It also directed that aircrews assume a larger role in communicating about collateral damage mitigation before attacks were authorized. General McChrystal sought to ensure that the ground commander would benefit from the information garnered from platforms above the fight and from the Airman’s relative insulation from the immediate pressure of events on the ground.¹⁹⁶ However, some ground commanders saw the requirements as infringing upon their authority to control air assets.

With the new directive and General McChrystal’s constant reinforcement of the rules, ISAF was able to significantly reduce the number of civilian casualties caused by fixed wing aircraft over the following year. Ironically, though, airpower continued to bear the brunt of public and Afghan blame for civilian deaths. It is ironic that airpower—and its most prominent proponent, the USAF—continued

to attract such criticism given the USAF's intellectual, operational, and (as we shall see in the next chapter) material leadership in minimizing civilian harm.

However, few observers differentiated among the diverse actors and platforms that launched weapons from the air. Neither Afghans nor the general public distinguished the pedigrees of air-to-surface fires. Fixed-wing naval forces were involved in the fight alongside USAF aircraft. However, Army and USMC forces frequently relied on their own organic helicopters for close combat support. These forces use different procedures than those for fixed-wing aircraft.¹⁹⁷ SF units used both fixed- and rotary-wing aircraft for their independent operations. Finally, other government agencies sometimes launched air-to-surface attacks in the theater. These capabilities are easily confused with one another, and civilian casualties—regardless of their source—were often mistakenly attributed to the USAF.¹⁹⁸

Moreover, few outside observers seemed to appreciate that the ground commander was calling the shots. Notwithstanding General McChrystal's efforts to better incorporate the air perspective in decisions about aerial bombing, it was still the ground commander who decided how to use airpower in support of his forces and operational scheme. Airmen found this problematic. From their perspective, ground forces often expected airpower to help extricate them from ill-considered fixes, yet airpower took the hit when civilians died as a result. The notion that airpower itself was the problem, or that relying more heavily on ground forces would better protect civilians, struck many airpower advocates as counterintuitive. Frustration with popular misperceptions about airpower ultimately prompted the USAF's Office for Analyses, Assessments and Lessons Learned to conduct its first study of civilian harm.¹⁹⁹

Conclusion

The USAF's recent history has been characterized by a consistent, even growing, challenge to maximize operational effectiveness while minimizing civilian harm. The USAF led the way in responding to these pressures, even as it confronted new variations of civilian casualty challenges during COIN operations in Iraq and Afghanistan.

The number of noncombatant dead might be over 200, as in the Amiriyah bunker incident, or as few as three in the Chinese embassy

episode, or it might be a dozen deaths repeated each week in airstrikes in Afghanistan. However, the international community, national leaders, and local citizens no longer accepted that these deaths were simply collateral damage. Outside observers did not evaluate civilian effects in terms of their value relative to military advantage, as LOAC demands. Instead, the civilian deaths galvanized international opinion. Even if air campaigns succeeded in minimizing civilian harm by historical standards, USAF leaders feared growing restrictions on their use of force.

Normative expectations shaped the conduct of air operations, and the operational USAF adapted on the fly. It sought to reduce civilian harm in targeting choice and tactics in order to ensure the continued viability of aerial bombing as a tool of choice for US policy makers. The next chapter details how the USAF also began longer-term institutional adaptation—developing new capabilities and tools to address collateral damage concerns in *future* operations. The CDET that became available for use in Kosovo in 1999 was one such innovation; new weapons and supporting capabilities also emerged to address the changing operational environment.

Had airpower not faced heightened normative expectations in the 1990s, civilian casualty mitigation likely would have continued to improve as an unintended side effect of other USAF objectives. However, the intensity and operational impact of normative and political concerns instead prompted the service to undertake dedicated institutional efforts to reduce civilian harm during that decade. The combination of wartime innovation and institutional change placed the USAF at the forefront of collateral damage mitigation efforts within the US military.

Notes

1. The most notable developments were in the targeting arena. The USAF belatedly released Air Force Doctrine Document (AFDD) 3-60, *Targeting*, on 8 June 2006, and the service developed certification courses related to collateral damage assessment.

2. US Department of Defense (DOD), *Conduct of the Persian Gulf War: Final Report to Congress* (Washington, DC: DOD, 1991), 62–6.

3. “Each service was given the opportunity to apply its own ethos to the war, with few constraints from on high.” Michael R. Gordon and Bernard E. Trainor, *The General’s War: The Inside Story of the Conflict in the Gulf* (Boston: Little Brown, 1995), xi.

4. Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War* (New York: Houghton Mifflin Company, 1993), 292. Gen Hap Arnold commanded the Army Air Forces during WWII.

5. Richard T. Reynolds, *Heart of the Storm: The Genesis of the Air Campaign against Iraq* (Maxwell AFB, AL: Air University Press, 1995), 29.

6. Bob Woodward, *The Commanders: The Pentagon and the First Gulf War, 1989–1991* (New York: Simon and Schuster, 1991), 341; and Eliot A. Cohen, *Gulf War Air Power Survey*, vol. 1, *Planning and Command and Control* (Washington, DC: US Dept. of the Air Force, 1993), 377. This source is hereafter referenced as *GWAPS*. President Bush often repeated his desire to differentiate attacks against the regime and Iraqi citizens.

7. Cohen, *GWAPS*, vol. 1, 378.

8. *Ibid.*

9. This approach served the USAF well in conflicts that featured preplanned attacks on fixed targets; airpower faced different challenges in attacking mobile targets. This is discussed further in chapter 5.

10. DOD, *Conduct of the Persian Gulf War*, 228.

11. *Ibid.*, 240.

12. *Ibid.*, appendix O, O-10.

13. Audiotape archives from the Project on the Means of Intervention Proceedings, National Security and Human Rights Program, Carr Center for Human Rights Policy, Harvard Kennedy School of Government, Washington, DC, 1992–1996. This source will hereafter be referenced as NSHR Proceedings.

14. This is a consistent theme of military press briefings during the war. See, for example, White House spokesman Marlin Fitzwater's press briefings on 11 February 1991. For more detail, see Philip M. Taylor, *War and the Media: Propaganda and Persuasion in the Gulf War* (Manchester, UK: Manchester University Press, 1992).

15. Reynolds, *Heart of the Storm*, 103.

16. Johanna Neuman, "Saddam Keeps Focus on Civilian Toll," *USA Today*, 7 February 1991.

17. For example, Gen Richard "Butch" Neal, USMC, said, "I am outraged that civilians were put in harm's way, and I lay the blame for that on the Iraqi leadership." Quoted in Edward Cody, "U.S. Briefers on Attack Concede No Quarter; Insisting Target Was Military, Generals Find Image of Dead Civilians Permeates Sessions," *Washington Post*, 14 February 1991. White House spokesman Marlin Fitzwater said Saddam Hussein was willing to "sacrifice civilian lives and property that further his war aims." Quoted in Gerald F. Seib, "In Harm's Way: U.S. Attack on Bunker Puts into Sharp Focus Civilian-Casualty Issue," *Wall Street Journal*, 14 February 1991.

18. Pres. George H. W. Bush to Bernard Cardinal Law, head of the archdiocese of Boston, letter, 22 January 1991, published in George H. W. Bush, *All the Best, George Bush* (New York: A Lisa Drew Book/Scribner, 1999), 505–7.

19. DOD, *Conduct of the Persian Gulf War*, 88, 228.

20. "U.S. Trying to Reduce Focus on Body Counts," *St. Petersburg Times*, 12 February 1991.

21. Maj Gen Robert B. Johnston, USCENTCOM, daily briefing, 2 February 1991.

22. Domestic concerns were generally muted. One *Washington Post* headline summed up the public view: "Will Sight of Iraq's Civilian Casualties Hurt Allies' "

Cause? Innocents' Deaths Historically Viewed as Unavoidable," *Washington Post*, 14 February 1991. Some accounts were treated skeptically by the press and public; see Al Kamen, "Iraqi Factory's Product: Germ Warfare or Milk?," *Washington Post*, 8 February 1991. A 13 February British air strike in Fallujah that killed 200 civilians disappeared from US public view after the United Kingdom immediately acknowledged responsibility. See R. Jeffrey Smith and Evelyn Richards, "Numerous U.S. Bombs Probably Missed Targets; Not All Munitions Used in Gulf are Smart," *Washington Post*, 22 February 1991.

23. Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 142.

24. The indirect civilian impact of bombing infrastructure remained underappreciated at the time. Gen Norman Schwarzkopf, US Army, said "We never had any intention of destroying 100 percent of all the Iraqi electrical power" because it would cause civilians to "suffer unduly." Barton Gellman, "Allied Air War Struck Broadly in Iraq," *Washington Post*, 23 June 1991. However, generators were destroyed, with lasting humanitarian impact. See Thomas E. Griffith, *Strategic Attack of National Electrical Systems* (Maxwell AFB, AL: Air University Press, October 1994); and William M. Arkin, Damian Durrant, and Marianne Cherni, *On Impact: Modern Warfare and the Environment, a Case Study of the Gulf War* (Washington, DC: Greenpeace, May 1991; updated 23 July 1991).

25. Maj Gen Charles J. Dunlap, retired, USAF, former USAF Deputy Judge Advocate General, interview with the author, Washington, DC, 4 December 2009.

26. Haynes Johnson, "The Day Illusions Shattered," *Washington Post*, 15 February 1991.

27. In January 1991, the United States bombed a factory that Iraq insisted produced baby formula, while the United States claimed—erroneously—that it was a chemical weapons facility. The controversy did not center on civilian casualties but on target choice. William Arkin, "Was It a Baby Milk Factory?," *Fog of War* (blog), 1998, <http://www.washingtonpost.com/wp-srv/inatl/longterm/fogofwar/vignettes/v4.htm>.

28. Atkinson, *Crusade*, 267.

29. *Ibid.*, 267–76.

30. Gordon and Trainor, *General's War*, 324–25.

31. Atkinson, *Crusade*, 286.

32. *Ibid.*

33. *Ibid.*, 287.

34. *Ibid.*, 286.

35. *Ibid.*, 285.

36. *Ibid.*, 286.

37. Robert D. McFadden, "Iraqis Cry for Revenge as Bombing Victims Buried," *New York Times*, 15 February 1991. Jordan, Tunisia, and other Arab states also strongly criticized the action and expressed "extreme outrage and alarm." See, for example, "Bomb Deaths in Baghdad Stir Outrage among Arabs: Allies Blame Hussein for Peril to Civilians," *San Diego Union-Tribune*, 14 February 1991.

38. Lt Gen Richard "Butch" I. Neal, deputy commander of USCENTCOM, continued to insist that the facility was a military bunker. See Atkinson, *Crusade*, 287.

39. Marlin Fitzwater, press secretary, White House, press statement, Washington DC, 13 February 1991. Targeting civilian facilities would have violated the LOAC unless the facilities were being used for military purposes.

40. “Bomb Deaths in Baghdad Stir Outrage among Arabs.”

41. As Phil Meilinger wrote, “air-shaft accuracy’ had become so routine that everyone expected it.” Phillip S. Meilinger, “Precision Aerospace Power, Discrimination, and the Future of War,” *Aerospace Power Journal* 15, no. 3(Fall 2001): 12–20.

42. Michael Ignatieff, *Virtual War: Kosovo and Beyond* (New York: Picador Publications, 2000), 192.

43. Gordon and Trainor, *General’s War*, 325.

44. Susan Rosegrant, *The Gulf Crisis: Building Coalition for War*, Harvard Business School case C16-94-1264.0 (Cambridge, MA: Harvard Business School, 1994).

45. Atkinson, *Crusade*, 289.

46. This is why the USCENTCOM public affairs briefer was frequently on the phone with Secretary of Defense Dick Cheney, General Powell, and Assistant Secretary of Defense Pete Williams. Eliot A. Cohen, *Gulf War Air Power Survey*, vol. 3, *Logistics and Support* (Washington, DC: US Department of the Air Force, 1993), 147, 149.

47. Atkinson, *Crusade*, 289.

48. Eliot A. Cohen, *Gulf War Air Power Survey*, vol. 2, *Operations and Effects and Effectiveness* (Washington, DC: US Department of the Air Force, 1993), 220.

49. Atkinson, *Crusade*, 288.

50. *Ibid.*

51. Gordon and Trainor, *General’s War*, 326. Powell took the initiative before he was pressed to act. Atkinson, *Crusade*, 288.

52. *Ibid.* Powell had served in key Pentagon staff jobs and then as the national security advisor to Pres. Ronald Reagan. As an Army officer, Powell was also generally skeptical of airpower’s utility as a strategic weapon rather than a tactical force supporting ground movement.

53. *Ibid.*, 288.

54. *Ibid.*, 289.

55. Gordon and Trainor, *General’s War*, 326–27. Powell’s sensitivity to maintaining the coalition also influenced his views regarding air strikes against retreating Iraqi forces and the length of the war itself.

56. Atkinson, *Crusade*, 289. In this respect, Powell was doing what humanitarians suggest—narrowly defining military necessity to entail only the minimum force necessary for victory.

57. *Ibid.*

58. Gordon and Trainor, *General’s War*, 327.

59. *Ibid.*, 326.

60. He had previously provided only general descriptions of target categories to his superiors. General Schwarzkopf told Glosson, “I need to go over every target in Baghdad each day so that I can explain exactly why we’re striking it and what we expect to gain—where it’s located, what’s in the surrounding area, everything.” Quoted in Atkinson, *Crusade*, 290.

61. Lt Gen David Deptula, retired USAF, interview with the author, Washington, DC, 26 January 2010.

62. *Ibid.*

63. Ward Thomas, *The Ethics of Destruction: Norms and Force in International Relations* (Ithaca, NY: Cornell University Press, 2001), 88.
64. Cohen, *GWAPS*, vol. 2, 222.
65. Gordon and Trainor, *General's War*, 326.
66. Cohen, *GWAPS*, vol. 2, 206.
67. Atkinson, *Crusade*, 289–90.
68. Eric V. Larson, *Misfortunes of War: Press and Public Reactions to Civilian Deaths in Wartime* (Santa Monica, CA: RAND, 2006), 51–55. There was no change in the level of public support for the decision to go to war. It remained at almost 80 percent. See also Atkinson, *Crusade*, 289.
69. The relief operation was called Operation Provide Comfort. France ended its participation in 1996. See Alfred B. Prados and Kenneth Katzman, *Iraq: Former and Recent Military Confrontations with the United States* (Washington, DC: Congressional Research Service, 2002).
70. Operation Southern Watch transitioned in June 2002 to the more offensively oriented Operation Southern Focus. For more information on Operation Southern Watch, see Daniel L. Byman and Matthew C. Waxman, *Confronting Iraq: U.S. Policy and the Use of Force since the Gulf War* (Santa Monica, CA: RAND Corporation, 2001), 48–55.
71. Alfred B. Prados and Kenneth Katzman, *Iraq-U.S. Confrontation* (Washington, DC: Congressional Research Service, 20 February 2002), 5.
72. This was the operation in which Lieutenant General Deptula ordered that concrete be substituted for explosives in a bomb, as described in chapter 5.
73. The Iraqi government periodically reported civilian casualty events and guided reporters to purported victims. “Iraq Reports Attacks Outside No-Fly Zones,” *BBC News*, 17 August 1999, http://news.bbc.co.uk/2/hi/middle_east/423368.stm.
74. Dana Priest and Bradley Graham, “Airstrikes Took a Toll on Saddam, U.S. Says,” *Washington Post*, 9 January 1999.
75. UNICEF estimated that up to 500,000 children alone had died from the effects of sanctions by 1999. See “Iraqis Blame Sanctions for Child Deaths,” *BBC News*, 12 August 1999, http://news.bbc.co.uk/2/hi/middle_east/418625.stm.
76. Hans von Sponeck, “After the Journey—A UN Man’s Open Letter to Tony Blair,” *New Statesman*, 23 September 2010, <http://www.newstatesman.com/middle-east/2010/09/iraq-humanitarian-sanctions>.
77. Gar Smith, “The Silence of the Bombs,” *Alternet*, 8 October 2002, http://www.alternet.org/story/14263/the_silence_of_the_bombs. When UN Coordinator Hans von Sponeck resigned in 2000, he focused on opposition to the sanctions, although he continued to criticize the no-fly zones. “UN Sanctions Rebel Resigns,” *BBC News*, 14 February 2000, http://news.bbc.co.uk/2/hi/middle_east/642189.stm.
78. NSHR Proceedings.
79. See Samantha Power, *A Problem from Hell: America in the Age of Genocide* (New York: Perseus Books, 2002).
80. NSHR Proceedings.
81. David L. Dittmer and Stephen P. Dawkins, *Deliberate Force: NATO’s First Extended Air Operation; the View from AFSOUTH*, CNA occasional paper (Alexandria, VA: Center for Naval Analyses, 1998).

82. Perceiving acute public sensitivity to NATO military and Serb civilian casualties, the NATO air commander, US Air Force Lieutenant General Michael Ryan, imposed strict rules of engagement and close, personal control over air operations.” Robert C. Owen, “Operation Deliberate Force: A Case Study on Humanitarian Constraints in Aerospace Warfare” (working paper, Carr Center for Human Rights Policy, Harvard University, 2001), 64, <http://carrcenter.hks.harvard.edu/files/carrcenter/files/owen2001.pdf>.

83. Robert C. Owen, “The Balkans Air Campaign Study: Part 2,” *Airpower Journal* 11, no. 3 (Fall 1997), 21, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/fal97/owen.pdf>.

