

2nd Marine Division (Jacob Brewer)



Marines fire howitzer at targets near western Baghdad

Obstacles to Effective Joint Targeting

US Navy (John Taucher)



Sea Sparrow missile launches from USS *Bataan* after locking onto target during exercise

U.S. Army (Gary Kieffer)



Soldiers fire FGM-148 Javelin antitank missile

By JOHN PATCH

Targeting in the good old days was relatively simple. Physical, technological, and informational limitations meant that most bombs missed their targets. Warfighters shrugged off inevitable misses, and the media did not play up unintended civilian deaths. Even as recently as Operation *Desert Storm*, warriors and statesmen did not confront today's com-

bination of complex weapon systems, amorphous nonstate adversaries, restrictive rules of engagement, and the real-time impact of ubiquitous press coverage. The contemporary potential strategic impact of a single errant munition simply was not a factor.

Indeed, no foe can beat the modern-day American military machine in combined arms warfare, yet this machine is subject

to strategic targeting vulnerabilities that military and policy leaders would do well to appreciate. Indeed, to succeed in joint warfare, commanders and staff must understand both the critical need for effective joint targeting and its inherent limitations. Notwithstanding the most precise and capable weaponry ever, *any* targeting effort absent coherent strategy or executed outside the art and rules of war can spell campaign defeat—even amidst tactical successes.

In analyzing Operation *Iraqi Freedom*, Operation *Enduring Freedom*, and the war on terror, the varied methodologies employed across Services, components, headquarters, and intelligence centers demonstrate several challenging obstacles to achieving the aims of joint targeting: efficiency, effectiveness, and strategic success.¹

Doctrinal Problems

Ample joint and Service targeting/fires doctrine currently exists, but no single document or compendium establishes universal standards or integrates proven concepts and methods across Services or at the different levels of warfare.² In addition, not all warfighters follow or are even aware of joint doctrine (ostensibly the U.S. military benchmark), and Joint Staff directives do not necessarily shape combatant command targeting efforts. Joint doctrine also focuses almost exclusively on air-to-ground munitions, while Service publications concentrate on indigenous weapons systems, platforms, and tactics/techniques/procedures (TTPs). Army targeting doctrine, for instance, centers on field artillery and establishes a methodology dissimilar to the joint targeting cycle.

Similarly, terminology differences across Services and between operators and intelligence analysts create confusion: *high-value target* means completely different things in different targeting/fires publications. Extant doctrine also fails to address adequately the post-9/11 lessons, such as the limitations of U.S. heavy weapons in urban warfare—demonstrated vividly in Army and Marine operations in Najaf and Fallujah.

The myriad publications spend far too little time emphasizing the most important aspects of the targeting cycle, the crucial first and last phases. Excessive focus on weapon selection, mission planning, and execution occurs while target categories, critical nodes, and individual targets are developed often before strategic objectives are even identified.

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Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Obstacles to Effective Joint Targeting				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Office of Naval Intelligence, 4251 Suitland Place, Washington, DC, 20395-5720				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

If distilling the varied Service and joint targeting doctrine becomes too hard, then it will not be followed, especially in the high-tempo combat environment.

Doctrine must balance change and continuity as dynamic warfare environments emerge.³ In the end, applied operational art (not doctrine alone) must stress the critical importance of asking the two key questions associated with the first and last steps: Is this a valid target in keeping with the commander's intent, U.S. national security strategy, and American values? Was the desired effect achieved, and did it contribute to the strategy?

Minimal Joint TTPs

The various Services and warfare communities develop and use different targeting systems and TTPs and do not train enough toward joint operations, which occasionally translates into ineffective and inefficient targeting/fires in combat. Furthermore, Service and joint "train and equip" headquarters do not effectively incorporate real world lessons into predeployment training and force structure/equipping.⁴ No military or civilian body at a level above the Department of Defense (DOD) enforces targeting TTP standards. For instance, the Joint Targeting School (JTS), while an ideal forum for reinforcing common doctrine and TTPs, is not truly joint. Despite the "purple" JTS staff, Navy and Marine personnel are the main attendees. Some Army fires personnel do attend, but Air Force targeting instruction focuses on a separate curriculum across the country—attended by few, if any, Army, Navy, or Marine personnel.

