



SMALL WARS JOURNAL

www.smallwarsjournal.com

SWJ Magazine -- INTERIM New! & Improved? 😊 (BETA)

This is an interim edition of an article that has been peer-reviewed for its content and quality, and accepted for publication in SWJ Magazine.

The article, its author, and its audience deserve better editing and formatting than we have provided at the moment, i.e. none. It is being released in this format because the Small Wars Community of Interest needs this material, and this is the way we can get it out without further delay (which, in some cases, has already been substantial).

The throughput of our publishing has not kept pace with the enthusiasm of our audience and the productivity of our contributing authors. We're working on that, but the author's ideas are ready now. So this article is provided "as is" for the moment. Revised versions of this article for edits, format, and presentation will be posted when they are available and as site improvements are made.

[SWJ Magazine](#) and [Small Wars Journal](#) are published by Small Wars Journal LLC.

COPYRIGHT © 2008 by Small Wars Journal LLC.

Permission is granted to print single copies for personal, non-commercial use. This work is licensed via the Creative Commons Attribution - Non-Commercial -Share Alike 3.0 License per our [Terms of Use](#). We are in this together.



No FACTUAL STATEMENT should be relied upon without further investigation on your part sufficient to satisfy you in your independent judgment that it is true.

Contact:

comment@smallwarsjournal.com

submit@smallwarsjournal.com

Visit www.smallwarsjournal.com

Collateral Damage and Counterinsurgency Doctrine^{*}

By

Major General Charles J. Dunlap, Jr., USAF[†]

When America's landpower services issued their new counterinsurgency (COIN) doctrine in December of 2006, the Pentagon rightly hailed it as "a real team effort of Army and Marine writers."¹ Although officially cast as simply doctrine for the two services, it was not long before Field Manual (FM) 3-24, (designated by the Marine Corps as Warfighting Publication 3-33.5)² was being broadly touted in the media as "The Book" on Iraq.³

Following the designation of one of FM 3-24's principal architects, General David H. Petraeus, as the Commanding General of the Multinational Force,⁴ it actually became, in effect, *the* strategy not just for the ground component, but the whole joint force in Iraq. Reflecting the views of many, Senator John McCain calls it the "blueprint of U.S. efforts"⁵ to secure that troubled country for its citizens.

FM 3-24 is indeed a brilliant collection of ideas and experiences from past COIN efforts, especially from the post-colonial era wars of the 1950s, 60s, and 70s. The result is, understandably given FM 3-24's authorship, a very ground-force intensive approach. For example, translated to Iraq, FM 3-24 calls for force ratios that amount to 500,000 highly-trained counterinsurgents.⁶

Unfortunately, the problem with over-reliance on historical case studies is that it breeds thinking that is frozen in time in terms of technology. The case studies arise mainly from eras when technology had little to offer counterinsurgents. More specifically, the doctrine seems to assume that the limitations applicable to airpower during these earlier wars still apply today.

FM 3-24 does attempt to include a few lessons from Operation Enduring Freedom (OEF) in Afghanistan and Operation Iraqi Freedom (OIF), but these are almost entirely tactical, and wholly ground-centric. Indeed, FM 3-24's discussion about airpower largely is limited to a five-page annex in its nearly 300-page text. When it does consider airpower, FM 3-24 clearly favors rotary wing options organic to ground forces.

Clearly, the complexities of today's COIN operations require a more fully joint approach that takes advantages of the full range of capabilities – and thinking – available in the U.S. armed forces. Fortunately, this seems to be the approach actually being taken in Iraq. Notwithstanding FM 3-24, USA Today reports, for example, that a four-fold increase in airstrikes through the first nine months of 2007 reflected "a steep escalation in combat operations aimed at al-Qaeda and other militants."⁷ As a result of the greater use of airpower, both Iraqi and American deaths have fallen.

^{*} This essay is derived from a monograph entitled *Shortchanging the Joint Fight: An Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine* to be published by Air University Press in December 2007.

[†] The views and opinions expressed in this essay are those of the author alone and do not necessarily reflect those of the Department of Defense, the U.S. Air Force or any other entity of the U.S. Government.