84. The Secretary of the Air Force subsequently explained that the operation was “politically fragile. With the first report of civilian casualties, the entire operation would have been put at risk, but that report never came.” Sheila E. Widnall, secretary of the Air Force, “The Air Force in the New World Order,” to the Orlando Air Force Association Symposium, speech, 16 February 1996, <http://www.afa.org/aef%5Cpub%5Ccol1.asp> (accessed 22 April 2010).

85. Robert D. Pollock, “Roads Not Taken: Theoretical Approaches to Operation Deliberate Force,” in *Deliberate Force: A Case Study in Effective Air Campaigning*, Final Report of the Air University Balkans Air Campaign Study, ed. Robert C. Owen (Maxwell AFB, AL: Air University Press, January 2000), 432–33.

86. *Ibid.*, 434, note 7.

87. Ronald M. Reed, “Chariots of Fire: Rules of Engagement in Operation Deliberate Force,” in *Deliberate Force: A Case Study in Effective Air Campaigning*, Final Report of the Air University Balkans Air Campaign Study, ed. Robert C. Owen (Maxwell AFB, AL: Air University Press, January 2000), 410.

88. Pollock, “Roads Not Taken,” 434.

89. Colin S. Gray, *Airpower for Strategic Effect* (Maxwell AFB, AL: Air Force Research Institute, Air University Press, 2012), 217.

90. See Owen, “Operation Deliberate Force,” 61–62. Target choice in itself was not controversial. This was a key difference with Operation Allied Force, discussed later in this chapter.

91. Pollock, “Roads Not Taken,” 431–32.

92. Owen, “Operation Deliberate Force,” 64.

93. “For example, because smart bombs that went ‘stupid’ generally struck long or short of their targets, Ryan directed that bridge attack runs be made along the rivers they crossed, even though this tactic theoretically placed the crews at risk to anti-aircraft weapons arrayed along the banks. At one barracks facility, Ryan allowed the bombing of an outer row of munitions bunkers, but not an inner row, to minimize the risk of damage to potentially inhabited buildings.” He also insisted on use of the “smallest weapons capable of taking out targets rather than the largest available weapons their aircraft could carry.” *Ibid.*, 64. This meant that “A-10 fighters flew into the threat envelopes of Serbian MANPADs [man-portable air-defense system] and light AA [anti-aircraft batteries] in order to use cannons, rather than bombs, to cut down a microwave relay tower and to destroy the contents of a warehouse, both of which were located near civilian dwellings. While normal procedure called for attacking aircraft to minimize their exposure to enemy defensive systems by dropping all of their weapons in single passes, General Ryan required many aircraft over Bosnia

to make multiple passes, dropping only one weapon at a time, and only after the dust from previous weapons had cleared.” Ibid., 65.

94. Richard L. Sargent, “Deliberate Force Targeting,” in *Deliberate Force: A Case Study in Effective Air Campaigning*, Final Report of the Air University Balkans Air Campaign Study, ed. Robert C. Owen (Maxwell AFB, AL: Air University Press, January 2000), 278. This would mean about one civilian casualty for every 30–40 weapons. The number is small, but the number of munitions deployed was also relatively small. Thus, compared to other conflicts, this is a high ratio of civilian deaths. See Owen, “Operation Deliberate Force,” 63. Chief of Staff of the Air Force Gen Merrill McPeak subsequently revealed that there had been about 20 cases of collateral damage, although it was unclear whether he meant civilian deaths, injuries, or damage to property. “The Art of War,” *Online NewsHour*, 16 June 1999, http://www.pbs.org/newshour/bb/europe/jan-june99/lessons_6-16.html.

95. One analyst concluded that “NATO’s successful blending of precision air power and humanitarian credibility led its leaders to expect a reprise of Deliberate Force in their confrontation with Serb misrule in Kosovo. The Alliance’s confidence that Kosovo would replay Bosnia extended to restricting military planners to preparing for a two- or three-day war only, with air attacks restricted to military installations unlikely to produce collateral civilian casualties.” Owen, “Operation Deliberate Force,” 68–69.

96. See Michael W. Lamb, Sr., *Operation Allied Force: Gold Nuggets for Future Campaigns*, Maxwell Paper 27 (Maxwell AFB, AL: Air University Press, 2002).

97. Statement of Andrew F. Krepinevich, president of the Center for Strategic and Budgetary Assessments, in Senate, *Testimony before the Subcommittee on Air-land*, 111th Cong., 1st sess., 26 March 2009, <http://www.gpo.gov/fdsys/pkg/CHRG-111shrg52749/html/CHRG-111shrg52749.htm>. The United Kingdom, France, Italy, Denmark, the Netherlands, Turkey, Belgium, Spain, and Canada also contributed air assets.

98. Secretary of Defense William S. Cohen and General Henry H. Shelton, “Joint Statement on the Kosovo After Action Review,” testimony before the Senate Armed Services Committee, Washington, DC, 14 October 1999, quoted in Lambeth, *Transformation of American Airpower*, 218.

99. Gen Wesley Clark describes multiple disputes and differences throughout his memoirs, including the French belief in targeting that left incentives for political settlement and the German belief in correlating reduced military pressure with apparent negotiating progress. Wesley Clark, *Waging Modern War: Bosnia, Kosovo, and the Future of Combat* (New York: Public Affairs, 2001), 236, 351. Madeleine Albright, former US secretary of state, telephone interview with the author, 27 September 2010. See also Ivo H. Daalder and Michael E. O’Hanlon, *Winning Ugly: NATO’s War to Save Kosovo* (Washington, DC: Brookings Institution Press, 2001).

100. Secretary Albright felt that it had been so difficult to obtain NATO member consent for the operation that she had to personally seek to sustain that consensus throughout the war. Albright, interview.

101. Laura Myers, “Civilian Risks Escalate as Kosovo Targets Shift,” *Associated Press*, 18 April 1999, <http://www.southcoasttoday.com/article/19990418/News/304189979>.

102. Gen H. Hugh Shelton, former chairman of the Joint Chiefs of Staff, quoted in David Wood, “U.S. Approach a Disadvantage, Analysts Say; Risk Avoidance Style

vs. Brutality Is the Problem,” *New Orleans Times-Picayune*, 28 March 1999. See also “Press Conference by Secretary General, Dr. Javier Solana and SACEUR, Gen. Wesley Clark,” NATO Headquarters, Brussels, Belgium, 25 March 1999.

103. Daalder and O’Hanlon, *Winning Ugly*, 122.

104. Clark, *Waging Modern War*, 183.

105. NATO ultimately lost two aircraft, although both pilots were rescued. See, for example, “Serb Discusses 1999 Downing of Stealth,” *USA Today*, 26 October 2005, http://www.usatoday.com/news/world/2005-10-26-serb-stealth_x.htm. Human Rights Watch (HRW), *Civilian Deaths in the NATO Air Campaign: The Crisis in Kosovo* (New York: HRW, 1 February 2000), <http://www.hrw.org/reports/2000/02/01/civilian-deaths-nato-air-campaign-0>.

106. Michael Ignatieff, “The Virtual Commander: How NATO Invented a New Kind of War,” *New Yorker*, 2 August 1999.

107. Daalder and O’Hanlon, *Winning Ugly*, 103.

108. Clark, *Waging Modern War*, 118–99.

109. *Ibid.*

110. In theory, targets flow from strategy. Gradualism in itself says nothing about character of targeting choice. General Jumper, former USAF commander, called Operation Allied Force a “campaign-by-target-list management,” comments at an Air Force Association Eak Institute colloquy, “Operation Allied Force: Strategy, Execution, Implications” (Ronald Reagan International Trade Center, Washington, DC, 16 August 1999), quoted in Lambeth, *Transformation of American Air Power*, 222.

111. General Accounting Office (now Government Accountability Office) (GAO), *Kosovo Air Operations: Need to Maintain Alliance Cohesion Resulted in Doctrinal Departures*, GAO-101-784 (Washington, DC: GAO, 2001), 8.

112. Bill Clinton, *My Life* (New York: Alfred A. Knopf, 2004), 854–55.

113. Tony Montgomery, “Legal Advisors and Time-Sensitive Targets,” in *Legal and Ethic Lessons of NATO’s Kosovo Campaign*, International Law Studies 78, ed. Andru E. Wall (Newport, RI: Naval War College, 2002), 213.

114. This legal record ultimately became important for responding to inquiries from the International Criminal Tribunal of the Former Yugoslavia (ICTY) about the legality of NATO operations. ICTY, *Final Report to the Prosecutor by the Committee Established to Review the NATO Bombing Campaign against the Federal Republic of Yugoslavia* (The Hague: ICTY, 13 June 2000), <http://www.icty.org/x/file/Press/nato061300.pdf>.

115. Thomas Lippman and Bradley Graham, “Yugoslavs Fire on U.S. Troops; 3 Missing,” *Washington Post*, 1 April 1999.

116. James E. Baker, “When Lawyers Advise Presidents in Wartime: Kosovo and the Law of Armed Conflict,” *Naval War College Review* 15, no. 1 (Winter 2002): 11–24. Theo Farrell emphasizes legal disputes related to the definition of civilian objects. He rightly points out that the disputes were less a matter of a state’s formal position regarding Additional Protocol 1 and more a matter of how expansively one could interpret customary law regarding military utility. See Theo Farrell, “World Culture and Military Power,” *Security Studies* 14, no. 3 (July–September 2005): 482–83.

117. Farrell, “World Culture and Military Power,” 484.

118. Albright, interview.

119. US lawyers flatly rejected many of the arguments. “The military doesn’t want those restrictions put on them; they’re not legal restrictions, they’re political.” W. Hays Parks, “Commentary,” in *Legal and Ethical Lessons of NATO’s Kosovo Campaign*, International Law Studies 78, ed. Andru E. Wall (Newport, RI: Naval War College, 2002), 281–92.

120. NSHR Proceedings.

121. This was also apparent in debate about targeting Radio Television Serbskia: the United States and other key alliance members held that media was a legitimate target, but other coalition members resisted this claim. See Richard Norton-Taylor, “Serb TV Station Was Legitimate Target, Says Blair,” *Guardian* (UK), 24 April 1999.

122. Clark, *Waging Modern War*, 238.

123. Myers, “Civilian Risks Escalate.”

124. NATO dropped some 23,000 air munitions and fired over 300 cruise missiles. Anthony H. Cordesman, *The Lessons and Non-Lessons of the Air and Missile Campaign in Kosovo* (Westport, CT: Praeger Publishers, 2001), 89.

125. “Pentagon spokesman Ken Bacon estimated that one-third to one-half of all civilians killed in the NATO air campaign may have been deliberately placed around bombing targets,” quoted in “NATO Says ‘Human Shields’ Account for Bombing Deaths,” *CNN.com*, 18 May 1999, <http://www.cnn.com/WORLD/europe/9905/17/kosovo.03/index.html>.

126. HRW, *Civilian Deaths*.

127. A USAF colonel complained that technology allowed intelligence analysts, lawyers, commanders, and others to monitor his actions. In Desert Storm, he said, he and the weapons officer decided which targets to hit. “We’d come back with the [cockpit] videotape and maybe someone would look at it and tell us what we did wrong.” Lt Col Daniel Ourada, USAF, retired, HAF/A2 chief, Director’s Action Group, interview with the author, Washington, DC, 21 December 2009.

128. Mike Short, “Operation Allied Force from the Perspective of the NATO Air Commander,” in *Legal and Ethical Lessons of NATO’s Kosovo Campaign*, International Law Studies 78, ed. Andru E. Wall (Newport, RI: Naval War College, 2002), 19–26.

129. Antonia Felix, *Wesley K. Clark: A Biography* (New York: New Market Press, 2004), 143.

130. Clark, *Waging Modern War*, 434.

131. Albright, interview.

132. James C. O’Brien, special presidential envoy for the Balkans during the Clinton administration, e-mail to author, 24 September 2010.

133. O’Brien, e-mail.

134. Defense analyst Edward Luttwak is cited as the source in Bruce D. Nordwall, “Coalition Conundrum,” *Aviation Week and Space Technology* 151, no. 8 (23 August 1999): 27.

135. Clark, *Waging Modern War*, 416.

136. O’Brien, e-mail.

137. Ibid.

138. Nordwall, “Coalition Conundrum,” 27.

139. “Italian President Oscar Luigi Scalfaro voiced concern today that the bombing ‘has moved from the military to the civilian sector’ and suggested that European

allies have been too compliant in accepting US leadership of the air campaign.” Rowan Scarborough, “As Strikes Mount, So Do Errors,” *Washington Times*, 11 May 1999.

140. Marcus Gee, “NATO Faces Loss of Public Support as Civilian Death Toll Mounts,” *Toronto Globe and Mail*, 16 April 1999.

141. “The view was both that it was rotten that civilians died and that we needed to control it more and do something.” Albright, interview. “The logic of the campaign, and its expansion, in short, brought more allied voices into decision-making throughout the campaign and gave them the ability to condition their support on decisions that they liked.” O’Brien, e-mail. See also General Accounting Office, *Kosovo Air Operations*.

142. Clark, *Waging Modern War*, 240.

143. *Ibid.*, 430.

144. “People would often raise questions about what was happening to civilians after we hit a convoy or something. They had questions especially when we were bombing Belgrade.” Albright interview. Clark reported that “increasingly pointed” pressure about Serb civilian casualties from France, Belgium, Luxembourg, Italy, and even Germany resulted in guidance for “no more strike mistakes.” Clark, *Waging Modern War*, 339.

145. O’Brien, e-mail.

146. Rebecca Grant, *The Kosovo Campaign: Airpower Made It Work*, An Air Force Association Special Report (Arlington, VA: Air Force Association, September 1999), <http://higherlogicdownload.s3.amazonaws.com/AFA/6379b747-7730-4f82-9b45-a1c80d-6c8fdb/UploadedImages/Mitchell%20Publications/The%20Kosovo%20Campaign.pdf>. Forward air controllers could dip to 10,000 feet to improve target identification.

147. Gen Michael C. Short, interview, *Frontline: War in Europe*, PBS, no date, <http://www.pbs.org/wgbh/pages/frontline/shows/kosovo/interviews/short.html>.

148. Amnesty International, *NATO/FRY*, 29–33.

149. W. J. Fenrick, “Targeting and Proportionality during the NATO Bombing Campaign against Yugoslavia,” *European Journal of International Law* 12, no. 3 (2001), 501.

150. Lambeth, *NATO’s Air War for Kosovo*, 140.

151. Short, interview.

152. Phil M. Haun, “Airpower versus a Fielded Army: A Construct for Air Operations in the Twenty-First Century,” *Aerospace Power Journal* 15, no. 4 (Winter 2001): 81–88; and Rebecca Grant, “Nine Myths about Kosovo,” *Air Force Magazine* 83, no. 6 (June 2000): 50–55.

153. Although these changes may have reduced civilian casualty incidents, they did not halt them. For a more full discussion see HRW, *Civilian Deaths*; and Amnesty International, *NATO/Federal Republic of Yugoslavia: ‘Collateral Damage’ or Unlawful Killings? Violations of the Laws of War by NATO during Operation Allied Force* (New York: AI, June 2000).

154. Thomas G. Mahnken, *Technology and the American Way of War since 1945* (New York: Columbia University Press, 2008).

155. William M. Arkin, *Ticking Time Bombs: NATO’s Use of Cluster Munitions in Yugoslavia* (New York: HRW, June 1999).

156. The tank-killing munitions had also been used during Operation Deliberate Force but failed to garner much attention. The ICTY was asked to consider depleted uranium weapons and was decidedly guarded in its opinion. See ICTY, *Final Report*.

157. A hazard warning letter issued by the United States in 1999 seemingly confirmed the threat. See Marlise Simons, "1999 U.S. Document Warned of Depleted Uranium in Kosovo," *New York Times*, 9 January 2001. Depleted uranium weapons were also used in Operation Deliberate Force but avoided controversy.

158. See NATO's 17 March 2005 fact sheet, <http://www.nato.int/du/home.htm>.

159. HRW, *Civilian Deaths*, 31. See also Thomas Michael McDonnell, "Cluster Bombs over Kosovo: A Violation of International Law," *Arizona Law Review* 44, no. 1 (2002): 123–29; and Fenrick, "Targeting and Proportionality," 501. However, General Clark reported that the permission to use clusters was granted about one month later. Clark, *Waging Modern War*, 337.

160. See oral presentation by Under Secretary of State Thomas Pickering on 17 June to the Chinese government regarding the accidental bombing of the PRC Embassy in Belgrade, released 6 July 1999 and cited in HRW, *Civilian Deaths*.

161. Clinton, *My Life*, 854–55.

162. Other negative effects on US interests were attributed to the conduct of the Kosovo campaign. These ranged from a general diminution of US moral authority to the Chinese retraction of trade concessions. Joel Havemann, "Convoy Deaths May Undermine Moral Authority," *Los Angeles Times*, 15 April 1999. In a more direct link, Russia dismissed US criticism of its use of force in Chechnya with a single word: Kosovo. Associated Press, "Russia Rejects Criticism of Chechnya Offensive; Moscow Cites War in Kosovo, Accuses West of Hypocrisy," *St. Louis Post-Dispatch*, 26 October 1999.

163. The US air commander pressed Clark to resume the strikes. Clark acceded but directed additional changes in bombing guidance. Clark, *Waging Modern War*, 298.

164. *Ibid.*

165. W. Hays Parks makes the latter claim in "Rolling Thunder," *Air University Review* 33, no. 2 (January–February 1982), 17; and W. Hays Parks, "Linebacker and the Law of War," *Air University Review* 34, no. 2 (January–February 1983), 8.