Another example is the inconsistent use of the modernized integrated database (MIDB) across the Services, combatant commands, and interagency community. U.S. Central Command (USCENTCOM), for instance, uses MIDB as the authoritative source of registered mensurated aim points, whereas other combatant commands do not. The Services also use at least three separate systems to derive mensurated coordinates⁵—each with separate funding, training, and hardware/software. One need only imagine the result of imprecise coordinates for a 2,000-pound joint direct attack munition (JDAM) in an urban center to emphasize the importance of common

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mensuration joint TTPs. While the Joint Staff provides targeting oversight, it does not have true enforcement powers, the authority to set standards outside DOD, or the personnel to staff a contingency joint targeting organization.⁶ The semiannual Joint Staff Military Targeting Committee is not enough.

Targeting Mission Creep

Traditional targeteer trade-craft revolves around a narrow area of expertise: kinetic ordnance,

typically delivered by aircraft. Since 9/11, some Service/joint task force staffs morphed targeting/fires cells into effects-based (EB) entities simply by expanding missions and requirements outside kinetics, often without the requisite training or capabilities. While nonkinetic fires and other EB efforts are important developments within defense transformation and a critical component of any strategy, attempting to turn targeteers into "EB warriors" is inherently unwise. It is like asking a psychiatrist to conduct dental work.

Furthermore, EB organization leaders often have not attended basic targeting and fires training alongside other EB curricula. The JDAM is but one tool in the effects arsenal, but expert advice on delivering one efficiently and effectively is inherently the targeteers' responsibility. Foisting nascent and arcane mission areas on targeteers will only distract them from their already complex and specialized work.

Service Legacies

Almost 20 years after Goldwater-Nichols, pervasive Service legacies that hinder efficient and effective targeting endure.⁷ Separate procurement, development, and fielding of target acquisition systems and munitions—some of which are incompatible with other Services⁸—remain a barrier to successful joint targeting. Furthermore, dissimilar aircraft, weapons, targeting systems, and predeployment training result in operational forces learning about inter-Service dichotomies only amidst the melee of real world combat.

Legacy single-Service targeting practices promote parochialisms that inhibit joint fires. In components where one Service is predominant (such as the Air Force at the Coalition Forces Air Component Command [CFACC]), Service legacy systems and perspectives hold

sway over targeting and fires. Moreover, the Air Force closely guards its ground-based link to air support via the Joint Terminal Air Controller (JTAC) cadre, ensuring that nuances of airpower remain an arcane art to most Soldiers. Service legacies exacerbate competing joint priorities and rivalries—at extremes manifested by motivation for sole Service recognition. Repeat general/flag officer allegations of divergent component targeting/fires priorities amid combat operations provide historical examples. Subjective postconflict munitions effectiveness assessments due to Service biases are another.

Few Qualified Targeteers

Some personnel serve in targets billets without essential training and operational experience, becoming targeteers overnight. Targeting itself also means different things to different Services and warfare communities. A Special Forces targeteer may be an expert at fixed-wing gunship fire support, wall breaching, and time-sensitive targeting during small-scale operations but may have zero ability to develop and employ a targeting strategy against an adversary integrated air defense system. Similarly, JTACs may be qualified to call in precision weapons from Air Force aircraft to support troops in contact but may have little understanding of joint targeting principles or may not have ever accomplished a collateral damage estimate.

Warfighters at all levels should apply scrutiny to those calling themselves targeteers. A true targeteer should ideally have attended JTS (or the Air Force equivalent), have a proven operational targeting record, and demonstrate proficiency in joint/Service targeting systems/software applications and weaponeering fundamentals. Targeting cell leaders should also have completed joint professional military education and be able leaders and managers of large organizations under real world crisis operational tempos. The art and science of targeting revolves around mastery of highly specialized areas, such as the law of armed conflict, weapons physics/delivery parameters and fusing, statistics, target development/nodal analysis, all-source intelligence fusion, and geodesy. Of note, an especially dire shortage of qualified battle damage assessment (BDA) analysts exists; BDA efforts are often doomed to failure, and few targeteers seek to specialize in it. Finally, a weaponeer is not a targeteer, whereas tar-

geteers typically master the fundamentals of weaponeering. True targeteers are rare, high-demand, low-density assets. Many operators are surprised at the expansive targeteer training and qualifications; it truly is, and should remain, a career specialty.