Still, practice should normally be consistent with doctrine. In late May of 2007 all the services agreed to draft joint doctrine.⁸ Significantly, however, Inside the Pentagon reported that “several officials” said that FM 3-24 will serve “as a primary building block for the new service-wide effort.”⁹ If this is the case, then it is imperative that the opportunity be seized to correct FM 3-24’s technology “light” – if not outright anti-airpower - theme.

A joint truly joint approach will reveal many opportunities to exploit airpower, that is, air, space, and cyberspace power in all its many forms.¹⁰ Doing so will complement FM 3-24’s superb treatment of landpower options. One of the most urgent adjustments from FM 3-24’s approach that needs to be made in any joint COIN doctrine is its treatment of the *strike* capability of airpower. Specifically, it admonishes ground commanders to:

[E]xercise exceptional care when using airpower in the strike role. Bombing, even with the most precise weapons, can cause unintended civilian casualties. Effective leaders weigh the benefits of every air strike against its risks. An air strike can cause collateral damage that turns people against the host-nation (HN) government and provides insurgents with a major propaganda victory. Even when justified under the law of war, bombings that result in civilian casualties can bring media coverage that works to the insurgents’ benefit.¹¹

While it is certainly true that air attacks can – and do – cause civilian casualties,¹² it is not clear why FM 3-24 singled-out airpower from other kinds of fires to discourage its employment out of fear of collateral damage. One can only say that it represents a rather “fossilized”¹³ take on current and emerging airpower capabilities, and one encumbered by myths about airpower and its association with civilian casualties. These myths seem to persist despite determined efforts by Airmen¹⁴ to correct the record.¹⁵

Frankly, it is still rather surprising that relatively open information about airpower’s ability to discretely apply force is not reflected in FM 3-24. Consider this 2003 report from Time Magazine about the early phases of OIF:

Judging from the look of the [OIF] battlefields today, the bombing was largely surgical. In the open market in Mahmudiyah, five tanks were hit from the air while they were parked in alleyways so narrow that their gun turrets could not be turned. The storefront windows a few feet away were blown out, but otherwise the surrounding buildings are intact.¹⁶

Even this remarkable achievement seems almost antiquated relative to today’s capabilities. True, it is fashionable in many quarters to dismiss the once-popular concept of the Revolution in Military Affairs (RMA),¹⁷ it is nevertheless beyond debate that information technologies, once touted as the heart of the RMA, have changed warfare significantly – and especially airpower. Of particular importance is the “Precision Revolution”¹⁸ that vastly improved the accuracy of air weaponry.

Most U.S. attack aircraft, for example, now employ sophisticated targeting systems that markedly reduce the risk of civilian casualties. For example, the Litening targeting pod¹⁹ contains a high-resolution, forward-looking infrared sensor (FLIR) and a charged coupled device camera (CCD-TV) that permits exceptional strike accuracy.²⁰ Likewise,

the Sniper Advanced Targeting (AT) pod is a multi-spectral system that produces high-resolution imagery that “allows aircrews to detect and identify tactical-size targets outside...jet noise ranges for urban counter-insurgency operations.”²¹ Combined with a whole family of satellite-guided munitions,²² aircraft can strike targets with extreme accuracy in any weather.²³ Furthermore, upgrades to the Air Force’s E-8 Joint STARS²⁴ aircraft will enable satellite-guided munitions to strike *moving* targets.²⁵

Besides advanced targeting systems and precision technology, the employment of smaller air-delivered munitions is a further reason why airpower is now able to minimize collateral damage. Smaller munitions have long allowed the AC-130 gunships to provide “surgical firepower”²⁶ with their cannons; more recently, however, the MQ-1 Predator Unmanned Aerial Vehicle (UAV) was armed with the Hellfire II missile which has a warhead of only 20 pounds.²⁷

Of even more significance is the deployment in late 2006 of GBU-39B, the Small Diameter Bomb (SDB).²⁸ This is a munition optimized for the COIN mission. As Lt Gen Gary L. North²⁹ explains:

The SDB is uniquely qualified for urban targets that call for precision accuracy and reduced collateral damage and in close-air-support missions that our aircrews find themselves in during Operation Iraqi Freedom and Operation Enduring Freedom...We now have the ability to put ordnance in places where collateral damage might be a concern.³⁰

The air component is committed to this new capability: the Air Force is planning on buying 24,000 SDBs, some of which will have a composite casing in lieu of steel as an effort to reduce collateral damage even more.³¹ Furthermore, the Focused Lethality Munition “will combine an SDB casing with a new explosive fill that will confine the weapon’s blast effects to within 100 ft. of its detonation point.”³²

Beyond the targeting and munitions technology, the *processes* by which airpower is employed are proving to be as or more effective in minimizing collateral damage as those used for land-component fires. For OEF, the air component developed and deployed to air and space operations centers (AOCs)³³ sophisticated methodologies and processes, supported by specialized computer systems, which help minimize collateral damage by allowing detailed targeting and weaponeering analysis.³⁴ Updating AOC capabilities is ongoing, with the potential to have the ability to “place the cursor over the object of interest on the control screen and have the center’s systems automatically generate all the options for planners and executors.”³⁵

Some of the most important elements of the process, especially for emerging and time-sensitive targets, are outside of the AOC. These would be the ground-based Joint Terminal Attack Controllers (JTACs) that are part of the Air Force’s Battlefield Airmen program.³⁶ JTACs serve with the ground component and ensure that the “aircrew identifies and attacks the correct target, minimizing the risk to friendly ground forces and preventing unwanted collateral damage.”³⁷

Remarkably, JTACs equipped with laptops can “exchange live video imagery with pilots in the cockpit.”³⁸ Such technology gives savvy commanders confidence in using airpower. For example, Remotely Operated Video Enhanced Receivers (ROVER) systems are one reason “close air support missions flown by U.S. Air Force pilots [in

Afghanistan] increased nearly 80% in the first five weeks of 2007.”³⁹ With proper coordination and the right technology, the average response time to troops-in-contact (TIC) requests for airpower from ground commanders has fallen to “six to seven minutes” or less.⁴⁰

All of these efforts produced tangible results that demonstrate that airpower operations minimize the risk to civilians *more* than do ground operations. Human Rights Watch’s study of the major combat operation portion of OIF was harsher on ground forces than it was on the air component. Specifically, the report states that “Human Rights Watch’s month-long investigation in Iraq found that, in most cases, aerial bombardment resulted in minimal adverse effects to the civilian population.”⁴¹ Their assessment of *ground* force performance was, however, not nearly as positive:

U.S. and U.K. ground forces were found to have caused significant numbers of civilian casualties with the widespread use of cluster munitions, particularly in populated areas. Moreover, in some instances of direct combat, problems with training on as well as dissemination and clarity of the U.S. ground forces’ rules of engagement may have, in some instances, contributed to loss of civilian life.

Nevertheless, myths about airpower’s alleged responsibility for civilian casualties *vis-à-vis* landpower persist as FM 3-24’s passage illustrates. In a fascinating March 2007 column, *Shock and Awe Worked, God Help Us*, former Army officer turned national security commentator Bill Arkin concludes that the disparate treatment may be the result of the way today’s media reports.⁴²

Arkin believes that during OIF ground forces actually “caused far more civilian harm [than airpower] with each inch of territory it took.”⁴³ However, when it did occur there was an embedded reporter writing about it “from behind U.S. lines from a U.S. perspective,” who got the explanation for the incident from a “sympathetic observer, a comrade in arms.”⁴⁴

By contrast, there were “no embeds in the cockpit, none even on most air bases.”⁴⁵ By default, therefore, the story was “death and destruction” as told from an *Iraqi* perspective.⁴⁶ This built a “heartless” and inaccurate “image of airpower stuck in World War II mass destruction and Vietnam carpet bombing.”⁴⁷ In other words, the ‘history’ of an airpower civilian-casualty incident was often reported and recorded quite differently than those that were the result of landpower.