166. Amnesty International, "Serbia: Impunity for NATO—Ten Years after Operation Allied Force," press release, <http://www.amnesty.org/en/for-media/press-releases/serbia-impunity-nato-%E2%80%93-ten-years-after-operation-allied-force-20090423>. The outrage only increased when it became known that NATO had called Western journalists to inform them of the need to vacate the station. HRW, *Civilian Deaths*.

167. Snjezana Milivojevic, "And That's the Way It Was: April 29, 1999," *Columbia Journalism Review*, 29 April 2013, http://www.cjr.org/the_kicker/and_thats_the_way_it_was_april_17.php; and Steven Erlanger, "NATO Strikes Serb State TV; Casualties Seen," *New York Times*, 23 April 1999.

168. On 21 April NATO bombed Pink TV and Kosova TV, but no civilian casualties were reported. "Kosovo Crisis Media Dossier: B92," *Radio Netherlands Media Network*, 17 November 2000, <https://web.archive.org/web/20070429122438/http://www.radionetherlands.nl/features/media/dossiers/b92.html>.

169. Compare with HRW, *Civilian Deaths*; and HRW, *Needless Deaths in the Gulf War: Civilian Casualties during the air Campaign and Violations of the Laws of War* (New York: HRW, 1991).

170. Deptula, interview.

171. See HRW, *Civilian Deaths*. The total number of civilian deaths is estimated at 500. Amnesty International, "Serbia: Impunity for NATO." Certainly factors

beyond the strengthened norm itself may have been at play. The international consensus supporting the 1991 Gulf War (reflected in the UN authorization for the invasion) was far higher than the level of support for the war in Kosovo. From a purely Western perspective, the proximity of Europe and the level of empathy with Europeans may have also been factors.

172. For example, during the Kosovo air campaign, French president Jacques Chirac opposed bombing Serbia's electrical power grid. "U.S. and French military officers searched for more palatable alternatives and finally came up with the idea of using the still-secret CBU-94 cluster munition, which could shut down Belgrade's power source for at least a few hours by dispensing carbon-graphite threads on a grid to short it out." Lambeth, *Transformation of American Airpower*, 188.

173. General Accounting Office, "Kosovo Air Operations."

174. Clark said it was always the United States pushing to expand the target list and scope of bombing, contrasting the United States' direct and overwhelming response with a "more far-sighted" French view. Clark, *Waging Modern War*, 449.

175. See the case of Kosovo discussed above.

176. Clark, *Waging Modern War*, 238.

177. Montgomery, "Legal Advisors and Time-Sensitive Targets," 213. A reporter observed, "In the current context, that means choosing targets with the lowest risk of injuring or killing civilians." Scarborough, "As Strikes Mount, So Do Errors."

178. Lambeth, *Transformation of American Airpower*, 222.

179. John F. Harris and Bradley Graham, "Clinton Reassessing Sufficiency of Air War," *Washington Post*, 3 June 1999, <http://www.washingtonpost.com/wp-srv/inatl/longterm/balkans/president060399.htm>.

180. See, for example, Stephen T. Hosmer, *The Conflict over Kosovo: Why Milosevic Decided to Settle When He Did* (Santa Monica, CA: RAND Corporation, 2001).

181. Kurt Schork, "Allies Shrug Off Claims over Civilian Deaths," *Birmingham Post*, 1 June 1999.

182. Lambeth, *Transformation of American Airpower*, 205.

183. See chapter 5 for a discussion of new munitions that proved useful in Operation Iraqi Freedom.

184. NSHR Proceedings.

185. HRW, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: HRW, 2003), 21–27, <http://www.hrw.org/reports/2003/usa1203/usa1203.pdf>.

186. Interviews in theater, Afghanistan, 2009.

187. In practical terms, ground commanders in Afghanistan were often relatively junior members of small special forces teams that were partnered with Afghan coalition forces.

188. Dana Priest, *The Mission: Waging War and Keeping Peace with America's Military* (New York: W. W. Norton & Co., 2003), 155.

189. *Ibid.*, 155–56.

190. *Ibid.*

191. *Ibid.*

192. Firsthand accounts from almost any stage of the two wars illustrate this point. See, for example, Evan Wright, *Generation Kill: Devil Dogs, Iceman, Captain America, and the New Face of American War* (New York: G. P. Putnam's Sons, 2004); Matt Gallagher, *Kaboom: Embracing the Suck in a Savage Little War* (Cambridge,

MA: Da Capo Press, 2010); and Dexter Filkins, *The Forever War* (New York: Alfred A. Knopf, 2008).

193. US Army, FM 3-24, *Counterinsurgency*, 15 December 2006.

194. Gen David H. Petraeus, Congressional Testimony, "Report to Congress on the Situation in Iraq," 10–11 September 2007, <http://www.defense.gov/pubs/pdfs/petraeus-testimony20070910.pdf>.

195. Elisabeth Bumiller, "Anger over Afghan Civilian Deaths Shows Limits of U.S. Air Power," *New York Times*, 23 February 2009; Miles Amooore, "U.S. Air Strikes in Afghanistan 'Kill Dozens of Women and Children,'" *Telegraph* (UK), 6 May 2009; and Jason Motlagh, "U.S. to Limit Air Power in Afghanistan," *Washington Times*, 24 June 2009.

196. Gen Stanley McChrystal, interview with the author, Kabul, Afghanistan, 6 February 2010.

197. "Helicopters, particularly in the Army, do not face the same restrictions or scrutiny as fixed-wing air," according to former Combined Air and Space Operations Center director Col Gary Crowder, USAF, retired. He argues that the Army has "deliberately resisted" using the same "formal hand-off from a ground commander to an Airman" in which very precise description and locations of targets are provided to the aircraft. See, for example, Daniel Sagalyn, "N. Report: Apache Helicopters to Blame for Afghan Civilian Deaths," *PBS News Hour*, 14 July 2011, <http://www.pbs.org/newshour/rundown/2011/07/un-report-civilian-casualties-rise-in-afghanistan.html>.

198. Deptula, interview; Col Gary Crowder, USAF, retired, deputy director of the Combined Air and Space Operations Center (2007–08), interview with the author, Southwest Asia, 11 June 2008; and Col Tom Ehrhardt, USAF, retired, chief of USCENTAF Strategy Division at the Combined Air Operations Center in Saudi Arabia during Operation Enduring Freedom, interview with the author, 25 January 2010.

199. Cliff Tompkins, HAF A9A, "Kinetic Airpower and Civilian Casualties," briefing, June 2009, described in chapter 1.

Chapter 5

Institutional Adaptation

During the 1990s operational constraints stemming from political and military leadership concerns about limiting civilian casualties became a defining element of US air warfare. United States Air Force (USAF) leaders gradually moved from criticizing and resisting these constraints to accepting them as an enduring aspect of modern war. This set in motion the process of institutional adaptation, distinct from the operational adaptation described in the previous chapter.

Preparing *future* air capabilities to minimize civilian harm hinged upon the USAF recognizing and accepting the importance of the challenge. Adapting future war-fighting capabilities through doctrine, tactics, weapons, and training is a service responsibility, distinct from the operational responsibilities of the combatant commands (COCOM).¹ The demarcation between the services and the commands is not absolute. Persistent operational demands shape service priorities, and individuals with operational experience go on to occupy key institutional positions, in turn shaping service priorities. Nonetheless, if the USAF had ignored the issue of civilian harm, it would have developed capabilities without regard to their contributions to minimizing collateral damage. Instead, the harsh realities of constrained air war, reflecting persistent concern about harming noncombatants, led the USAF to develop institutional responses to the challenge.

Beginning in the late 1990s, the USAF took incremental institutional steps to make civilian protection a goal in its own right, rather than viewing it solely as a derivative benefit of airpower's technological evolution. The service developed new weapons designed to reduce civilian harm and developed new capabilities to predict civilian impact of airstrikes. The USAF's evolving approach to civilian protection contrasted starkly with the absence of innovation in ground force planning and capabilities with regard to reducing civilian harm during combat operations.² The USAF's adaptation would prove invaluable during subsequent counterinsurgency (COIN) operations in Afghanistan and Iraq.

From Resistance toward Acceptance

In the years immediately following the Gulf War, airpower proponents resisted seeing avoiding civilian casualties as a new institutional responsibility or an independent requirement. For the USAF, the Gulf War was a vindication of airpower—not a call for institutional change. Many perceived the Amiriyah bombing as a “glitch”—a singular incident. Moreover, it was not even considered a mistake of the USAF’s making. Instead, leaders deemed Amiriyah to be either an intelligence failure or Saddam Hussein’s fault for placing civilians at risk—or both.

In fact, to some airpower experts the Gulf War provided additional evidence that efforts to avoid civilian harm could undermine military success. Military historian Williamson Murray argued that Operation Desert Storm had failed to cause *enough* collateral damage. The coalition’s careful air targeting looked cautious, he wrote, and failed to inflict the destruction necessary to compel Saddam Hussein’s swift capitulation.³ A key Desert Storm air planner, then-Lt Col David Deptula, argued that Gen Colin Powell’s sensitivities about civilian harm were misplaced. “Later, we found out from the intelligence world that as a result of [Amiriyah], Saddam Hussein . . . concluded that we were becoming serious. The actual impact was very different from what Powell thought. Logically we should have turned up the effort then to achieve what we wanted, not turn it down. There’s a real issue of balancing mission accomplishment and collateral damage.”⁴

Such comments echoed the USAF sentiment following Vietnam, exposing the resilient appeal of the short, sharp war. The narrow utilitarian approach to military operations offers a powerful internal logic and is particularly tempting for proponents of strategic airpower. Yet the argument appeared increasingly divorced from reality as it pertained to civilian harm. The Powell-Weinberger doctrine had provided an antidote to Vietnam’s gradualism, and it framed the Bush administration’s approach to Operation Desert Storm. Still, a single mass killing of civilians impeded the air strategy during Desert Storm. Without fully acknowledging the distinction, the USAF was confronting a competing canon of military thought: Carl von Clausewitz’s observations about the political context of war. Faith in “turning up the military effort”—even when it might jeopardize other US objectives—essentially denied the complexity of US political goals in a given conflict. However, in the glowing aftermath of Desert Storm,

the utilitarian strand in US military thinking remained a barrier to change.

There were other institutional reasons to avoid considering alternatives; reducing civilian harm entails several distinct types of costs. Force protection might be jeopardized. USAF voices warned that collateral damage constraints posed significant risk to the aircrews enforcing the Iraqi no-fly zone operations that followed Desert Storm.⁵ Developing new technologies and approaches to address the issue would consume resources and energy and, more importantly, distract from other efforts to enhance military effectiveness. US airpower already was the most accurate and discriminate in the world; further improving capabilities and concepts to protect civilians simply seemed unnecessary.

Over the next two decades, though, three factors combined to change the USAF's perspective. First, the sheer consistency of the constraints on airpower, imposed during different types of military operations and through both Republican and Democratic administrations, indicated that concern about civilian casualties had become an enduring factor in using airpower. Second, accommodating these constraints was in some respects—although not entirely—consistent with the desire for greater precision and the use of effects-based targeting concepts that the USAF already had been pursuing. Finally, there was a demonstrable payoff in developing tools to demonstrate airpower's ability to address civilian casualties. What came to be called collateral damage mitigation (CDM) offered a route toward regaining greater operational freedom and ensuring airpower's role in future conflicts. Thus, once airpower leaders came to view collateral damage constraints as unavoidable, they recognized that satisfying these constraints served USAF institutional objectives.

Growing familiarity with the constraints and concerns further eased USAF opposition. The service continued over the next decade preparing its crews for missions in which collateral damage mattered. Aircrews devised and trained on tactics that ensured greater attention to civilian harm—whether flying routine no-fly zone missions over Iraq or engaging in a high-profile humanitarian intervention.⁶

Despite concerns that doing so would undermine airpower, the new practices offered evidence that airpower could accommodate civilian protection concerns without compromising success. The difference between Vietnam and Kosovo, one analyst wrote, was that improved equipment and training allowed the “air weapon [to] prevail

despite the resurgent burdens of gradualism and proportionality.”⁷ (emphasis added) Both Operation Deliberate Force (1995) and Operation Allied Force (OAF, 1999) succeeded in spite of the imposed collateral damage restrictions. Indeed, the USAF ultimately portrayed the Kosovo air campaign as delivering decisive strategic effects independently of ground forces.⁸ OAF, in particular, publicly vindicated airpower’s long-asserted strategic role. Airpower could “afford” the constraints imposed by civilian protection.

Aircrews performed brilliantly in the face of the new demands, and there were few discernable costs. US aircrews would face serious air-to-air challenge only in a handful of notional high-intensity wars now that the Cold War was over. Aircrews still faced varied threats from surface-to-air fires. However, devoting more effort to avoiding civilian deaths did not directly translate into American casualties.

From the no-fly zone enforcement through the air campaigns in the Balkans, hundreds of Airmen gained individual experience in operating—successfully, even if at nominally higher risk—within severe collateral damage constraints. Many of these individuals would go on to serve in USAF staff roles in which they then shaped institutional views and choices.⁹ The service gradually grew more comfortable with the practice of prioritizing the avoidance of civilian harm.

Airmen—most prominently Kosovo air commander Lt Gen Michael Short—still complained about gradualism and micromanagement.¹⁰ Nevertheless, by the time of the Kosovo campaign, senior USAF leaders had begun to accept a new reality. The vice chairman of the Joint Chiefs of Staff, Gen Joseph Ralston, USAF, argued that civilian casualty concerns were here to stay.¹¹ Even General Short conceded that the restrictions might be a permanent phenomenon. “Concern for collateral damage drove us to an extraordinary degree and it will drive the next generation of warriors even more so, because whereas I see [restraint] as an extraordinary failure, the leadership within the NATO senior administrations would say this was indeed an extraordinary success.”¹² Short’s observations acknowledged that political leaders viewed war through a different lens.

The civilian leadership’s perspective on operations in Kosovo was indeed broader and more sensitive to the political context of using force. While American military commanders, having studied Clausewitz, intellectually understood this reality, many still longed to practice “pure” doctrinal concepts (and advance institutional interests) as they conducted war. European air leaders appeared more accustomed

to political constraints and less sympathetic to US airpower complaints.¹³

After Kosovo, the USAF began grappling more directly than ever before with the implications of political concerns about civilian protection. “It is the politics of the moment that will dictate what we can do,” said Gen John P. Jumper, USAF. “If the limits of that consensus mean gradualism, then we’re going to have to find a way to deal with a phased air campaign. Efficiency may be second.”¹⁴ In lamenting the demise of “doctrinally pure strategy,” a RAND airpower analyst conceded the need “to recognize and accept instead that it is, after all, political considerations that determine—or should determine—the way in which campaigns and wars are fought.”¹⁵

Indeed, a rising generation of US Airmen appeared well acculturated to civilian casualty restraints through their repeated operational familiarity with such restrictions. Col Brian McDonald, USAF, summarized this attitude in suggesting that Airmen should “consider a politically restricted target list like the weather: complain about it, but deal with it.”¹⁶

The lesson seemed clear: if airpower was to succeed in the future, it would need to do so *despite* restrictions reflecting sensitivity to the civilian protection norm. This meant that instead of relying on adaptation in the field on the fly, the USAF would have to undertake more forward-looking institutional adaptation.

Institutional Adaptation

Fortunately for the USAF, the service already had been heading in a direction largely compatible with this goal. The USAF had been seeking greater precision, less destruction, and economy of force. This contrasted with the sustained ground forces focused upon applying massive destructive power at greater standoff distances. USAF efforts therefore had naturally, albeit inadvertently, supported civilian protection objectives.

Two new synergistic avenues of adaptation emerged in the late 1990s. Advances in precision enabled more tailored and discrete approaches to targeting, which in turn demanded measuring effects—including civilian casualties. This motivated efforts to improve capabilities for the specific purpose of limiting civilian harm. In small steps that flowed logically from and reinforced one another, the

USAF gradually changed its attitude toward civilian protection. It no longer assumed that civilian protection was an inherent or subsidiary aspect of the American way of war. It began, haltingly, to regard civilian casualty reduction as an independent goal and an institutional responsibility.

Effects-Based Operations and Measuring Civilian Effects

After Desert Storm, the USAF emphasized the value of its strategic, rather than tactical, contributions to the fight. It saw the war as vindicating an effects-based approach, one that provided decisive results more efficiently and with reduced loss of life for Americans.¹⁷ After Operation Deliberate Force in 1999, the USAF also began emphasizing how effects-based operations (EBO) helped to reduce airpower's impact on civilians.¹⁸ Air Force Chief of Staff Ronald Fogelman even claimed that the USAF could deliver a "new American way of war."¹⁹

Skeptics in the Army and Marine Corps dismissed EBO as the pursuit of tangential and uncertain psychological effects.²⁰ Ground forces preferred the certainty of destroying enemy military capabilities. Indeed, air advocates struggled with how to measure "cumulative impact at operational and strategic levels" to support overall campaign success.²¹

The USAF's doctrinal movement toward EBO logically demanded quantifiable "effects." As civilian impact mattered more to the USAF, the service created tools to predict the effects of targeting on civilians. The ability to predict and quantify civilian casualties—as we saw in the case of Kosovo—proved critical for enabling the greater operational freedom in targeting.