Overreliance on Technology

Quantum leap technological advances have vastly improved the fidelity and rapidity of target prosecution. Compressed timelines associated with fleeting high-value targets, however, drastically reduce the ability to make objective assessments of all data for informed recommendations to commanders. A pilot, for example, identifies an anti-aircraft artillery piece via a targeting pod and seeks permission to drop immediately, deeming the piece a threat to friendly aircraft. Current electro-optical/infrared targeting pods allow aircrew to discern potential targets not identifiable only a few years ago; headquarters can even receive still images of the “threat.” Suddenly, the commander himself is virtually on the trigger, more empowered to grant prompt weapons release.

What is sometimes missing, however, is the targeteer, who can pinpoint target location, give a confidence level to target identification, and provide situational context (that is, assess threat, collateral damage estimate, military advantage, and probability of destruction based on weapon/delivery platform). If an anti-aircraft artillery piece was within a civilian neighborhood and the only weapon available was a 2,000-pound JDAM, or if target data came from a pilot who is unfamiliar with the terrain and threat from a single pass at 20,000 feet at 500 knots, what might the consequences be? Visual data, no matter how obtained, is still “single source” information. A sufficiently informed commander might deem the threat not so dire that munitions should be employed without due diligence. Herein lies the critical value-added input of the targeteer.

Other advances in targeting command control, such as the Automated Deep Operations Coordination System⁹ and secure voice over Internet protocol telephony, vastly enhance connectivity and awareness among joint headquarters and the interagency community, but more knowledge available to more people does not necessarily translate into more informed decisionmaking. Targeting technology absent the targeteer is inherently

dangerous when considering the potential consequences of a bad drop.

Poor Operations-Intelligence Integration

Joint planners cannot effectively perform the intelligence/targeting cycle steps when operations centers fail to integrate targeteers. While targeteers are sometimes guilty of stovepiped analysis behind the “green door,” operators also occasionally exclude targeteers from planning/decision circles and risk uninformed decisions. A recurring real world example is the “broken” combat assessment phase of campaign targeting, when coherent BDA becomes impossible because the next weapon release typically receives the weight of intelligence and operational effort, not the last one(s). While the warrior ethos clearly has a place in combat units, ignoring targeting recommendations because of a lack of understanding or respect for the importance of this often inglorious, detailed targeting “nug-work” can chance collateral damage, fratricide, or even mission failure. Dropping a weapon is tactical; targeting is not.

Warfighters obviously direct targeting/fires cells, but few can actually claim themselves to be qualified targeteers. Many have pulled the trigger or released countless weapons in combat, but few seem to appreciate the nuances and rigors of a targeting cycle properly applied at all levels of warfare. Targeting truly has esoteric aspects typically absent from most general and flag officer career paths or specialties. Take, for example, aim point mensuration: few warfighters fully understood the fact that JTAC-derived coordinates may work effectively in Iraq but would put weapons far off target at elevation in Afghanistan.

When nontargeteers advise general and flag officers on targeting, a recipe for operational miscalculation exists. Sadly, it is rare to witness staff challenging flawed general/flag officer targeting assumptions or related operational decisions. Careerism and either intimidation from, or loyalty to, seniors should not be the guiding force behind operational targeting and fires: neither noble intent nor “asking forgiveness vice permission” represents targeting due diligence. The best targeteers are sometimes those willing to disagree ardently with the boss. Neither rank nor combat experience inherently conveys a complete understanding of targeting. Hubris is a dangerous alternative to sound targeting.