As to FM 3-24’s concern about bombing and media coverage, the data shows that the actual impact of civilian casualties on the attitude of foreign populations is not as well understood as FM 3-24 would suggest. In a RAND study released in 2007, researchers found that the “public opinion data on foreign attitudes toward...specific instances of civilian casualties” was difficult to obtain resulting in assessments that were more “sketchy and impressionistic” than those related to U.S. public opinions.⁴⁸

Furthermore, the appreciation for efforts to avoid unintended civilian casualties can vary across cultures. This is particularly true in Arab societies like Iraq. RAND found that Arabs were opposed to OIF in principle and therefore were inclined to judge any civilian casualties harshly.⁴⁹ As early as 2003 Fouad Ajami reported that:

The Arabs are clearly watching, and seeing, a wholly different war. No credit is given for the lengths to which the architects of this campaign have gone to make the blows against the Iraqi regime as precise as possible, to spare the country's civilians, oil wealth, and infrastructure.⁵⁰

Ajami goes on to indicate that because of the influence of the mainly hostile Arab media, Arabs cannot be convinced that the "Western commanders are no rampaging "crusaders" bent on dispossessing Iraqis of their oil wealth."⁵¹ Consequently, although FM 3-24 commendably seeks to avoid insurgent exploitation of *unintended* civilian casualties, there is little evidence that such efforts create much in the way of positive feelings among the host-nation population, at least in the Middle East.

In any event, in assessing the impact of civilian casualties on COIN operations, it is also vitally important to distinguish between the impact of *unintended* civilian casualties (as is typically the case with aerial fires) and those resulting from what appears to be *deliberate* killings (which do occur with ground forces but almost never as a result of airpower). While it is not clear what impact civilian deaths resulting from unintentional actions may have, those that seem to result from the *deliberate* actions of ground forces plainly create *negative* opinions.

Naval War College Professor Mackubin Owens maintains that while all insurgents seek to propagandize civilian deaths – even unintentional ones – it is "even better for the insurgents' cause if they can credibly charge the forces of the counterinsurgency with the targeted killing of noncombatants."⁵² Thus, the allegations of deliberate killings by U.S. ground troops at Haditha, Hammadyia,⁵³ Mahmudiyah,⁵⁴ and elsewhere have been far more damaging to the COIN effort than *any* air-delivered weaponry that has gone awry.

Indeed, the most devastating setback the COIN operation in Iraq has suffered was "collateral damage" *intentionally* inflicted by ground troops such as occurred with Abu Ghraib and related prisoner abuse scandals. Lt Gen Ricardo Sanchez, the senior Army general in command at the time, correctly labeled Abu Ghraib in traditional military terms as "clearly a defeat."⁵⁵ Predictably, Abu Ghraib has many ramifications, not the least of which was that the intelligence-gathering process suffered greatly.⁵⁶

This kind of deliberately inflicted "collateral damage" – which can *only* occur where there are "boots-on-the-ground" – is particularly damaging to the COIN effort in Iraq because it was so antithetical to the mores and values of Arabs. Dinesh D'Souza explains that the "main focus" of Muslim antipathy about Abu Ghraib was what was viewed as "as extreme sexual perversion."⁵⁷ To many, he says, it was a metaphor for "the kind of humiliation that America seeks to impose on the Muslim world."⁵⁸ Some Islamist argued, he adds, "that such degradation was worse than execution because death only strips a man of his life, not of his honor."⁵⁹

To its great credit, FM 3-24 devotes an entire chapter to leadership and ethics,⁶⁰ and contains several additional pieces of guidance all designed to avoid such incidents.⁶¹ Nevertheless, it is questionable whether it is possible to stop them entirely so long as there are troops on the ground. As Stephen Ambrose observes in his classic, Americans at War:

When you put young people, eighteen, nineteen, or twenty years old, in a foreign country with weapons in their hands, sometimes terrible things happen that you wish had never happened. This is a reality that stretches across time and continents. It is a universal aspect of war, from the time of the ancient Greeks up to the present.⁶²