Measuring Effects on Civilians

The most obvious way to assess civilian harm is to document the actual effects on noncombatants in war. The United States did so after WWII. The resulting Strategic Bombing Survey sought to measure not just the destruction of infrastructure and enemy forces but also to estimate civilian casualties.²² Yet the US military subsequently declined to consider the civilian in its battle damage or postconflict assessment processes. Even dedicated assessment assets—such as the USAF's conventional weapons effects assessment teams (CWEAT)—would examine only physical damage to structures and weapons systems when performing poststrike assessments in the field; they did

not assess civilian consequences.²³ US service member deaths were tracked carefully. The military often documented body counts of enemy killed, at least through the Vietnam War. The armed forces voraciously measured and reported on easily tracked *inputs* such as sorties conducted and tonnage of weapons dropped. However, they did not assess civilian casualties.

During the 1980s humanitarian and human rights groups began documenting civilian deaths and injuries that US forces caused in Central America. By the 1990s this work had become a central occupation of many American and international nongovernmental organizations (NGO) and regional bodies, and the United Nations also began counting civilian deaths.

It was not until 2005, in Iraq, that the US military began compiling civilian casualty data. Despite vociferously resisting this responsibility for some 50 years, international expectations about war, transparency of the battlefield, and American claims of good intentions combined to demand greater awareness of the results of using force.²⁴ More immediately, though, ground force commanders found the information operationally useful.

For the USAF, the lack of empirical data posed an obvious challenge to improving effects-based targeting, particularly since political guidance increasingly demanded fewer civilian casualties. The failure to measure actual effects on civilians also prevented the USAF from substantiating its claims to support the protection of civilians during military operations. To advance its pursuit of precision and EBO, the service followed a different path to assess civilian harm.

Predicting Effects on Civilians

The USAF chose to focus on prediction—theoretical modeling of what *would* happen—rather than on empirical data regarding civilian effects. This approach was born of its organizational history and culture. As primary guardian of the nuclear mission, the USAF had already developed tools for predicting “collateral damage” from nuclear explosions. Modeling civilian effects of nuclear strikes “fit less well with the assumptions and aspirations of precision [nuclear] strategic bombing doctrine” because it exposed massive human suffering.²⁵ Although both the methodology and moral implications of its efforts remained controversial, modeling was the only viable route toward assessing employment of modern nuclear targeting options.²⁶ The

conventional side of the USAF initially faced similar psychological and technical hurdles. Unsurprisingly, then, modeling civilian harm from aerial bombing did not begin specifically as an effort to count civilian casualties but as a corollary of more familiar questions.

A major impetus was a technical puzzle from Operation Desert Storm—one that threatened to undermine the USAF's effects-based targeting approach. US airpower's destruction of Iraqi infrastructure was effective. It also contributed to unintended second-order effects of disease and death for up to 100,000 Iraqi civilians.²⁷ The Joint Warfighting Analysis Center (JWAC) had been conducting the relevant engineering and modeling analysis and developing precision targeting options. Nevertheless, the damage to Iraq's electrical system had been more extensive and permanent than anticipated. So airpower leaders launched a voyage toward joint collateral damage estimates with a narrow question: how could airpower more predictably and discretely disable infrastructure in the future, such that it would yield only desired military effects?

The initial interest lay in improving airpower's ability to attack urban infrastructure. However, once the challenge was no longer defined as maximizing destruction, the analysis assumed a fresh and inexorable logic. Launched on the path of minimizing specific effects, the modeling community developed ways to estimate the direct physical impact on physical persons.

Collateral Damage Estimation Tool

The value of modeling civilian casualties proved significant. "Modeling provides the ability to demonstrate to your political masters how you can achieve the results you want," Lieutenant General Dep-tula observed. "You can lift these restraints if you can demonstrate the particular effects of specific weapons, and that will allow for greater application of force."²⁸ These benefits drove the continued development and refinement of an estimation process until the pace and nature of air operations in the Middle East drove demands for a simplified, more responsive system.

The first phase of the effort was creation of a collateral damage estimation tool (CDET) that provided an automated inventory of weapons to set parameters and calculated the effects of particular munitions. As discussed in chapter 4, this tool was still evolving as NATO commenced OAF in 1999. USAF strategists previously had

lacked useful data about the potential civilian impact of bombing. However, in the Kosovo air campaign, civilian casualty estimates became a critical element of the target approval process. In fact, the predicted number of civilian casualties often determined whether a target or an air strike would be approved or not. Adjusting the parameters of the strike to yield a smaller predicted number enhanced the prospects for strike approval and helped preserve a central role for airpower.²⁹

The CDET created a collateral damage estimate (CDE) that was included in each “target folder” considered by NATO or US approval authorities. Targets of greater sensitivity because of their purpose or predicted civilian casualties were required to go to higher approval levels, including, in the parallel US chain of command, the president of the United States. In OAF, any strike in which 20 civilians deaths were predicted required the president’s approval; the threshold for presidential approval was 30 civilian deaths during Operation Iraqi Freedom (OIF).³⁰ Such approval thresholds were applied regardless of the value of the target—notably delinked from LOAC standards of proportionality. The threshold has been enshrined in doctrine as the noncombatant casualty cutoff value (NCV) and is now specified in operational ROE.³¹

CDET evolved into a tiered system of categories of analysis. These ranged from the cursory—simply to see if any civilians might be within the radius of the strike blast—to highly detailed computer simulations. The most detailed analysis could simultaneously replicate multiple parameters of a proposed strike and predict its impact on people, both directly through explosion and blast and also indirectly through the destruction of buildings or even the trajectory of shards of broken window glass.³² Some likened this analysis to a “high powered electron microscope,” and the process required hours to complete.³³

Limits of Modeling

US modeling capabilities are highly sophisticated, yet they remain flawed in important respects.³⁴ Questionable assumptions from prior studies were transferred to the CDET process. Modelers applied the parameters that had previously been used to ensure destruction of targets, but they now applied these parameters to civilian casualty estimates. However, the weaponeering process is designed to *underestimate* the

effects of a weapon (in order to ensure destruction), whereas civilian protection estimates should instead *overestimate* potential harm so as to understand the outer limits of effects.³⁵

In addition, the models remained largely theoretical. Unlike nuclear weapons, combatants have repeatedly used conventional weapons in modern conflict. The USAF could have used the actual results of airpower on civilians to corroborate the CDET models or enable adjustments.³⁶ Yet because the US military for decades dismissed the desirability and feasibility of conducting “civilian body counts,” the USAF lacked data to validate or adjust its models.³⁷ Some ground force units kept information about civilian casualties, but the collection or dissemination of even that partial data was rare. Instead, the military spent significant effort seeking to counter data provided by the press, NGOs, or intragovernmental bodies.³⁸ Until very recently, the USAF did not even evaluate these outside organizations’ operational assessments of the effects of USAF bombs.³⁹

The armed forces acknowledge that collateral damage estimates are imperfect guides to military decision making. “The CDM [collateral damage methodology] is a balance of science and art that produces the best judgment of potential damage to collateral concerns. As a science, the CDM uses a mix of empirical data, probability, historical observations, and complex modeling for CD [collateral damage] assessments. However, the science is inherently limited by quantity and reliability of collected and analyzed weapons effects data and target information. Furthermore, the science of the CDM cannot always account for the dynamics of the operational environment.”⁴⁰ The modeling cannot account for “transient” civilians; “therefore, it is critical that CDE Level 5 estimates never be portrayed as an expected “casualty count.”⁴¹ Yet the establishment of the NCV inevitably gives the numbers enormous power.

Maj Gen Charles Dunlap described the system as “a kabuki dance because you don’t have the fidelity of systems; they can’t tell you the reality.”⁴² Key assumptions could be adjusted so that estimates could stay below the specified level of political approval. For example, if a strike was predicted to have 31 civilian casualties, triggering White House review, it would be possible to adjust assumptions such that the recalculated numbers fell below 30 and thereby avoided presidential scrutiny.⁴³

Limitations of the estimation process raise valid questions about the purpose and utility of the CDE. Current doctrine notes that the

estimate allows commanders to mitigate unintended or incidental damage or injury to civilian or noncombatant persons or property or the environment.⁴⁴ The process also “assists commanders in weighing risk against military necessity and in assessing proportionality within the framework of the military decision-making process. In short, the CDM is a means for a commander to adhere to [the law of war].”⁴⁵ However, as the doctrine acknowledges, the process is not determinate, and far more than the law of war is at stake.

Collateral damage estimates “are meant to inform decision makers and commanders and are not decisions themselves.”⁴⁶ Therefore, why complain if the system is imperfect? Is it not better to have at least standardized swags than just educated guesses? The downside risk lies in what the numbers suggest and allow in practice.

Tyranny of Numbers

Data can easily assume a life of its own, even in a process recognized as complex and interpretive. Fighting the tyranny of numbers in the targeting process remains a challenge. Numbers not only can become just the key to political oversight but also can sometimes—as in OAF—function as the *de facto* criteria for targeting. This can be undesirable from a variety of perspectives.

With the focus on the CDE, a consideration of civilian impact can be divorced from military effects.⁴⁷ As one military lawyer complained, the process reflected a “desire to make a decision based on some objective ‘number’—no matter how unscientifically reached or misunderstood—rather than a subjective ‘value.’”⁴⁸ In his mind, this warped the target approval process by removing consideration of the strikes’ potential benefits—the essence of any LOAC proportionality judgment.

The CDET process had the potential to blind operators as well, substituting a number for a real effect. One modeler complained that others “want to maneuver the system so they get the results they want for airpower. They think ‘If I get approval for this, I need to know what to tell the tribal sheik the impact will be.’ They aren’t thinking about how the locals will view the hole and the buildings. They’re thinking how many, the numbers, to get approval.”⁴⁹

Finally, the numbers—despite their clear doctrinal caveats—can provide false reassurance, or even incentives, for targeting that might not otherwise be deemed acceptable, appropriate, or necessary. If a

legally questionable target can be eliminated with predicted zero civilian casualties, it is likely to move higher up on the preference list even if its military value is minimal. Similarly, political and military decision makers may feel constrained to attack a particular target set simply because it is predicted to cause few civilian casualties.

CDET was originally developed for preplanned attacks against fixed targets; it was not initially envisioned to have tactical applications. CDET modeling required extensive information on the materials in the target, population density, terrain, aim points, munitions, and so forth, and it took at least four hours to run the modeling software.⁵⁰ Because the process was complex and lengthy, it was unclear that it could support a dynamic fight (versus strategic targeting). Indeed, the CDET process proved unwieldy for informing close air support in COIN, an urgent requirement after the 2001 invasion of Afghanistan.

Accordingly, the JWAC in 2002 developed a simplified version of CDET called “FAST CD.” This software drew a blob-like two-dimensional footprint of a proposed air strike’s estimated blast radius (giving it the unfortunate colloquial name “Bugsplat”).⁵¹ It was much faster but not as comprehensive or accurate. Unlike its “mother” CDET program, which took hours to yield results, FAST CD could provide a response in as few as five minutes and generally no more than 10.

Approved for use during the planning of the invasion of Iraq, FAST CD quickly became the primary process for estimating civilian casualties. United States Central Command (USCENTCOM), the command with oversight of operations in Afghanistan and Iraq, in 2004 assumed responsibility for most collateral damage assessments.⁵² This change allowed the command greater control over, and responsiveness to, the field commanders seeking approval for air strikes. More detailed CDET analysis by JWAC was required only rarely.⁵³ One leading technical expert considered this problematic. USCENTCOM “doesn’t want bigger numbers based on factual engineering data,” he explained. “They use digital data—the ring system—but that’s just a good first cut. . . . They assume away complexity and just let the [ground] commander take the risk.”⁵⁴

However, once the CDE process entered the mainstream of the joint doctrine, even the simplified process became increasingly complex, deconstructed to its smallest tasks, labeled with overlapping acronyms, and codified in various training and certification programs. The 2009 Chairman of the Joint Chiefs of Staff Instruction (CJCSI)

3160.01 articulates five levels of analysis and risk. The first step, CDE 1, determines whether the target can be positively identified and is a valid military target. CDE 1 also provides an initial collateral damage estimate for the employment of all conventional munitions. The second step, CDE 2, provides an estimate for precision-guided unitary and cluster munitions based on nominal weaponeering restrictions. CDE 2 also provides an assessment of whether a target meets the minimum requirements for employment of air-to-surface and surface-to-surface unguided munitions. The third step, CDE 3, provides specific [collateral effect radius] values and weaponeering assessments for all precision and unguided munitions to ensure the desired effect is achieved while mitigating collateral damage. The fourth step, CDE 4, further refines the CDE 3 assessment by incorporating collateral structure type with the goal of achieving a low CDE while minimizing tactical restrictions. Finally, CDE 5, casualty estimation is employed when some level of collateral damage is unavoidable.⁵⁵

CDE has become an essential aspect of the targeting process. Doctrine now includes unprecedented detail about the considerations and ramifications of civilian casualties.⁵⁶ Acronyms multiplied and rolled off tongues: CDM (CDE methodology) and CDA (the final CD assessment). Conducting CDE became so routine that Airmen hardly noticed it. Visits to the Combined Air and Space Operations Center demonstrated that what planners had once dismissed as an impossible expectation or an unwieldy imposition was now regarded as simply another step in the planning process and the conduct of operations.⁵⁷

Despite the rapid institutionalization of the CDE practice, the future of the estimation and assessment processes remains uncertain. Lodging responsibility for battlefield assessments in combatant commands has compelling operational logic, yet it complicates the question of institutional responsibility for the tool itself. The COCOMs—rightly concerned with use—have neither the capacity nor the mission to improve estimation processes. Moreover, JWAC's original CDET work was underwritten only through supplemental (nonrecurring) funding, not the regular budget cycle.⁵⁸ It is unclear which entities—the services, the joint community, and so forth—will be responsible for institutional investment in improved CDE.⁵⁹ This uncertainty has implications both for the possibilities of analysis of *actual* collateral damage and for future refinement of estimation tools. Both streams of work should shape future capabilities and concepts (e.g., munitions and platform requirements or improved tactics).

Overall, the emergence of the CDE process was a qualified triumph for civilian protection. It represented an unprecedented investment in understanding—and limiting—the effect of military action on civilians. It had important limitations. First, the systems were not calibrated to empirical data about actual effects of military force. The second limitation lay primarily in how CDE was used, since the numbers created an illusion of certainty and control and risked driving decision making. On the other hand, CDE allows political and military leaders to anticipate better the potential civilian harm in specific targeting choices and to decide whether to risk the potential civilian cost regardless of the legality of taking action. CDE also highlighted tradeoffs in *how* a given target might be attacked (in addition to whether to attack it), in many cases allowing mitigation of collateral damage through actions that brought the United States little, or zero, additional risk, such as choosing a more appropriate munition or altering the angle at which the aircraft approached the target. CDE enables win-win solutions to reduce civilian deaths and injury without undermining US military objectives.

Beyond Precision: New Weapons to Reduce Civilian Harm

After the first use of laser-guided munitions in Vietnam, the United States acquired a small arsenal of precision weapons and the enabling technologies: lasers, computers linked to satellite position systems, gun cameras, explosive technology refinements, and unmanned surveillance drones—the latter of which the USAF now refers to as remotely piloted vehicles (RPV). However, precision did not make its true public debut until Operation Desert Storm in 1991, where it was arguably overhyped in videotape extolling the virtues of laser-guided missiles. Only about 8 percent of munitions deployed during conflict were smart bombs; precision-guided munitions (PGM) remained a nascent capability.⁶⁰

The USAF nonetheless concluded that precision was not simply consistent with a doctrinal emphasis on the economy of force but was also crucial for military success.⁶¹ Following Desert Storm, key USAF voices argued that the future lay in precision. Gen Lee Butler, the former head of Strategic Air Command (SAC), said that greater air precision was essential if the service was to remain relevant. Bombing

proficiency had not advanced sufficiently, he argued; airpower must change lest it become irrelevant. “If we had to do the Persian Gulf six or seven years from now, and all SAC could do was come with B-52s and drop banded high drags from forty thousand feet, then we would not be invited to participate,” he warned.⁶² The secretary of the air force later noted that the role of PGMs had become “central in this media-intensive environment we operate in . . . [and] essential to modern air operations.”⁶³

The USAF committed itself more fully to precision.⁶⁴ Modifications on existing weapons during the early 1990s, such as the laser-guided Hellfire II missile, were touted for providing additional flexibility for aircraft and otherwise enhancing war-fighting capabilities. Their smaller size and precision guidance also offered derivative benefits with regard to reducing collateral damage.

Cost remained a key hurdle for PGMs, however. As late as 1996, the former USAF chief of staff complained that the price of highly accurate cruise missiles made them impractical to actually use in war.⁶⁵ The service continuously sought lower-cost precision alternatives; it began developing a capability to convert conventional munitions to PGMs in 1992. The GBU-31 Joint Direct Attack Munition (JDAM) was essentially a smart guidance system that could be strapped onto “dumb” bombs of various sizes. JDAM used the emerging Global Positioning System (GPS) to overcome the weather limitations of laser guidance, thereby increasing the flexibility and reliability of conventional airpower.⁶⁶ This low-cost capability was tested at the end of the decade and made a successful combat debut in OAF.

The USAF also refashioned air delivery platforms and improved surveillance and reconnaissance systems, including the development of relatively inexpensive unmanned systems. RPVs “not only improved situational awareness and the ability to discriminate visually, they eventually became deadly weapons in their own right. Able to stay “on station” far longer than manned aircraft, RPVs were better suited to awaiting complex target approval processes and provided a means to avoid any risk to pilots.”⁶⁷

The net result of airpower investments during the 1990s was improved precision, more widely available, at reduced cost. This made it possible to increase the rate of PGMs’ use from less than 10 percent in Desert Storm to about 35 percent during OAF.⁶⁸ Larger numbers of more accurate weapons also helped reduce unintended casualties. Even so, the Kosovo campaign revealed shortfalls. Bad weather had

interfered with navigation aids, except in the case of the all-weather JDAM. Demand exceeded supply; even with a growing inventory, the United States nearly ran out of key low-collateral-damage weapons. The USAF recognized that the PGM effort required more institutional attention in order to be ready for the next air war.⁶⁹

OAF also highlighted the need for developing capabilities *specifically* in order to minimize collateral damage. Greater institutional awareness of the changed operating environment eventually led to an entirely new category of weapons, referred to as lower-collateral-damage capabilities.⁷⁰ Some of the key considerations include the size of the bomb (or more specifically, its explosive charge), the bomb's casing (whether it functions as an independent kill mechanism), and the guidance system that steers the bomb to the target (laser guidance is subject to atmospheric and other distortions whereas GPS functions in all weather conditions).