Airmen using Joint Precision Air Drop System during mission over Afghanistan

U.S. Air Force (Brian Ferguson)

Poor Interagency Cooperation

Notwithstanding the post-9/11 national mandate for better collaboration and cooperation, stovepipes and enmities persist between DOD and the interagency community. Even the accidental 1999 Chinese embassy bombing in Belgrade has not served to institute procedures to prevent strategically significant targeting errors. Currently, interagency coordination is occurring most optimally at the operational level via Joint Interagency Coordination Groups (JIACGs)¹⁰ and tactically at deployed task forces (JIATFs). Yet these entities have proven transitory, with a relatively narrow mission focus; the larger targeting/fires communities have not adopted effective JIACG/JIATF joint TTPs. Furthermore, the alphabet soup of targeting-related agencies serves different masters and suffers from the typical bureaucratic ills that limit collaboration.¹¹ Multiple, disparate interagency/DOD targeting cells have different roles, missions, and levels of operational expertise. Repeat postconflict lessons learned since Operation *Desert Storm* continue to highlight this obstacle.

Unfortunately, because of the preceding factors, what typically happens with the standup of a new JTF staff (and even standing task force staff rotations) is that well-intentioned initiatives drive targeting/fires cell TTPs, not institutional expertise. Wasted resources and redundant efforts to reinvent targeting with operational ad hocery are the result.¹² In fairness, warriors run targeting/fires cells, and they answer to other warriors with stars. Task force staffs, however, typically do not have a core of fully qualified targeteers/joint fires personnel and recurring headquarters/unit rotations simply overextend the small joint targeteer cadre. The ad hoc approach might also involve adopting conventional targeting and fires doctrine/TTPs (that is, those needed during the combat phase of operations) at a point in the conflict when it is neither effective nor appropriate. (Phase IV operations in *Iraqi Freedom* and *Enduring Freedom* are good examples.)

F-16CJ drops 2,000-pound JDAM during test mission

From this discussion, several recommendations are obvious; a few have been reflected in some fashion in every lessons learned assessment since Operation *Desert Storm*. Naval, joint, and policy decisionmakers should consider them in the post-9/11 strategic environment:

- Combine all Service targeting/fires courses at JTS under U.S. Joint Forces Command (USJFCOM).
- Establish a rigorous qualification process with Joint Staff oversight for all joint targeting/fires cadre; adopt USCENCOM best practices as the model and mandate targeting personnel qualification standards across all combatant commands and Services.
- Organizationally, keep targeting cells intact under larger EB umbrella staffs.
- Establish or maintain existing Service targeting and fires career specialties, with requisite promotion potential to O-6/E-9; vouchsafe the targeting specialty.
- Establish an executive targeting/fires curriculum taught in the Capstone course, with a focus on real-world targeting errors and consequences.
- Combine relevant joint and Service doctrine into a "Targeting Bible," with sections applicable to each level of warfare and sufficient attention to BDA.
- Establish a National Targeting and Fires Center¹³ under Joint Staff auspices to consolidate and enforce targeting/fires joint TTPs, with authoritative representation from the joint operations, intelligence, legal, and interagency communities—with targeting standards enforcement authority.¹⁴
- Consolidate the best aspects of Service legacy targeting systems into a single targeting systems package, such as the Joint Targeting Toolbox, with Joint Staff authority to enforce inter-Service standardization.
- Establish and monitor predeployment joint targeting measures of effectiveness under USJFCOM.
- Establish Joint Staff oversight of a career joint combat assessment specialty designation and mandatory Service quotas. Naturally, strategic success entails achievement of clearly articulated political-military objectives and

operational success accomplished at an acceptable cost, while maintaining the integrity of Western humanitarian and warfare principles. Efficient and effective joint targeting supports strategic success, which is achievable with the requisite emphasis. As weapons system capabilities increase exponentially, decisionmakers would do well to ensure that joint targeting cadre, systems, and joint TTPs are established and sustained. The art and science of targeting as a discipline has four key goals: hitting the *right* target for the *right* reason, at the *right* time and place, with the *right* weapon. This implicitly brings human intellectual judgment into the equation, a critical element within the contemporary DOD "cognitive transformation" effort.