As difficult as it is to avoid such incidents in conventional war, it is even more challenging in COIN environments. As Ambrose points out, most casualties in modern war come from “booby traps or snipers [or] landmines” – exactly the weapons of choice of insurgents⁶³ - and this can enrage soldiers leaving them “very often seeking revenge.”⁶⁴

General Petraeus⁶⁵ acknowledges this is a real issue in today’s COIN fight: “Seeing a fellow trooper killed by a barbaric enemy can spark frustration, anger, and a desire for immediate revenge.”⁶⁶ Petraeus was reacting to a startling report about ground force attitudes in Iraq. In a May 2007 interview, Assistant Secretary of Defense for Health Affairs S. Ward Casscells revealed the findings of a survey of Army and Marine forces:

Only 47 percent of the soldiers and 38 percent of Marines agreed that non-combatants should be treated with dignity and respect. Well over a third of all soldiers and Marines reported that torture should be allowed to save the life of a fellow soldier or Marine. And less than half of soldiers or Marines would report a team member for unethical behavior.⁶⁷

Sometimes the frustrations of a COIN conflict can even infect the thinking of leaders. In a report about the allegations of misconduct by Marines at Haditha, the Washington Post reports that the investigating Army general concluded that “all levels of command” tended to believe that civilian casualties were a “natural and intended result of insurgent tactics.”⁶⁸ This “fostered a climate that devalued the life of innocent Iraqis to the point that their deaths were considered an insignificant part of the war.”⁶⁹

Can better training and improved leadership prevent such “terrible events” that in an era of instantaneous, 24-hour news are so damaging to COIN operations? Only to a degree. In a new book about military justice in Vietnam, Professor William Thomas Allison points out the limitations of even the most robust mitigating efforts:

The extreme nature of warfare, with its inherent fear and chaos, will contribute to acts of inhuman violence against combatants and noncombatants alike. Intensive training, and perhaps more so leadership, can minimize *though not wholly prevent such acts from occurring amid the savagery of combat.*⁷⁰

A recent example from Afghanistan: After escaping an ambush, an *elite* Marine Special Operations platoon continued to fire at Afghan civilians for the next ten miles. In the process this presumably highly-trained ground force killed “at least 10 people and wound[ed] 33, among them children and elderly villagers.”⁷¹ According to Maj Gen Frank H. Kearney III, head of Special Operations Command Central, his investigators believe the civilians killed “were innocent.”⁷² General Kearney adds that this ground-force incident “had a catastrophic outcome from a perceptions point of view.”⁷³

FM 3-24 is rightly concerned about collateral damage; the problem is that it ascribes the greatest risk to exactly the wrong source. If avoiding the most damaging kind of “collateral damage” is as important as FM 3-24 claims, *then reducing the size and reliance on the ground component is the way to do it, not by limiting airpower.*

Airpower offers casualty-minimizing advantages over landpower beyond precision weapons and other technologies. The air weapon is largely under the control of highly-disciplined,⁷⁴ officer-pilots operating in relative safety above the COIN fray. Decisions as to the application of force can be made without the chaos and enormous pressure a young COIN trooper faces under direct attack.

By expressing cautions about the use of airpower that are not imposed on ground-force fires, FM 3-24 violates the rules of construction of good doctrine by inappropriately focusing on platforms as opposed to effects.⁷⁵ Had effects been the focus, analysis would reveal FM 3-24’s reliance upon boots-on-the-ground actually *increases* the risk of the exact type of adverse operational impact of civilian casualties that is wrongly attributed to airpower.

FM 3-24’s treatment of airpower is yet another indication of an endemic problem, that is, a misunderstanding of today’s airpower technology and its ability to be applied in a way that minimizes the risks of the most damaging kind of collateral damage. This is a problem that plagued Airmen during OEF. In his book, *Airpower Against Terror: America’s Conduct of Operation Enduring Freedom*, RAND analyst Benjamin Lambeth found that:

[S]enior leaders, both military and civilian, did not fully understand the accuracy and reliability of munitions, their destructive effects, and their ability to mitigate collateral damage when used properly. That led to fears of collateral damage on their part that were groundless...⁷⁶

Unfortunately, FM 3-24 continues this “groundless” view of current – not to mention emerging – airpower capabilities. A more technically and strategically accurate account of airpower would correct this deficiency, as well as offer other fresh considerations for a truly joint COIN approach.