So, for example, the USAF in 2001 awarded a contract for a 250-pound small diameter bomb (SDB). The USAF noted that the weapons increased flexibility and allowed greater numbers of bombs per platform, but the primary utility lay in reducing collateral damage.⁷¹ In addition to elevating the priority of low-collateral-damage weapons, the USAF embraced different types of nondestructive munitions to minimize harm, such as the carbon-filament bombs that could temporarily disable electrical wires.⁷²

The USAF also began considering new options for minimizing the blast or fragmentation from conventional munitions. These innovations, often emerging out of the Air Armaments Center (AAC) at Eglin Air Force Base, stemmed from earlier field adaptation. As a joint task force commander in Operation Northern Watch, then-Brig Gen David Deptula sought innovative solutions to the challenge of avoiding civilian harm. "There were so many games the Iraqis played, like putting a surface-to-air missile next to a mosque. I know I can't use a 2,000-pound weapon or even a 500-pound weapon with a steel casing. So, I went to the flight line and I told the F-15E guy to load an inert bomb—a GBU-12—a laser-guided, 500-pound bomb. And, he looked at me like I had three heads. I said, '500-pound coming at you at 500 knots is enough to ruin your whole day if it hits you.'"⁷³

Unlike precision, which had multiple advantages, reducing blast was primarily useful for reducing unintended harm to civilians and civilian objects.⁷⁴ In seeking to reduce collateral damage with inert weapons, Deptula ushered in a new look at an existing technology

used primarily for training purposes.⁷⁵ Eglin's Air Force Research Lab began experimenting with the concept of a nonexplosive bomb.

The USAF subsequently sought modifications to existing munitions to reduce their blast and secondary effects. In 2002, when USCENTCOM identified a need for a nonexplosive area munition to destroy soft targets, Eglin was able to respond within an astonishingly short 98 days.⁷⁶ The CBU-107 Passive Attack Weapon is a guided canister that flings tungsten and steel rod "penetrators" across a limited diameter, avoiding fragmentary blast damage to surrounding areas. During the 2003 invasion of Iraq, US forces used this weapon to remove antennas on buildings in Iraq.⁷⁷

The service also began developing new bomb casings to limit blast effects on civilians.⁷⁸ For example, the GBU-39B Focused Lethality Munition (FLM) is an SDB (250-pound bomb) with a carbon-fiber casing. Unlike a steel casing, which is scored to ensure that it will disperse fragmentary shards to destroy objects or persons, the carbon-fiber casing disintegrates.⁷⁹ In addition, the FLM's explosive fill is mixed with tungsten particles to limit the weapon's destructive zone to just a few meters across. The USAF used this GPS-guided weapon in Iraq in 2006.⁸⁰

Forces in the field continued to request expanded air options for reducing civilian casualties in the urban COIN fight.⁸¹ Too large a gap remained between nonlethal options and the lowest-collateral-damage capabilities then available. This gap left forces without the full range of tools they needed in air support. Skirting normal weapons development procedures, the Joint Urgent Operational Need (JUON) request process led to the production of the nonlethal JDAM and the certification of USAF platforms to carry the Navy's new low-CD weapon.⁸² The impetus for adaptation remained the same: operational freedom. As one capability needs statement explained, "This reduction in collateral damage will allow [combatant commanders] to place previously off-limits targets at risk."⁸³

By necessity, the USAF also began to rethink airpower as a nonlethal tool. In some respects, this reflected the service's studied ignorance of lessons from Vietnam and other limited air engagements that did not fit its preferred model for employing airpower as a strategic capability and pursuant to Weinberger-Powell sensibilities.⁸⁴ Nevertheless, airpower rediscovered a broad set of capabilities to meet COIN needs. Manned aircraft and RPVs were used to deter or disperse insurgents, gather intelligence, and monitor patterns of life to better inform targeting

or signal US presence to reassure the population or coalition forces. The USAF began to conceptualize the show of force and the show of presence as tactics for providing nonlethal effects, further codifying airpower's flexibility and responsiveness in constrained operating environments.⁸⁵

For pilots engaged in careful tactical applications of force, even the gradualism of OAF or the careful strategic targeting during the first phase of OIF seemed in retrospect to reflect a “fangs-out, kill-kill-kill culture” in which airpower maximized the number of bombs dropped and destruction caused.⁸⁶ By the time of Afghanistan, *not* dropping weapons had become a metric of success. The restraint, explained one pilot, required “a different mentality.”⁸⁷

The continuing USAF weapons innovation did not occur in a vacuum. New systems reflected demands—often in the form of urgent requests—from operators in Iraq and Afghanistan who were fighting in COINs that demanded sensitivity to collateral damage. Lt Col Andrew D. Spires, chief of AAC's weapons and tactics division, explained that because Airmen in the field were expending an “extraordinary amount of effort [on the task of limiting collateral damage,] . . . a lot of that drives the engineering on what we need in theater.”⁸⁸ Therefore, there was receptivity when USAF Col Thomas Ehrhard asked scientists at Lawrence Livermore National Laboratory whether they could modify a standard bomb series by creating a composite casing that would minimize blast and collateral damage.⁸⁹ The ultimate answer to this question was the BLU-129B, described as the FLM's “big brother,” which came into use in Afghanistan in 2011.⁹⁰ This 500-pound bomb has a composite case warhead that can be laser guided for greater accuracy and flexibility or have a JDAM guidance kit strapped on to perform in poor weather conditions.

By 2011 the USAF was able to portray itself as moving into a new era of civilian-friendly weaponry.⁹¹ Brig Gen Jerry P. Martinez told Congress that new USAF capabilities allowed “enhancing prosecution of targets while minimizing collateral damage and the associated negative public reactions and perceptions. The Air Force has also made significant gains in adapting to the requirement for precision, low-collateral damage, and low civilian casualty fires with investment in additional joint terminal attack controllers, as well as research and development in relevant third-generation munitions.”⁹² He went on to explain that first-generation weapons were WWII-era fragmentary munitions while second-generation weapons are precision-guidance

and fragmentary bomb munitions. Third-generation weapons have not only precision guidance but also “commensurate precision effects.”⁹³

Although collateral damage mitigation had gained higher priority, it still had to compete with other institutional objectives.⁹⁴ For example, the USAF appeared to balk at investing in RPVs at a level that met operational needs in COINs. Unmanned platforms conflicted with preserving roles for pilots.⁹⁵ More generally, programmatic decisions to create specialized capabilities to limit collateral damage created tensions internally, because some viewed such decisions as inconsistent with the requirements of high-intensity conflict that had driven demand for air platforms and justified the USAF’s strategic role. While precision is advantageous in all types of conflicts, including major combat operations, planners regarded low-collateral-damage weapons and techniques as a specialized requirement virtually irrelevant in a major war. Some innovators within the USAF found this frustrating.

Col Tom Ehrhard was one such innovator. While serving in Afghanistan, he had promoted collateral damage–mitigation tactics. These included substituting 500-pound bombs for the 2,000-pound weapons that were preferred early in the conflict and for eliminating “z-axis” error by employing air weapons at a 90-degree angle, which significantly reduced circular error probability in mountainous terrain.⁹⁶ His concerns extended to other challenges such as bomb fragmentation and the sensitivity of laser-guided bombs to weather, laser frequency, and employment tactics that marred their otherwise impressive accuracy.

Upon returning to Washington, DC, Ehrhard decided to tackle the longer-term challenge of improving air-launched munitions. “I come from the nuclear community,” Ehrhard explained. “My lesson from the nuclear business is stockpile to target discipline. A bomb should only go off if everything goes right. I walked into the conventional community where no one regarded weapons that way. And, I was energized by engagement [on civilian harm] with the [Harvard] Carr Center dialogue; so, I started seeing the problem through that lens. I thought we could fix some things through technology, like a fuse that would prevent a misguided weapon from exploding.”⁹⁷

He encountered repeated roadblocks in what seemed to him (and to weapons designers he spoke with) a low-cost, sensible idea that could save civilian lives. He just wanted a fuse to disarm a bomb if it did not get the right input—essentially an abort option on the

weapon. Such a fuse could prevent the bomb from arming if it did not see the laser spot, could not find the right frequency on which the target were being lased, or if the pilot needed to pull the bomb off target at the last minute. Ehrhard appreciated the complexity of fuses and was not sure the fix would be feasible. Therefore, while a student at the School of Advanced Airpower Studies, Ehrhard “went over on my own time to talk to the ‘fuse guru’ at Eglin AFB. . . . After grilling me with questions, he finally said that designing it would be trivial—i.e., easy. . . . He concluded that every bomb should have it.”⁹⁸

However, it was not that easy to make it happen within the USAF. The issue was not substantive. “There’s no logical pushback; I win every argument,” Ehrhard explained. “It’s pure bureaucracy. Who will pay for it? Who’s going to spend money to do it in the absence of a program? Who’s got the requirement? I’d get them the requirement, then they’d deny it. One general approves the idea, and the guy underneath waits him out till he leaves and then I have to start all over again. They’d say ‘There are too many things we’re doing. It doesn’t fit into our plan. The AAC hasn’t said they need it.’”⁹⁹ Ehrhard became discouraged.

Despite the progress that was made throughout the 2000s, then, countervailing pressures limited the USAF’s investment in collateral damage mitigation. A 2003 Defense Science Board study concluded that a variety of institutional factors prevented DOD from supporting low-collateral-damage capabilities “to the extent possible and the degree necessary.”¹⁰⁰ These institutional factors include an incomplete understanding of likely enemies; absence of comprehensive effects assessment and failure to fully develop tools to shape and monitor effects; weakness of anticipatory, collaborative contingency planning processes; and the intellectual development to support these objectives.¹⁰¹ Even when civilian protection concepts were developed and approved, many were simply not considered top priorities when stacked against other requirements.

Nonetheless, the USAF had come to recognize collateral damage mitigation as an independent—not derivative—objective for the development of capabilities. The new capabilities were win-win propositions—more effective for the mission and less deadly for the civilian. Furthermore, the service no longer viewed collateral damage exclusively in the context of legal compliance or moral obligation. Addressing civilian protection was important to the service because it could help ensure that airpower would remain relevant and effective.

Conclusion

In the dozen years that preceded US engagement in COIN operations in Afghanistan and Iraq, the USAF had begun integrating civilian casualty mitigation not just into its conduct of operations but also within its institutional ethos. During the 1990s, the USAF had come to accept that operational constraints to avoid civilian casualties were likely unavoidable, and accordingly the service began to accommodate civilian casualty mitigation into its longer-term institutional capabilities and concepts.

The USAF turned its response to civilian harm from a liability into a virtue. Today, the service emphasizes its abilities to reduce civilian harm and portrays those abilities as advancing institutional goals. The USAF's analytical arm, A9, argues that collateral damage minimization helps maintain airpower's asymmetric advantage.¹⁰² Airpower advocates continue to tout airpower's unique characteristics of speed, flexibility, and mass effects, but they also stress airpower's ability to limit collateral damage. This latter characteristic, one expert writes, offers "the greatest pertinence for the likely demands of future warfare."¹⁰³ Within the air community, some analysts have recommended that the USAF widen its comparative advantage by adopting additional civilian-friendly concepts.¹⁰⁴ Collateral damage prevention became part of the airpower sales pitch. The process of institutional change, however, remains tentative and fragile. Future opportunities and challenges for civilian casualty mitigation are the subject of the next chapter.

Notes

1. The geographic COCOMs are responsible for directing use of the deployed operational force; the services prepare forces for use by the COCOMs. The services, as stewards of their "institutional" force, are responsible for training and equipping their respective members. The Special Operations Command uniquely merges institutional responsibilities for preparing forces with the operational responsibilities of the global counterterrorism mission.

2. During the 1990s, ground forces faced a different adaptation challenge related to civilians on the battlefield. US infantry during that decade repeatedly were deployed to peace operations, which are doctrinally distinct from conventional combat operations. In peace operations, the primary challenge for the US Army and Marine Corps was learning to work effectively with local villagers, representatives of nongovernmental or international organizations, and US government civilians during reconstruction and

development efforts. This was far removed from the USAF's adaptation regarding reducing civilian casualties while bombing.

3. Williamson Murray, "Not Enough Collateral Damage: Moral Ambiguities in the Gulf War," in *Civilians in the Path of War*, ed. Mark Grimsley and Clifford J. Rogers (Lincoln: University of Nebraska Press, 2002), 251.

4. Lt Gen David Deptula, USAF, retired, interview with the author, Washington, DC, 21 December 2009.

5. William M. Tart, "No Fly Zones: Costs, Benefits, and Conditions" (MA thesis, School of Advanced Airpower Studies, Air University, June 2001).

6. Iraq sought to induce the coalition to cause collateral damage by placing Iraqi anti-aircraft batteries near civilian and protected sites. US and other coalition pilots operated under strict rules of engagement designed to avoid escalation and civilian harm. Alfred B. Prados and Kenneth Katzman, *Iraq-U.S. Confrontation* (Washington, DC: Congressional Research Service, 20 February 2002), 5.

7. Benjamin S. Lambeth, *The Transformation of American Airpower* (Ithaca, NY: Cornell University Press, 2000), 313.

8. Rebecca Grant, "True Blue: Behind the Kosovo Numbers Game," *Air Force Magazine* 83, no. 8 (August 2000), 74-78.

9. Thomas Keaney, "Collateral Damage in the Gulf War: Experience and Lessons" (working paper, NSHR Proceedings, Harvard Kennedy School of Government, June 2002). David Deptula is a prime example, moving from serving as a planner in Desert Storm to being integrally involved in almost all subsequent major air operations and then returning to the institutional forces as the head of intelligence, surveillance, and reconnaissance.

10. See the description of doctrine and General Short's view of airpower in Paul C. Strickland, "Aerospace-Power Doctrine Decisive or Coercive?," *Aerospace Power Journal* (Fall 2000), <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj00/fal00/strickland.htm>. These views are reminiscent of the concerns about gradualism and constraints on airpower in Vietnam.

11. "Ralston Sees Potential for More Wars of Gradual Escalation," *Inside the Pentagon*, 16 September 1999, 1.

12. Michael Short, "Operation Allied Force from the Perspective of the NATO Air Commander," in *Legal and Ethical Lessons of NATO's Kosovo Campaign*, International Law Studies 78, ed. Andru E. Wall (Newport, RI: Naval War College, 2002), 24.

13. After the Kosovo campaign, British Air Vice Marshal Tony Mason remarked that he had not "spent the past 25 years trying to persuade unbelievers of the efficacy of air power only to finish up whining because political circumstances made operations difficult." Quoted in Benjamin Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND, 2001), 238.

14. "Washington Outlook," *Aviation Week and Space Technology*, 23 August 1999, 27. Quoted in Lambeth, *NATO's Air War for Kosovo*, 237.

15. Lambeth, *Transformation of American Airpower*, 229.

16. Col Brian McDonald, USAF, briefing, RAND, Santa Monica, CA, 14 December 1999.

17. Donald B. Rice, Secretary of the Air Force, *Global Reach—Global Power: The Evolving Air Force Contribution to National Security* (Arlington, VA: Aerospace

Education Foundation, December 1992), <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA326700&Location=U2&doc=GetTRDoc.pdf>.

18. Sheila E. Widnall, secretary of the Air Force, “The Air Force in the New World Order” (speech, Air Force Association Air Warfare Symposium, Orlando, FL, 16 February 1996), <http://www.afa.org/aef%5Cpub%5Ccol1.asp>; and Merrill McPeak, former Chief of Staff of the Air Force, “The Art of War,” *PBS Online NewsHour*, 16 June 1999, http://www.pbs.org/newshour/bb/europe/jan-june99/lessons_6-16.html.

19. Ronald R. Fogleman, “Air Power and the American Way of War” (speech, Air Force Association Air Warfare Symposium, Orlando, FL, 15 February 1996).

20. See, for example, James N. Mattis “USJFCOM Commander’s Guidance for Effects-based Operations,” *Parameters* 38 (Autumn 2008): 18–25.

21. Robyn S. Read, *Transformation: Effects-based Planning and Operations*, CADRE MDA Quick-Look 2003-07 (Maxwell AFB, AL: College of Aerospace Doctrine, Research and Education, and Airpower Research Institute, 2003).

22. For effects on civilians, including estimates of civilian casualties, are included, see, for example, *Summary Report of the United States Strategic Bombing Survey (European War)* (Maxwell AFB, AL: Air University Press, 30 September 1945), 14–15.

23. NSHR Proceedings.

24. During the Vietnam War, many derided counting the number of enemy killed as a false metric of success and one that fueled counterproductive operational practices (such as the killing of civilians). The military conveniently resolved to avoid all such metrics. As late as 2002, USCENTCOM commander Gen Tommy Franks famously said, “You know we don’t do body counts.” Quoted in Epstein, “Success in Afghan War Hard to Gauge,” *San Francisco Chronicle*, 23 March 2002. In a dramatic departure from past US practices, the US-led coalition in Iraq began systematically collecting data on civilian deaths. See, for example, Sabrina Tavernise, “U.S. Quietly Issues Estimate of Iraqi Civilian Casualties,” *New York Times*, 30 October 2005, <http://www.nytimes.com/2005/10/30/international/middleeast/30civilians.html>. The US-led coalition in Afghanistan began to do so several years later.