Targeteers fundamentally appreciate that ordnance and hardware alone will not win wars—that "weapons on target" is not an end in itself. DOD must address the obstacles above to create the conditions in which joint targeting efficiency and effectiveness can become integral to the American way of war. America could wield its military supremacy for naught absent coherent, enlightened strategy; weapons brandished by uninformed commanders are better left in the armory. **JFQ**

NOTES

¹ Admiral Edmund P. Giambastiani, Jr., USN, testimony before the House Armed Services Committee, October 2, 2003, available at <www.jfcom.mil/newslink/storyarchive/2003/pa100203.htm>.

² David Deptula, Gary Crowder, and George Stamper, Jr., "Direct Attack Enhancing Counterland Doctrine and Joint Air-Ground Operations," *Air & Space Power Chronicles* 17, no. 4 (Winter 2003), available at <www.airpower.maxwell.af.mil/airchronicles/apj/apj03/win03/deptula.html>.

³ David Jablonsky, "U.S. Military Doctrine and the Revolution in Military Affairs," *Parameters* 24 (Autumn 1994), 18–36, available at <<https://carlisle-www.army.mil/usawc/Parameters/1994/jablonsk.htm>> accessed.

⁴ Headquarters USMC, "Concepts and Programs 2005, Chapter 4: Current Operations and Lessons Learned," 222. See also Chuck Harrison, "How Joint Are We and Can We Be Better?" *Joint*

Force Quarterly 38 (July 2005), 14–19, available at <www.ndu.edu/inss/Press/jfq_pages/0638.pdf>.

⁵ That is, generated aim point coordinates that are sufficiently accurate for weapons guided by global positioning systems.

⁶ U.S. Joint Forces Command (USJFCOM) is championing the development of a standing joint force contingency headquarters, but the extent of targeting/fires systems capability and personnel expertise is limited.

⁷ Jeffrey K. Gruetzmacher, Michelle Holtery, and Jonathan Putney, "Fratricide: The Ultimate Cost of Joint Interoperability Failure," Joint Forces Staff College, Joint/Combined Staff Officer School, June 11, 2002, available at <www.jfsc.ndu.edu/current_students/documents_policies/documents/jca_cca_awspp/fratricide.doc>.

⁸ A 2004 Government Accountability Office (GAO) assessment cited this as one of four key barriers to joint targeting improvement. See "Military Operations: Recent Campaigns Benefited from Improved Communications and Technology, but Barriers to Continued Progress Remain," GAO Report GAO-04-547 (Washington, DC: GAO, June 2004), available at <www.gao.gov/htext/d04547.html>.

⁹ Automated Deep Operations Coordination System is a joint mission management software application with tools and interfaces for horizontal and vertical integration across battlespace functional areas, such as joint time-sensitive targeting. See <www.gdc4s.com/content/detail.cfm?item=34425bdb-6226-4f5a-991c-cccafb-c412d9>.

¹⁰ Matthew F. Bogdanos, "Joint Interagency Cooperation: The First Step," *Joint Force Quarterly* 37 (April 2005), 10–18, available at <www.ndu.edu/inss/Press/jfq_pages/0437.pdf>.

¹¹ For example, the Defense Threat Reduction Agency, Director of Central Intelligence, J2T, Joint Technical Coordinating Group—Munitions Effectiveness, Defense Intelligence Agency, and Joint Warfare Analysis Center, among others.

¹² Charles E. Kirkpatrick, "Joint Fires as They Were Meant to Be: V Corps and the 4th Air Support Operations Group during OIF," Institute of Land Warfare, Paper No. 48 (Arlington, VA: Institute of Land Warfare, October 2004), 2. On the V Corps drive to Baghdad in 2003, staff essentially developed ad hoc procedures to handle fast-paced close air support and deeper direct attack requirements.

¹³ See also Mark C. Christian and James E. Dillard, "Why We Need a National Joint Targeting Center," *Air & Space Power Chronicles*, January 6, 2000, available at <www.airpower.maxwell.af.mil/airchronicles/cc/Dillard.html>.

¹⁴ The recent USJFCOM establishment of the Joint Fires Integration and Interoperability Team is a step in the right direction, but neither incorporates all aspects of targeting nor possesses enforcement powers.