None of this should suggest that Airmen believe that the solution to the problem of COIN is essentially kinetic, or that a successful COIN doctrine must be “air centric”. Quite the contrary, most Airmen recognize the primacy of non-kinetic means as essential to the kind of COIN effort compatible with the values – not to mention political realities – of democracies in the 21st century.

Exploiting airpower in all its forms also does not mean that ground forces lose their relevance in any way. For the foreseeable future it is beyond debate that Soldiers and Marines will be absolutely irreplaceable elements to any successful COIN operation conducted by the U.S.. In fact, the sheer “irreplaceable” aspect of the young Americans serving in those forces makes the drafting of joint doctrine so important. Absent the complete integration of the full capabilities of all four armed services in a genuinely joint and interdependent way, we unnecessarily put these brave American patriots at risk.

Charles Dunlap is an active duty Air Force Major General. These are his personal views.

¹ Jim Garamone, *Army, Marines Release New Counterinsurgency Manual*, AMERICAN FORCES INFORMATION SERVICE, Dec. 15, 2006, available at <http://www.defenselink.mil/news/NewsArticle.aspx?ID=2453> (last visited May 21, 2007) (hyperlink to “Counterinsurgency Manual” at bottom of the press release).

² Headquarters Department of the Army, FIELD MANUAL NO. 3-24, *COUNTERINSURGENCY*, 15 Dec. 2006, [Hereinafter FM 3-24], also designated by Headquarters Marine Corps Development Command, Department of the Navy, as MARINE CORPS WARFIGHTING PUBLICATION NO. 3-33.5, 1 *COUNTERINSURGENCY*, 15 Dec 2006, available via Garamone, note 1 *supra*.

³ Dan Ephon, *The Book on Iraq*, NEWSWEEK (Web exclusive), Dec. 14, 2007, available at <http://www.msnbc.msn.com/id/16222877/site/newsweek> (last visited Jan. 15, 2007).

⁴ General Petraeus signed the *Forward* of FM 3-24 on behalf of the Army. For a biography of General Petraeus see, Multinational Force – Iraq (MNF-I), *MNF-I Commanding General*, Mar. 8, 2007, available at http://www.mnf-iraq.com/index.php?option=com_content&task=view&id=23&Itemid=16 (last visited Mar. 29, 2007).

⁵ John McCain, *General David Petraeus*, TIME, May 14, 2007, at 76, available at http://www.time.com/time/specials/2007/time100/article/0,28804,1595326_1615513_1615454,00.html (last visited May 19, 2007).

⁶ Linda Robinson, *Why More May Not be Enough*, U.S. NEWS & WORLD REPORT, Jan. 22, 2007, at 34, 36 available at <http://www.usnews.com/usnews/news/articles/070114/22troops.htm> (last visited Jan. 18, 2007)

⁷ Jim Michaels, *U. S. Military Steps up War-Zone Airstrikes*, USA TODAY, Oct. 22, 2007, at 1, available at http://www.usatoday.com/news/world/iraq/2007-10-21-airstrikes_n.htm (last visited Dec. 1, 2007),

⁸ See Elaine M. Grossman, *Services Agree to Write Joint Doctrine for Counterinsurgency Ops*, INSIDE THE PENTAGON, May 24, 2007, at 1.

⁹ Grossman, *Id.*

¹⁰ Secretary of the Air Force Michael W. Wynne, LETTER TO AIRMEN, Nov. 3, 2005, available at <http://www.af.mil/library/viewpoints/secaf.asp?id=191> (last visited Mar. 8, 2007).

¹¹ FM 3-24, *supra*, note 2, at Appendix E, para E-5.