25. Lynn Eden, *Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation* (Ithaca, NY: Cornell University Press, 2004), 54–55.

26. Arguing that civilian harm was difficult to predict, the nuclear weapons community focused only on measuring the effect (initial blast) that better fit existing USAF measurement processes. *Ibid.*, 7.

27. Theo Farrell, “World Culture and Military Power,” *Security Studies* 14, no. 3 (July–September 2005), 484. International sanctions exacerbated the effect of the physical destruction. See, for example, Thomas E. Griffith, Jr., *Strategic Attack of National Electrical Systems* (Maxwell Air Force Base, AL: Air University Press, October 1994).

28. Deptula, interview.

29. *Ibid.*

30. For Kosovo targeting, see Government Accounting Office (GAO), *Kosovo Air Operations: Need to Maintain Alliance Cohesion Resulted in Doctrinal Departures*, GAO-01-784 (Washington, DC: GAO, 27 July 2001), 8 n. 9. For Iraq thresholds, see Bradley Graham, “U.S. Moved Early for Air Supremacy,” *Washington Post*, 20 July 2003, A26.

31. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3160.01, *No-Strike and the Collateral Damage Estimation Methodology*, 19 February 2009), D-A-30.

32. NSHR proceedings.

33. See, for example, Tony Montgomery, “Legal Advisors and Time-Sensitive Targets,” in *Legal and Ethic Lessons of NATO’s Kosovo Campaign*, International Law Studies 78, ed. Andru E. Wall (Newport, RI: Naval War College, 2002), 194.

34. “Collateral damage estimation has evolved to a sophisticated state.” Maj Gen Gordon C. Nash, USMC, commander Joint Warfighting Center (JWFC), in preface to JWFC Doctrine Pamphlet 2, *Doctrinal Implications of Low Collateral Damage Capabilities*, 27 January 2003.

35. The reason for the overprediction model appeared to be largely a function of the legacy hardware-system requirements. Anonymous modeler, interview with the author, Dahlgren, VA, 1 March 2010.

36. Empirical testing is particularly important given the model’s reliance on accurate population density figures. As one Army judge advocate general officer admitted, it is not feasible to perform a proportionality analysis if one does not know the potential for civilian harm. NSHR Proceedings. More generally, see Sarah Sewall, “An Empty Pledge to Civilians?” *New York Times*, 21 March 2003.

37. US officials have evoked the Vietnam-era practice of treating the numbers of enemy killed as a metric of success. The practice encouraged military tactics that harmed civilians. It is illogical to suggest the Vietnam practice as a rationale for not measuring civilian harm. Epstein, “Success in Afghan War Hard to Gauge.”

38. In fact, the military often dismissed independent civilian casualty estimates. NSHR proceedings.

39. See, for example, Clifford Tompkins, “Kinetic Airpower and Civilian Casualties” (PowerPoint presentation, HAF A9A, Rosslyn, VA, June 2009).

40. CJCSI 3160.01, D-1. For further information on the sensitive target approval and review process into which CDE feeds, see CJCSI 3122.06, *Sensitive Target Approval and Review (STAR) Process*, 12 December 2007.

41. CJCSI 3160.01, D-A-30.

42. Dunlap’s use of the metaphor *kabuki*—a form Japanese theater—means that the CDET numbers are an artistic reflection, not a true representation, of facts. Maj Gen Charles Dunlap, USAF, retired, interview with the author, Washington, DC, 4 December 2009.

43. Ibid.

44. CJCSI 3160.01, D-1.

45. Ibid.

46. Joint Publication (JP) 3-60, *Joint Targeting*, 13 April, 2007. Appendix G, Collateral Damage Estimation, G1.

47. “Whether or not destroying a particular target is going to achieve the stated military or political objective is not part of the tier system.” Montgomery, “Legal Advisors and Time-Sensitive Targets,” 194.

48. Ibid., 193.

49. Anonymous modeler, interview.

50. Ibid.

51. Bradley Graham, “‘Bugsplat’ Computer Program Aims to Limit Civilian Deaths at Targets,” *Washington Post*, 22 February 2003.

52. Anonymous modeler, interview.

53. Doctrine specifies the possibility that JWAC would still be tasked to do CDE. In addition, necessity became the mother of “Field CDE,” which is typically used “when there is a time-constrained opportunity to engage a fleeting target. Field CDE differs from Formal CDE, which is conducted by certified/qualified CDE analysts. . . . Field CDE is a degraded mode of CDE, and creates the opportunity for increased risk.” CJCSI 3160.01A, *No-Strike and the Collateral Damage Estimation Methodology*, 12 October 2012, D-A-36.

54. Anonymous modeler, interview.

55. CJCSI 3160.01. Produced by the intelligence arm of the Joint Staff, the level of detail for standard, joint CDE is nothing short of astonishing. The list of CD-related acronyms expands to include CDM (CDE methodology) and CDA (the final CD assessment).

56. The process continues to evolve, with updated guidance and methods. Air Force Doctrine Document (AFDD 3-60), *Targeting*, 8 June 2006, was updated 28 July 2011. CJCSI 3160.01A was also update 12 October 2012.

57. Sarah Sewall and Larry Lewis, *Reducing and Mitigating Civilian Casualties: Afghanistan and Beyond, Joint Civilian Casualty Study Final Report* (Kabul, Afghanistan: International Security Assistance Force, 31 August 2010), http://www.dod.mil/pubs/foi/operation_and_plans/GlobalWarOnTerrorism/Miscellaneous/12-F-0460_doc_01_Reducing_and_Mitigating_Civilian_Casualties_Afghanistan_and_Beyond.pdf.

58. Anonymous modeler, interview.

59. I discuss the issue of institutional ownership for civilian casualty prevention and mitigation in chapter 6.

60. John T. Correll, “The Emergence of Smart Bombs,” *Air Force Magazine* 93, no. 3 (March 2010): 60–64.

61. Reflecting the airpower community’s consensus, an unofficial history argued that laser-guided bombs “largely swung the outcome of the 1991 Gulf War” by shutting down Iraq’s air defenses, keeping the Iraqi air force out of the fight, and destroying Iraqi tanks and other fielded equipment. Lambeth, *Transformation of American Airpower*, 160.

62. His reference is to the WWII practice of wrapping bombs in bands to keep their fins from deploying. George Lee Butler, “Disestablishing SAC,” *Air Power History* (Fall 1993), 8.

63. Widnall, “The Air Force in the New World Order.”

64. The Navy was also making huge strides in this arena.

65. “If you want to get somebody’s attention at \$1.5 million a pop, you can shoot those things and get their attention, but if you want to conduct an air campaign, you’re going to bankrupt the country quickly by doing that.” Quoted in Lambeth, *Transformation of American Airpower*, 162.

66. *Ibid.*, 161.

67. Lt Col Daniel Ourada, USAF, retired, interview with the author, Washington, DC, 25 January 2010.

68. Correll, “The Emergence of Smart Bombs.”

69. Lambeth, *Transformation of American Airpower*, 230.

70. In 2003 joint publications began discussing low-collateral damage capabilities (LCDC), a new term encompassing nonlethal weapons. The term has not come into widespread use. JWFC Doctrine Pam 2, preface.

71. Ourada, interview; and John Pike, "Small Diameter Bomb / Small Smart Bomb," *GlobalSecurity.org*, 7 July 2011, <http://www.globalsecurity.org/military/systems/munitions/sdb.htm>.

72. During the Kosovo air campaign, French president Jacques Chirac had opposed bombing Serbia's electrical power grid. "U.S. and French military officers searched for more palatable alternatives and finally came up with the idea of using the still-secret CBU-94 cluster munition, which could shut down Belgrade's power source for at least a few hours by dispensing carbon-graphite threads on a grid to short it out." Lambeth, *Transformation of American Airpower*, 188. The USAF subsequently mainstreamed the weapon because of its success, and used it in OIF.

73. Deptula, interview.

74. Col Gary Crowder, USAF, retired, interview with the author, Southwest Asia, 11 June 2008; and Ourada, interview.

75. However, the inert GBU-12 bombs ricocheted and skipped far from their intended target in Operation Northern Watch. Thomas R. Searle, "Making Airpower Effective against Guerrillas," *Air and Space Journal* 18, no. 3 (Fall 2004), 19.

76. Lieven Dewitte, "Crash Program at Eglin Produced Non-explosive Weapon Used in Iraq," *General F-16 News*, 12 May 2003, http://www.f-16.net/news_article137.html.

77. Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq* (New York: HRW, 2003), 21–27, 46–48, 112, <http://www.hrw.org/reports/2003/usa1203/usa1203.pdf>.

78. Deptula, interview.

79. Col Tom Ehrhard, USAF, retired, interview with the author, Washington, DC, 25 January 2011.

80. Pike, "Small Diameter Bomb / Small Smart Bomb."

81. Ernie Haendschke, "Adding Less-Lethal Arrows to the Quiver for Counter-insurgency Air Operations," *Air & Space Power Journal* 22, no. 2 (Summer 2008): 33–43, <http://www.au.af.mil/au/afri/aspj/airchronicles/apj/apj08/sum08/haendschke.html>.

82. Ibid.

83. Pike, "Small Diameter Bomb / Small Smart Bomb."

84. See, for example, W. R. Johnson "All Thrust and No Vector? Classical Air Power Theory and Small Wars," in *No Clear Flight Plan: Counterinsurgency and Aerospace Power*, Silver Dart Canadian Aerospace Studies, vol. 4, ed. James Fergusson and William March (Winnipeg, Canada: Centre for Defence and Security Studies, University of Manitoba, 2008).

85. Haendschke, "Adding Less-Lethal Arrows."

86. C. J. Chivers, "A Changed Way of War in Afghanistan's Skies," *New York Times*, 15 January 2012, quoting a Navy pilot on his operations in Afghanistan.

87. Ibid.

88. Marc V. Schanz, "Focused Lethality," *Air Force Magazine* 91, no. 12 (December 2008): 36–39.

89. Ehrhard, interview.

90. "Shaping Adaptive Innovation for the Warfighter: The Air Armament Center Functions as the Linchpin; An Interview with Randy Brown, Norma Taylor, and

Wally Messmore,” *Second Line of Defense* (web site), 19 January 2011, <http://www.sldinfo.com/shaping-adaptive-innovation-for-the-warfighter-the-air-armament-center-functions-as-the-linchpin/>.

91. Although some within the USAF bureaucracy derided these innovations as “Not smart bombs, but nice bombs.” Ehrhard, interview. I further discuss the resistance to these innovations in chapter 6.

92. Brig Gen Jerry P. Martinez, USAF, testimony in House, *Institutionalizing Irregular Warfare Capabilities: Hearings before the Subcommittee on Emerging Threats and Capabilities, House Armed Services Committee*, 112th Cong., 1st sess., 3 November 2011, <http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg71528/pdf/CHRG-112hhrg71528.pdf>.

93. Ibid.

94. At the Air Armament Summit conferences early in the 2000s, two experienced USAF officers made the case for the USAF to develop lower-collateral damage weapons. They gained little traction for their proposals. Ehrhard, interview.

95. “Attack of the Drones,” *Newsweek*, 19 September 2009, <http://www.newsweek.com/2009/09/18/attack-of-the-drones.html>.

96. Ehrhard, interview.

97. Ibid.

98. Ibid.

99. Ibid.

100. The report called for creation of strategic effects integration capabilities and changes in military professional development. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, *Report of the Defense Science Board Task Force on Discriminate Use of Force* (Washington, DC: Department of Defense, 2003), 2.

101. Ibid.

102. Tompkins, “Kinetic Airpower and Civilian Casualties,” slide 13.

103. Lambeth, *Transformation of American Airpower*, 317.

104. Read recommends nonlethal combat doctrine, including show of force, presence, and weapons that allow ground commanders to “dial-an-effect.” Read, *Transformation*.

Chapter 6

The Future of Civilian Casualty Prevention

The US military's adaptation to civilian casualty (CIVCAS) prevention varied by service but was driven largely by operational pressures to reduce harm to noncombatants. Airpower hit these pressures during the 1990s, while land forces confronted them the following decade during counterinsurgency (COIN) operations in Iraq and Afghanistan. Adaptation occurred in the field, but institutional, lasting change was uneven. In 2006 the Army and Marine Corps created new doctrine (FM 3-24, *Counterinsurgency*) that placed civilian protection at the heart of military operations. The two services then sought to apply this doctrine in the field. But, while the Army took further steps to institutionalize civilian casualty mitigation, overall institutional progress has been halting.

Terminology indicates a changed military awareness of civilian casualties. Noncombatant deaths were once considered, and spoken about, as a subset of collateral damage. However, by the 1990s, that term seemed out of step with international sensitivities, and US officials began referring more frequently to civilian casualties than to collateral damage. By the end of the 2000s, the military had adopted a new acronym for its internal use: CIVCAS.

Some military voices began pushing the Department of Defense (DOD) to do more to prevent noncombatant deaths. Air Force major Patrick Shaw's 1997 thesis disaggregated potential causes of civilian deaths and offered related military mitigation strategies.¹ A Joint Warfighting Center leader in 2003 questioned whether joint doctrine needed to do more than discuss collateral damage only as a planning factor.²

However, the real driver of change was operational experience. After a decade of extended COIN operations in Iraq and Afghanistan, most service members understood that civilian casualties were both counterproductive and difficult to avoid when fighting against an irregular enemy. Guidance on the use of force, often in the form of tactical directives complementing rules of engagement (ROE), grew more complex—as commanders sought to prevent civilian harm. Instead of just focusing on targeting decisions, US forces began thinking about a broader range of prevention and mitigation activity, and they

began counting foreign civilian deaths. By 2009 US military leaders in Afghanistan began using the term civilian casualty to encapsulate the general civilian protection challenge, and the term migrated back into the services.

Even so, adaptation in the field remained stovepiped, ad hoc, and less effective than it could have been. Key lessons learned the hard way in Iraq never made it to operations in Afghanistan. As late as 2010, International Security Assistance Force (ISAF) leaders had difficulty tracking, let alone integrating, disparate ISAF efforts to prevent and mitigate civilian harm. Operational leaders at different levels sought to address particular aspects of preventing civilian harm, but they lacked a common conceptual framework and a comprehensive understanding of the challenge.³

Nor had the services—particularly the Army and Marine Corps—back in the United States kept pace with the civilian casualty mitigation demands of the field. These services lacked specific tactics, techniques, and procedures (TTP), and they did not possess codified lessons, best practices, or guidance from other services that specifically focused on civilian casualties.

Because the services were slow in adapting, forces had to learn on the fly. For example, when Gen David Petraeus, US Army, in spring 2008 directed an offensive against insurgents in Baghdad's densely populated and politically charged Sadr City, US air and ground elements had to create new tactics and a concept of operations to enable precision engagements to halt indirect fire with minimal civilian casualties.⁴ As late as 2010, ISAF commanders were frustrated by the enduring disconnect in priorities accorded civilian casualties by the operational force and the Army and Marine Corps.⁵ These commanders described newly arriving ground forces as lacking dedicated TTP or systematic training on how to minimize civilian harm. They reported that forces did not necessarily bring appropriate equipment for the Afghan theater.⁶

The Joint Civilian Casualty Study (JCCS) team sought to address many of these gaps. It began by developing a model to help the military conceptualize the problem. The civilian casualty lifecycle model (fig. 1) parsed out distinct elements of prevention and mitigation and illustrated the interrelationship among the efforts of the institutional (services) and operational (deployed) force. The model was designed to help leaders better direct, assess, and coordinate civilian casualty prevention.

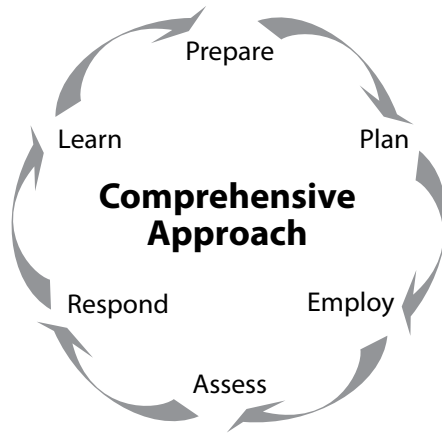


Figure 1. Lifecycle for reducing and mitigating civilian casualties. (Adapted from Sarah Sewall and Larry Lewis, *Reducing and Mitigating Civilian Casualties: Afghanistan and Beyond*, Joint Civilian Casualty Study Final Report [Kabul, Afghanistan: International Security Assistance Force, 31 August 2010], 2, http://www.dod.mil/pubs/foi/operation_and_plans/GlobalWarOnTerrorism/Miscellaneous/12-F-0460_doc_01_Reducing_and_Mitigating_Civilian_Casualties_Afghanistan_and_Beyond.pdf.)