¹² See e.g., David S. Cloud, *U.S. Reviews Afghan Claims of Civilian Toll in Airstrikes*, NEW YORK TIMES, May 4, 2007, at 16, available at <http://www.nytimes.com/2007/05/04/world/asia/04afghan.html> (last visited May 29, 2007)

¹³ See Charles Townshend, *Introduction*, in the OXFORD HISTORY OF MODERN WAR (Oxford, 2005) at 4 (“Soldiers have seldom led the way in technological development, and have often been reluctant to welcome new weapons. Tradition has always been important in fostering the esprit de corps of fighting units, and can lead to fossilization”).

¹⁴ See Department of the Air Force, AIR FORCE HANDBOOK 1, 2005, at 339 available at <http://www.e-publishing.af.mil/pubfiles/af/h/afh1/afh1.pdf> (last visited Mar. 8, 2007) (defining “Airman” as “any person who understands and appreciates the full range of air and space power capabilities and can employ or support some aspect of air and space power.”).

¹⁵ See e.g., Col Phillip S. Meilinger, USAF (Ret.), AIRPOWER: MYTHS AND FACTS (Air University, 2003) available at http://www.au.af.mil/au/aul/aupress/Books/Meilinger_myths/Meilinger_myths_B91.pdf (last visited Apr. 6, 2007).

¹⁶ Terry McCarthy, *Whatever Happened to the Republican Guard?* May 4, 2003, TIME MAGAZINE, available at <http://www.time.com/time/magazine/article/0,9171,1101030512-449441,00.html> (last visited Mar. 27, 2007).

¹⁷ It may be that the Revolution in Military Affairs’ association with the disliked former Secretary of Defense is one reason for its faded popularity. See e.g., Fred Kaplan, *Why Generals Will Fight*

the new secretary of the Army, May 6, 2003, SLATE, available at <http://www.slate.com/id/2082641/> (last visited Mar. 27, 2007).

¹⁸ See generally, Michael Russell Rip and James Michael Hasik, *THE PRECISION REVOLUTION: GPS AND THE FUTURE OF AERIAL WARFARE* (Naval Institute Press, 2002).

¹⁹ Department of the Air Force, *Litening II/ER/AT*, Jan. 2006 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?fsID=114> (last visited Mar. 28, 2007).

²⁰ *Id.*

²¹ Department of the Air Force, *Sniper Advanced Targeting Pod*, Mar. 2007 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?id=7589> (last visited Mar. 29, 2007)

²² The weapons generally rely upon global positions system (GPS) satellites. See generally, Department of the Air Force, *Global Positioning System*, Mar. 2007 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?fsID=119> (last visited Mar. 28, 2007).

²³ See generally, *Precision-Guided Munitions*, WIKIPEDIA, Feb. 13, 2007 available at http://en.wikipedia.org/wiki/Precision-guided_munition (last visited Mar. 28, 2007).

²⁴ Department of the Air Force, *EC 8 Joint STARS*, Oct. 2005 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?fsID=100> (last visited Apr. 16, 2007).

²⁵ *Upgrade Lets Bombs Hit Moving Targets*, AIR FORCE TIMES, Jan. 17, 2007,

²⁶ Department of the Air Force, *AC-130H/U*, Oct. 2005 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?fsID=71> (last visited Mar. 28, 2007).

²⁷ Department of the Air Force, *MQ-1 Predator Unmanned Aerial Vehicle*, Jan. 2007, available at <http://www.af.mil/factsheets/factsheet.asp?fsID=122> (last visited Mar. 28, 2007).

²⁸ Department of the Air Force, *GBU-39B, Small Diameter Bomb*, Aug. 2006 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?id=4500> (last visited Feb. 4, 2007).

²⁹ See Department of the Air Force, *Lt Gen Gary L. North*, Nov. 2006 (biography), available at <http://www.af.mil/bios/bio.asp?bioID=6617> (last visited Mar. 28, 2007).

³⁰ See Department of the Air Force, *USAFE Unit Debuts Small Diameter Bomb in Combat*, Oct. 5, 2006, AMERICAN FORCES PRESS SERVICE, available at <http://www.af.mil/news/story.asp?storyID=123028471> (last visited Feb. 4, 2007).