- **Prepare:** Doctrine, professional military education (PME), routine and predeployment training and equipping, mission rehearsal exercises, and in-theater training and adaptation
- **Plan:** Mission planning, rehearsals, intelligence, information, and shaping the environment; also deliberate crisis action planning by the institutional force
- **Employ:** Actions on contact, escalation and deescalation of force, tactical patience, and application of ROE and tactical directives
- **Assess:** Holding the ground, battle handover, battle damage assessments, data collection, and gaming simulations and exercises
- **Respond:** Medical response, key leader engagement, media engagement, solatia payments, and other information activities
- **Learn:** Reporting, data management, data analysis, after action reviews, investigations, and capturing and disseminating lessons learned (both operational and institutional)

While the study's framework was not revolutionary, it filled a critical void. It captured the complexity and multidimensional nature of the problem, drawn from field analysis in Afghanistan. It highlighted the responsibilities of the institutional force—the services—in tackling the challenge, and it provided a template for designing and monitoring those efforts. Using this template, even the US Air Force (USAF), pioneer in this arena, could identify those phases of response that require more attention.⁷

The JCCS study also offered more than 70 operational and institutional recommendations, based on issues identified in Afghanistan. Overall, the services' civilian casualty prevention efforts have remained principally in the phases of preparation, planning, and employment of force. Yet even in these phases, work remains unfinished. For example, most civilian casualty-related training is considered part of the COIN predeployment cycle only rather than an element that could be incorporated into other types of operational training. Some of the JCCS recommendations would have benefits in areas beyond civilian casualty mitigation. For example, the paucity of joint practice and preparation for close air support, particularly that involving discrimination between combatants and noncombatants, impedes the effectiveness of US airpower.⁸ In other words, there is more work to be done even in those areas in which the United States already has made the most progress in mitigating civilian harm.

The fundamental issue facing the US military, particularly the Army and Marine Corps, remains the need for *institutional* change—internalization within the services that civilian casualty reduction is not something that automatically happens but rather requires dedicated attention: technology, tactics, training, and so forth. The present decade began with some encouraging efforts to elevate civilian casualties within the joint force and the Army, as described below, but these do not appear to have been sustained. Real progress will require attention in several key areas: data, learning, analysis, expertise, institutional responsibility, and evaluating US success. These challenges are discussed in turn.

Operational Data

One of the most important indicators of an institution's priorities is what it measures. The military came late to measuring civilian harm, and it is unclear whether the military will extend this practice

beyond COIN operations. In the 1990s, the DOD developed models for predicting civilian casualties from air strikes but did not—and still does not—test those models against the actual results of strikes.

The armed forces began systematically recording civilian deaths only in 2005 in Iraq and even later in Afghanistan. These efforts had weaknesses related to the information that was (and was not) collected. The wide variability of formats for collecting data, confusion of relevant terminology, and uneven collation processes combined to undermine the utility of the data.⁹ Additionally, there was no entity responsible for interpreting the civilian casualty data. The Civilian Casualty Tracking Cell (CCTC) in Afghanistan collected numbers, but the cell itself did limited analytical work. Because the CCTC did reach back for support from the United States, no other entity was pushed to assume responsibility for civilian casualty expertise.

Moreover, the type of data collected was not ideal for operational learning. Tracking casualties captured failure, not success. Since instances of avoiding civilian casualties were not typically recorded, best practices largely remained matters of personal experience. Many service members were left to make their own tragic mistakes instead of learning from those that preceded them.¹⁰

While imperfect, the data on civilian deaths helped commanders understand overall battlefield trends, particularly the levels of civilian harm over time, by region, and in comparing the casualties caused by US forces to those caused by enemy fighters. The data also, in the case of Iraq, were critical for explaining operational success to external audiences.¹¹

In future combined operations, a standardized joint data-collection system should be developed and codified, data collection should be designed to better support learning, and data should be housed in organizations responsible for analysis and learning. For air-only operations, alternative data collection methods should be developed so that the United States can learn more about the effects of its kinetic operations.

Lessons

Until 2011, the Joint Lessons Learned Information System (JLLIS) had no formal civilian casualty category. The index of subjects covered through the JLLIS was extensive, and by examining other JLLIS topics, such as fire control, civilian casualty lessons could be gleaned.

However, a new captain searching JLLIS to learn how best to lead or train a company to avoid civilian casualties would have struggled to piece together that knowledge.

The fragmentation of civilian casualty learning stood in stark contrast to friendly fire, which had been identified as an independent issue within the database, although its lessons, too, must be drawn from a variety of other JLLIS topics, such as fire control or communications. The designation of an independent category for friendly fire has helped ensure ongoing operational analysis and institutional remedies for friendly fire incidents.

The same can be done for civilian casualties. In late 2011, the Joint Staff J7 took an important first step by creating a civilian casualty “community of practice” within the JLLIS system, consolidating the civilian casualty studies conducted since 2009.¹² Whether civilian casualty is firmly established as an ongoing topic of institutional concern, rather than a historical artifact, hinges upon whether future operational analysis focuses on civilian casualty learning and adaptation.

Analysis

To better understand civilian harm and military operations, the military must build a cadre of subject matter experts. Yet civilian casualty expertise is limited—in part because the topic is rarely studied. This vicious cycle underscores the importance of prioritizing civilian casualty as an ongoing concern of the institutional force, regardless of whether the topic is dominating headlines at the moment.

In 2009, after almost a decade of combat in Afghanistan and Iraq, Jacqueline Henningsen and Cliff Tompkins initiated the military’s first official analysis of the relationship of airpower to civilian casualties.¹³ The USAF’s A9 division correlated civilian casualty data available from Human Rights Watch with USAF mission reports to conclude that only roughly 1 percent of air strikes in Afghanistan had resulted in civilian harm.¹⁴ The study revealed the relative infrequency of civilian casualty incidents from airpower. While A9 did not examine causality or operational issues related to reducing civilian harm, one member of its team later joined the first major civilian casualty study.

At approximately the same time, the chairman of the Joint Chiefs of Staff (CJCS), Adm Mike Mullen, directed the Joint Center for Operational Analysis (JCOA), then part of Joint Forces Command, to study the 4 May 2009 Farah air strike in Afghanistan. The strike had

killed a large number of civilians and had become a source of tension within the North Atlantic Treaty Organization and with the Afghan government. The case study examined various contributing factors and highlighted areas for potential improvement in using airpower in the future. It examined only one airpower incident, but two of the study's analysts went on to help lead other civilian casualty studies.¹⁵ Civilian casualty expertise began to develop.

The JCCS was the first comprehensive study of civilian harm in a US military operation.¹⁶ Although proposed and led by a civilian academic (this author), the study was sponsored by senior military officials and included JCOA and service representatives. From 2009 to 2010, the team researched ISAF and US operations across Afghanistan, ultimately providing an unprecedented primer on civilian casualties and over 70 operational and institutional recommendations. Among the more important findings were that Gen Stanley McChrystal's leadership and tactical directive had a significant impact on civilian casualties and that success in minimizing civilian harm did not compromise the fighting force or the mission.¹⁷

Led by JCCS coauthor Lawrence Lewis, JCOA went on to study how the DOD's learning process addressed civilian casualty issues and conducted several other operational civilian casualty studies in Afghanistan. It also produced a retrospective analysis of how civilian casualty lessons could be institutionalized.¹⁸ To this author's knowledge, however, the US military has not conducted analogous comprehensive reviews of civilian casualties in other theaters of war.¹⁹

Expertise

Developing and sustaining expertise remains a dilemma for the DOD. If an organization fails to develop its capacity to see a problem, it may not be able to see that problem. This is especially true if the organization largely dismisses external feedback (and the DOD often distrusts civilian casualty critiques from the press, nongovernmental organizations [NGO], and international organizations). Yet if the organization does not see the problem, it has no incentive to develop the requisite capacity to understand and address the issue. This may be a hole into which civilian casualty is now falling. Even after the USAF began adapting to civilian protection, civilian casualty has yet to become part of what Lynn Eden has called the "enmeshing of organizational goals and disciplinary knowledge."²⁰

Operational analysis of civilian casualties is complex, crossing domains of fires, discrimination and positive identification, foreign cultural awareness, operational law, tactics, behavioral science, and targeting processes. civilian casualty expertise takes time to develop, and the DOD is no closer today to having a dedicated cadre of experts than it was in 2010. In fact, there are almost certainly more people dedicated to studying civilian casualties *outside* of the US government than within it.²¹ For several decades, human rights NGOs, the United Nations, and other organizations have conducted battle-damage assessment missions and performed civilian casualty analysis. Individuals specializing in this work acquire important historical and operational insights, albeit from the civilian perspective and with information that is available in the public domain. International and NGOs are likely to increase their study of civilian casualties worldwide. These experts are likely to challenge military assumptions and access different sources of data. And, until the military develops its own civilian casualty expertise, civilian analysis of civilian harm is likely to set the terms of the debate.

Institutional Responsibility

Civilian casualties have long been considered an issue of morality. While chaplains help service members grapple with their personal qualms regarding the use of force, since Vietnam, lawyers have assumed increasing responsibility for assessing civilian harm. They advise commanders and train service members regarding when and how targets can be attacked lawfully. Lawyers write ROE and review campaign plans. Commanders (and in some cases, the national command authority) make the final decisions, but the lawyers consider civilian casualties as part of their legal assessment of proposed targeting choices.

However, as explained in chapter 3, an opinion about what is legally permissible is not equivalent to a judgment about whether the potential for civilian harm is reasonable, advisable, or preventable through alternative approaches. Nor does a legal judgment account for the political effects of civilian deaths on an ally, a local population, global opinion, or domestic support. In other words, lawyer approval remains necessary, but it may no longer be sufficient in modern war.

The sensitivity of civilian death is a primary reason why the United States created civilian casualty thresholds, known as the noncombatant

casualty cutoff value (NCV). These have been used in air campaigns since Kosovo. When a proposed strike triggers the NCV by predicting the threshold level of civilian casualties, the targeting decision is automatically pushed to higher political authorities—regardless of the presumed legality and the importance of the target.

In the military realm, neither lawyers nor chaplains have the institutional stature of members serving in the combat arms. Operators tend to be the most respected and influential part of the uniformed force, setting the unit tone and priorities. Yet even in 2009, some units in Afghanistan looked to lawyers or chaplains as the experts most responsible for understanding civilian casualties.²² This remains a cultural and organizational barrier to mainstreaming civilian casualty mitigation. The problem is not the involvement of lawyers or chaplains per se but rather the implication that operators are not fully responsible for the issue. As the JCCS study found, leadership is key to maintaining focus on reducing civilian casualties, especially in the face of morale challenges due to friendly force losses or curtailed freedom of action.²³ As such, operational commanders must *own* this issue directly in the field and, equally important, when they move to positions of leadership in the institutional force.

There is no enduring institutional or bureaucratic proponent or constituency for reducing civilian harm. As a result, there is no obvious destination for the lessons captured in reports posted on JLLIS. Even highly useful but seemingly routine work may be left undone. Who in the USAF, Navy, or Army is responsible for advocating and budgeting for new nonlethal capabilities? Who is responsible for the analysis and effort to correct false claims about civilian casualty concerns depriving American troops of crucial air support? Whose job is it to scrub the military's deliberate plans to ensure that civilian harm has been thoroughly considered, and how do they know *enough* has been done? Whose promotion is enhanced if the military fights effectively with fewer unintended deaths?

Although great progress has been made in enabling US forces to reduce civilian harm, that progress may not be sustained without institutional sponsorship. For example, much of the airpower technology that enabled civilian casualty reduction was developed for other reasons.²⁴ Who will ensure that civilian casualty innovation continues? Even where there is dedicated institutional support for civilian casualty mitigation capabilities, efforts may falter without high-level advocacy. At the moment, no one is accountable for determining

whether the United States is doing everything feasible to assess and advance civilian protection. Military personnel frequently say that *everyone* deals with civilian casualties—that it is “part of what we do.” Yet when everyone is nominally responsible, it is easy for each individual to avoid action. Moreover, when an issue is embedded across a thousand other issues—for example, fires; intelligence, surveillance, and reconnaissance; and training—it often receives inadequate attention.

The May 2009 civilian casualty incident in Farah, Afghanistan, pushed responsibility for institutional adaptation into the office of the CJCS. In December, Admiral Mullen established a Joint Staff civilian casualty working group of dual-hatted joint officers, meaning that they maintained their ongoing responsibilities. The group, which occasionally briefed the service operations deputies, aimed to ensure that the services implemented the appropriate civilian casualty prevention lessons from the Farah incident.²⁵ A year and a half later, the working group moved to the J-7 (the Joint Staff’s learning and training arm) with the goal of strengthening expertise and initiatives to reduce civilian casualties. However, the group disbanded in 2013.²⁶

Nearly simultaneously, the Army also took steps to institutionalize civilian casualty prevention. The commander of the Army’s Training and Doctrine Command, Gen Martin Dempsey, decided to assign formal responsibility for civilian casualty prevention. Dempsey directed that it be integrated within the Army’s most strategic center of excellence (COE), the Mission Command COE, where Brig Gen Charles Flynn pushed to create simulations, write new doctrine, and improve training regarding civilian casualties.²⁷

Flynn’s efforts ultimately yielded two publications that borrowed heavily from the JCCS and follow-on JCOA work in Afghanistan. In July 2011, the Army published Army Tactics, Techniques, and Procedures (ATTP) 3-37.31, *Civilian Casualty Mitigation*. The publication was not exclusively devoted to COIN; it discussed the relevance of civilian casualty mitigation across the operational spectrum. Using the JCCS civilian casualty lifecycle concept, the new publication spelled out the implications of each phase, providing an enduring official template for the Army to address civilian casualty mitigation.²⁸ In 2012 the Center for Army Lesson Learned, with significant support from several JCCS contributors, produced the *Afghanistan Civilian Casualty Prevention Handbook*. This document focuses primarily on preparing forces for COIN and, specifically, operations in Afghanistan. It includes numerous examples and cases to illustrate options

and lessons.²⁹ Through these two publications, the analysis from research studies was able to reach a wider military audience.

Earlier doctrine had treated civilian harm as a question of law or a parenthetical planning consideration, except in COIN. Now, Soldiers have publications that could help them understand and prepare to address multiple aspects of civilian casualty prevention. The two publications are therefore significant for the Army, although their practical impact on doctrine, organization, training, materiel, and leadership remains unclear.

Evaluating Success

Even if each service and the Joint Staff have assigned clear responsibility for improving capabilities to minimize civilian casualties in future conflicts, how would an entity know whether it is exerting enough, or the right, effort to address civilian casualties? Metrics for performance in the field—actual civilian casualties—are not the same metrics that are needed to guide institutional efforts.

The services can always do “more,” but in the absence of expertise and standards, it is challenging to assess change and impact.³⁰ For example, the civilian casualty working group lacked the analytic capability to evaluate whether reported implementation of the Farah study recommendations was in fact responsive or effective. Only by building and retaining analytical expertise can the DOD effectively identify the possibilities, costs, and tradeoffs of preventing civilian harm. JCOA, as the generator of multiple civilian casualty studies, is the obvious home of expertise, yet its most experienced analyst has returned to the Center for Naval Analysis. Apart from A9, the services themselves, as well as the Office of the Secretary of Defense, do not appear to have developed dedicated civilian casualty expertise.

One way to build or strengthen this expertise is to partner with outside groups that study civilian casualties. Enormous gaps in perceptions and understanding exist between the military and humanitarian communities and between the military perspective and that of the broader public. The bottom line is that while the military may not have fully exploited opportunities to minimize civilian harm, outsiders do not fully appreciate the difficulties and tradeoffs inherent in improving civilian protection. Nonetheless, the two communities share the goal of minimizing civilian harm and can learn from one another.

Focusing on the *how*—what the United States can do to protect civilians—opens up an evaluation of the costs and tradeoffs associated with different options and forges common cause toward shared goals.³¹ Many civilian casualty mitigation options will be relatively easy to adopt. For example, such options will have low financial costs and impose few additional risks or frictions. To date, the USAF story of adaptation illustrates such possibilities. Other options—from new capabilities to alternative TTP—may impose significant risks and costs to Airmen, Soldiers, Sailors, and Marines. The military and humanitarian communities may disagree about which risks are worth taking and why, but humanitarians can provide a constructive external pressure, in effect representing the otherwise invisible foreign civilian.

Humanitarian voices are needed to push the military to consider the outer limits of adaptation. Because military actors traditionally prioritize mission and forces, they will always benefit from external prodding—from civilian leadership, from outside advocates, from other countries, and from international norms and law—to continue testing the assumption that the military is doing everything possible to prevent civilian harm in war.

Conclusion

While limited humanitarian air wars prompted USAF adaptation in the 1990s, it was the operational impact of civilian casualties during COIN operations that pushed civilian casualties into the joint institutional consciousness by the end of the 2000s. Yet the character of US military operations has now changed. The Obama administration focused on extricating US forces from large-scale COIN operations while retaining a robust global counterterrorism campaign using remotely piloted vehicles (RPV). This is exemplified by the fact that in 2014 the United States rebuilt an international coalition to destroy the Islamic State in Iraq and the Levant (ISIL)—largely relying on airpower.

The future of civilian casualty prevention efforts may be linked to broader questions about the US military's focus in the coming decades. What kinds of wars will the United States prepare to fight?

How much does avoiding civilian harm help or hinder those operations? The Obama administration's "pivot to Asia" emphasizes air and naval power as well as cyber capabilities to preclude a competitor from destabilizing or dominating the region. Reorienting military capabilities toward large-scale conventional conflict tempts a return to earlier paradigms of war. In this environment, ground forces in particular risk misperceiving civilian harm as purely a function of COIN, rather than, as the USAF has learned, an enduring modern phenomenon.

A major conventional conflict—the standard unit of US military planning—might suggest reduced sensitivity to civilian casualties, just as global war in the 1940s exerted enormous pressure on American leaders and prompted use of the atomic bomb. On the other hand, how would South Koreans judge US military support that had failed to do everything possible to mitigate harm to Korean citizens in the name of defending them? Meanwhile, civilian casualties remain a controversial aspect of counterterrorism operations using RPVs and have begun to emerge as a vulnerability in the counter-ISIL air campaign.³² Minimizing civilian harm will remain important across the operational spectrum for a variety of reasons, such as ensuring coalition support, maintaining operational freedom, and demonstrating US moral and political character.³³

From the contemporary perspective, a pragmatic military self-interest in minimizing civilian harm seems obvious, but this has not always been the case. For much of the twentieth century, the United States convinced itself that as long as its intentions were good—it did not seek to harm noncombatants—inadvertent harm to civilians was both unavoidable and legally justified. It was war, after all, and civilian deaths were simply collateral damage.

Today's military attitudes have changed, but there is nothing inexorable about the military's institutional prioritization of civilian casualty mitigation. During the Vietnam War, the secondary effects of civilian harm undermined the mission, and while field operations sought to adapt to this reality, the services resisted translating this lesson into lasting institutional change.³⁴ If history is any guide, then, the services risk downplaying the operational costs of civilian harm as they prepare for the kind of future wars they would prefer to fight. Success in civilian casualty mitigation efforts requires constant effort.

Notes

1. Patrick M. Shaw, “Collateral Damage and the United States Air Force” (MA thesis, School of Advanced Airpower Studies, Air University, Maxwell Air Force Base, AL, June 1997).

2. US Joint Force Command (JWFC), Doctrine Pamphlet 2, *Doctrinal Implications of Low Collateral Damage Capabilities*, 27 January 2003, 1.

3. Sarah Sewall and Larry Lewis, *Reducing and Mitigating Civilian Casualties: Afghanistan and Beyond, Joint Civilian Casualty Study Final Report* (Kabul, Afghanistan: International Security Assistance Force, 31 August 2010), ii, http://www.dod.mil/pubs/foi/operation_and_plans/GlobalWarOnTerrorism/Miscellaneous/12-F-0460_doc_01_Reducing_and_Mitigating_Civilian_Casualties_Afghanistan_and_Beyond.pdf.

4. Larry Lewis, interview with the author, Suffolk, VA, 12 July 2009.

5. The JCCS study, therefore, concluded that there was “a general lack of synchronization between forces in-theater and CONUS institutions regarding the issue of civilian casualties.” Sewall and Lewis, *Joint Civilian Casualty Study*, 12.

6. *Ibid.*, ii.

7. Shortfalls exist principally in the USAF’s assessment and learning areas; in the “response” phase, the USAF has minimal responsibilities.

8. Sewall and Lewis, *Reducing and Mitigating Civilian Casualties*, 141. Common mission-essential task lists should be developed for joint training exercises and doctrine, and TTPs should be harmonized so that language and practices are uniform across services.

9. Sewall and Lewis, *Reducing and Mitigating Civilian Casualties*, 11.

10. See, for example, a Marine’s critique of the failure to capture and train lessons to mitigate civilian casualties at checkpoints. Nathaniel Fick, “Manning the Barricades,” *New York Times*, 13 March 2005, <http://www.nytimes.com/2005/03/13/opinion/13fick.html>.

11. Gen David H. Petraeus, commander, Multi-National Force–Iraq, congressional testimony, in House, *Report to Congress on the Situation in Iraq, Joint Hearing before the House Committee on Foreign Affairs and the House Committee on Armed Services*, 110th Cong., 1st sess., 10 September 2007, <http://www.defense.gov/pubs/pdfs/petraeus-testimony20070910.pdf>.

12. This was the result of the CJCS’s creation of a high-level CIVCAS working group, described below. This underscores the need for institutional responsibility in order to spur further changes within the military system.

13. As noted in chapter 1.

14. Clifford Tompkins, “Kinetic Airpower and Civilian Casualties” (PowerPoint presentation, USAF HAF A9A, Rosslyn, VA, June 2009).

15. Joint Center for Operational Analysis (JCOA), DOD, “Civilian Casualties in Afghanistan” (Farah Quick Look brief, Suffolk, VA, July 2009), <https://info.publicintellgence.net/USMC-CivilianCasualtiesMitigation.pdf>.

16. Sewall and Lewis, *Reducing and Mitigating Civilian Casualties*.

17. *Ibid.*, 6, 31.

18. JCOA, *Reducing and Mitigating Civilian Casualties: Enduring Lessons* (Suffolk, VA: JCOA, 12 August 2013), http://www.cna.org/sites/default/files/research/CIVCAS_Enduring_Lessons.pdf.

19. CIVCAS analysis of NATO's Operation Unified Protector in Libya, for example, could have yielded significant lessons for US forces. During peacetime, CIVCAS issues should be addressed through war games, tabletop exercises, and simulations to draw lessons; test operational concepts, technologies, and TTP; and evaluate any potential tradeoffs between risk to forces and operational effectiveness.

20. Lynn Eden, *Whole World on Fire: Organizations, Knowledge, and Nuclear Weapons Devastation* (Ithaca, NY: Cornell University Press, 2004), 6.

21. US civilian analysts and organizations prominently involved in this work include William Arkin, who first began conducting CIVCAS analysis during Operation Desert Storm; Human Rights Watch researchers (including Marc Garlasco and Bonnie Docherty), who conduct field surveys in conflicts worldwide; Carl Conetta at the Project on Defense Alternatives; the Iraq Body Count; and the Coalition for Innocent Victims of Conflict. The UN now routinely conducts detailed CIVCAS analysis. The number of foreign organizations monitoring CIVCAS by combatants in armed conflict continues to increase. See, for example, Alessandria Masi, "In Syria's Civilian Death Toll, The Islamic State Group, or ISIS, Is a Far Smaller Threat Than Bashar Assad," *International Business Times*, 7 January 2015, <http://www.ibtimes.com/syrias-civilian-death-toll-islamic-state-group-or-isis-far-smaller-threat-bashar-1775238>.

22. Author's experience interviewing units in Afghanistan, 2009–2010.

23. Sewall and Lewis, *Reducing and Mitigating Civilian Casualties*, 38.

24. A9 summarized CIVCAS progress as a byproduct of the economy of force. Tompkins, "Kinetic Air Power and Civilian Casualties," slide 6.

25. Nathan Hodge, "U.S. Finishing Afghan Casualty Review," *Wall Street Journal*, 26 January 2011, <http://www.wsj.com/articles/SB10001424052748704013604576104321480503788>. The Farah study examined a single air incident, not activities within a theater of operations over time (this was the JCCS study).

26. Its last act was transferring the JCOA Enduring Lessons report to Joint Lessons Learned Information System. Larry Lewis, e-mail to the author, 6 January 2015.

27. Mission Command Center of Excellence, command briefing, 5 July 2011, slide 6.

28. Army Tactics, Techniques, and Procedures (ATTP) 3-37.31, *Civilian Casualty Mitigation*, July 2012, http://armypubs.army.mil/doctrine/DR_pubs/dr_a/pdf/attp3_37x31.pdf.

29. Center for Army Lessons Learned, CALL Handbook No. 12-16, *Afghanistan Civilian Casualty Prevention*, 16 June 2012, http://www.globalsecurity.org/military/library/report/call/call_12-16.pdf.

30. A9 expressed this concern in noting the need for "analytics based metrics for assessment" of institutional effort. Tompkins, "Kinetic Air Power and Civilian Casualties," slide 13.

31. This was the experience of military and human rights actors participating in the National Security and Human Rights Program at Harvard University from 2001 to 2008.

32. Julian E. Barnes, "U.S. Probes Civilian Casualties in Iraq, Syria," *Wall Street Journal*, 6 January 2015, <http://www.wsj.com/articles/u-s-acknowledges-probes-of-civilian-casualties-in-iraq-syria-1420582071>.

33. A9 notes that civilian casualties impact the relationship between coalition partners and the partner nation/people. Tompkins, “Kinetic Air Power and Civilian Casualties,” slide 7.

34. See John A. Nagl’s foreword to the University of Chicago Press edition of the *U.S. Army/Marine Corps Counterinsurgency Field Manual* (Chicago: University of Chicago Press, 2007).

Chapter 7

Success

The United States Air Force (USAF) has enjoyed great success in minimizing civilian harm in war. While this success emerged as the collateral *benefit* of a technological evolution, the USAF also began to promote purposefully the goal of mitigating civilian casualties (CIVCAS). During the 1990s, conscious efforts to innovate in weapons development, targeting methodologies, and tactics, techniques, and procedures enabled the USAF to achieve its military objectives while reducing risks to noncombatants.

Since airpower's birth, USAF doctrinal principles, such as the economy of force, had predisposed the service toward precision. Yet through much of the twentieth century, technology had limited airpower's ability to be precise. As the Cold War neared an end, however, advances in munitions; intelligence, surveillance, and reconnaissance; and delivery platforms enabled the USAF to envision, and then demonstrate, the ability to focus on achieving specific effects in armed conflict, rather than focusing primarily on the destruction of enemy military capabilities.

The reshaped security landscape also increased the feasibility of—and the incentives for—USAF efforts to address civilian casualties. With the demise of the Soviet Union, the prospect of a global conflict between two superpowers gradually diminished, and US military planning began to focus on less existential scenarios in which rules and limits on the use of force appeared more germane. Furthermore, US military superiority—and specifically its dramatic airpower advantage over potential adversaries—reduced key risks and costs to pilots as they experimented with new tactics. A diminished air-to-air threat allowed the USAF to concentrate on targeting and support of ground operations.

Finally, US military operations increasingly revealed civilian casualties as an operational constraint, as a coalition wedge, as a propaganda vulnerability, as a reflection of national values and “soft power,” and even as counterproductive for operational success. Airpower planners began facing these realities a full decade before ground forces were forced to reckon with the same issues. From the searing experience of the Al Firdos bombing during the 1991 Persian Gulf

War to the recurring front-page civilian casualty incidents during the two Balkans air campaigns, civilian casualties imposed real costs. Chastened by criticism for killing noncombatants during the 1990s, the USAF began to dedicate additional investments, new tools, and different approaches to further reduce the risks to civilians.

Perhaps most critically, the USAF had begun to change its way of thinking. The service no longer needed to focus on destruction in the name of ensuring results; the new planning mind-set sought instead to identify specific targets that could achieve equivalent effects with reduced destruction and collateral damage. The USAF moved beyond reliance on the “floor” of the law of armed conflict and instead sought to *minimize* civilian harm as an operational priority.

As a result, farsighted and far-reaching institutional adaptation began. Rather than simply adjusting in the field to operational restrictions resulting from sensitivity to civilian harm, the USAF invested in lasting innovations, including the collateral damage estimation process, discriminate capabilities, and an effects-based orientation. These suggested a deeper, institutional commitment to civilian casualty prevention. And as the USAF pursued technology and developed new targeting concepts consistent with USAF tenets, new opportunities to mitigate harm emerged.

Over the past 20 years, the USAF has been at the vanguard of addressing what the US military now refers to simply as civilian casualties. This has benefited the United States in many respects, but it has also benefited the USAF and airpower. The USAF has been able to advance its normative intent without impeding its operational effectiveness. Its institutional adaptation has reduced the likelihood that operators would have to make zero-sum choices among civilian protection, self-protection, and mission accomplishment. Moreover, by addressing high-level political concerns about the impact of civilian harm, the USAF has advanced its institutional interest in maintaining freedom of action. Improving civilian casualty mitigation also helped ensure that airpower would remain a capability of choice. Finally, this progress has been consistent with key tenets of airpower and has “cost” the service relatively little in time and resources.¹

Americans are proud that their armed forces fight with professionalism and humanity, and Americans believe the military does all it can to minimize civilian harm. The military in turn should be making every effort to do just that. However, ground forces remain significantly behind in their institutional innovation to prevent civilian

casualties. Moreover, it remains unclear whether civilian casualty adaptation within the USAF will be fully institutionalized or will eventually wither away. For those who believe the civilian casualty issue has been “solved” or no longer requires dedicated attention, it is worth considering an analogous issue: fratricide.

Since the early days of the republic, the US armed forces had considered fratricide, like civilian casualty, an unavoidable aspect of war. And, as in the case of civilian casualty, the American military has always sought to minimize the accidental killing of friendly forces. However, through most of the military’s history, fratricide was not an independent priority for the institutional force. That is to say that while fratricide was a constant operational concern and an inherent element of training, it was not regarded as a problem that could be addressed effectively on its own. Instead, reducing friendly fire would be a collateral benefit of other improvements in military capability. Fratricide lacked an institutional proponent pushing for dedicated solutions. While a constant concern of Americans and the US military, fratricide was almost invisible from an institutional and organizational perspective.

This situation changed after the 1991 Persian Gulf War. Americans and the US military began to see fratricide in a different light—as a tragedy that could be greatly reduced, if not permanently eliminated.² Increased attention, advocacy, and dedicated funding pushed the institutional force to devote resources to preventing fratricide in future conflicts. While fratricide still tragically occurs, forces have benefitted from innovations such as Blue Force Tracker—a GPS-enabled system providing location information regarding friendly and hostile forces.³ If the military institutionalizes a focus on civilian casualty in a similar manner, the United States can continue to whittle away at the enduring challenge of noncombatant deaths. Even the USAF can do more, in each of the areas highlighted in chapter 6, to ensure civilian casualty remains an institutional priority.

Public concerns about civilian casualties in war seem to “stick” most to airpower, even during combined operations when ground commanders control air strikes. This is ironic given that airpower led the way in developing new approaches to reduce civilian casualties. Airmen fear that US power, and airpower in particular, may never be *good enough* because it is always chasing its own success. They have a point. Thus, it is essential that we applaud and recognize the progress achieved to date.

It is precisely because US leaders assert, and Americans believe, that the armed forces do everything possible to minimize civilian harm, that this is the standard to which the USAF and US military more broadly should aspire. Therefore, civilian casualty prevention must become not just a goal during combat operations but also an essential element of improving capabilities and options for the next armed conflict. The USAF, which learned this lesson over a decade ago, must therefore continue chasing its considerable success.

Notes

1. The costs may vary dramatically among the services; in particular, air and land forces face very different risks in tactical actions to avoid CIVCAS.
2. An estimated 24 percent of all US combat deaths were due to friendly fire, a rate that was considered shockingly high both because of the small number of total combat deaths and due to a historical underestimation of fratricide rates. Office of Technology Assessment, US Congress, *Who Goes There: Friend or Foe?* (Washington, DC: Government Printing Office, June 1993), 1.
3. Anne Plummer, "DOD Attempts to Tackle Fratricide Problem That's Lingered since 1991," *Inside the Army*, 22 March 2004.

Abbreviations

AAC	Air Armaments Center
ACTS	Air Corps Tactical School
AFDD	Air Force doctrine document
AFHRC	Air Force Historical Research Center
AFMAN	Air Force manual
AFPAM	Air Force pamphlet
AI	Amnesty International
AP I	Protocol Additional (I) to the Geneva Conventions of 12 August 1949
CALL	United States Army Center for Lessons Learned
CCTC	Civilian Casualty Tracking Cell
CDA	collateral damage assessment
CDE	collateral damage estimate
CDET	Collateral Damage Estimate Tool
CDM	collateral damage mitigation
CFACC	Combined Force Air Component commander
CIVCAS	civilian casualty(ies)
CJCS	chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff instruction
COCOM	combatant command
COE	center of excellence
COIN	counterinsurgency
CWEAT	conventional weapons effects assessment team
DOD	Department of Defense
DOTMLPF	doctrine, organization, training, materiel, leadership and education, personnel, and facilities
EBO	effects-based operation
FLM	Focused Lethality Munition
FM	US Army field manual
GAO	Government Accountability Office (formerly General Accounting Office)

GBU	guided bomb unit
GPS	Global Positioning System
GWAPS	<i>Gulf War Air Power Survey</i>
HRW	Human Rights Watch
ICRC	International Committee of the Red Cross
ICTY	International Criminal Tribunal of the Former Yugoslavia
IED	improvised explosive device
IHL	international humanitarian law
ISAF	International Security Assistance Force
ISIL	Islamic State in Iraq and the Levant
JCCS	Joint Civilian Casualty Study
JCOA	Joint Center for Operational Analysis
JDAM	Joint Direct Attack Munition
JIEDDO	Joint Improvised Explosive Device Defeat Organization
JLLIS	Joint Lessons Learned Information System
JP	joint publication
JTAC	joint terminal attack controller
JUON	Joint Urgent Operational Need
JWAC	Joint Warfighting Analysis Center
JWFC	Joint Warfighting Center
LCDC	low-collateral-damage capabilities
LOAC	law of armed conflict
LOW	law of war
MISREP	mission report
MRAP	Mine Resistant Ambush Protected Vehicle
NATO	North Atlantic Treaty Organization
NCV	noncombatant casualty cutoff value
NGO	nongovernmental organization
OAF	Operation Allied Force
OIF	Operation Iraqi Freedom

PGM	precision-guided munition
PME	professional military education
RAF	Royal Air Force
ROE	rules of engagement
RPV	remotely piloted vehicle
RTS	Radio Television of Serbia
SAC	Strategic Air Command
SACEUR	Supreme Allied Commander, Europe (NATO)
SDB	small diameter bomb
SF	United States special forces
SIGACTS	significant activities
STAR	sensitive target approval and review
TTP	tactics, techniques, and procedures
UK	United Kingdom
UN	United Nations
US	United States
USAAF	United States Army Air Force
USAF	United States Air Force
USCENTAF	United States Central Air Force
USCENTCOM	United States Central Command
USMC	United States Marine Corps
UNSC	United Nations Security Council
USSBS	<i>US Strategic Bombing Survey</i>

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