³¹ See Department of Defense, *Small Diameter Bomb Provides Big Capabilities*, Mar. 24, 2006, available at <http://www.defenselink.mil/transformation/articles/2006-03/ta032406b.html> (last visited Feb. 4, 2007).

³² David A. Fulghum, *Technology Will Be Key to Iraq Buildup*, AVIATION WEEK AND SPACE TECHNOLOGY, Jan. 14, 2007, available at http://www.aviationweek.com/aw/generic/story_channel.jsp?channel=defense&id=news/aw011507p2.xml (last visited Apr. 17, 2007).

³³ AOCs are generally described in Department of the Air Force, *AIR FORCE DOCTRINE DOCUMENT 2, Operations and Organization*, , 3 April 2007, at Chapter 5, available at http://www.dtic.mil/doctrine/jel/service_pubs/afdd2.pdf (last visited June 13, 2007). (last visited Apr. 10, 2007).

³⁴ For a concise and current discussion of how these processes coalesce to minimize collateral damage, see Professor Colin Kahl, *Rules of Engagement: Norms, Civilian Casualties, and U.S. Conduct in Iraq*, 1 April 2007 (paper prepared for the Lone Star National Security Forum, Austin, TX, Mar. 30-1 Apr. 2007 on file with the author).

³⁵ Michael Sirak, *Air Force, Lockheed Martin Lay Out Plan for Modernizing Air Operations Centers*, DEFENSE DAILY, Jan. 23, 2007, at 3, available at <http://integrator.hanscom.af.mil/2007/January/01252007/01252007-19.htm> (last visited May 29, 2007) (quoting John Mengucci, a Lockheed Martin official)..

³⁶ Department of the Air Force, *Battlefield Airmen*, Nov. 2006 (fact sheet), available at <http://www.af.mil/factsheets/factsheet.asp?id=187> (last visited Apr. 6, 2007).

³⁷ *Id.*

³⁸ Caitlin Harrington, *Interview: Michael Wynne, US Secretary of the Air Force*, JANE'S DEFENSE WEEKLY, Mar. 28, 2007, at 34 available at <http://integrator.hanscom.af.mil/2007/March/03292007/03292007-18.htm> (last visited Apr. 6, 2007).

³⁹ Tom Vanden Brook, *Bombing Campaign Intensifies in Afghanistan*, USA TODAY, Feb. 9, 2007, at 9, available at http://www.usatoday.com/news/world/2007-02-08-afghan-air-war_x.htm (last visited May 21, 2007).

⁴⁰ Col Howard D. Belote, USAF, *Counterinsurgency Airpower*, AIR & SPACE POWER JOURNAL, Fall 2006, available at <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj06/fal06/belote.html> (last visited May 14, 2007).

⁴¹ See Human Rights Watch, *Off Target: The Conduct of War and Civilian Casualties*, December 2003, at 20 (underlining added) available at <http://www.hrw.org/reports/2003/usa1203/usa1203.pdf> (last visited 24 Mar 2007).

⁴² William M. Arkin, *Shock and Awe Worked, God Help Us*, WASHINGTONPOST.COM, Mar. 19, 2007, available at http://blog.washingtonpost.com/earlywarning/2007/03/shock_and_awe_worked_god_help.html (last visited Apr. 15, 2007).

⁴³ *Id.*

⁴⁴ *Id.* See also, Jeff Emanuel, 'I Love Those Guys', WALL STREET JOURNAL, OPINIONJOURNAL.COM, May 23, 2007, available at http://www.opinionjournal.com/federation/feature/?id=110010083&mod=RSS_Opinion_Journal&orss=frontpage (last visited May 28, 2007) ("Embedded journalists in Iraq are having their minds changed left and right by U.S. soldiers.").

⁴⁵ *Id.*

⁴⁶ This is a difficult issue of modern war. General Wesley Clark, USA (Ret.) observes that during the Operation Allied Force the Serbs had the immediate advantage with the world media in collateral damage incidents because they were "on the ground" and knew more than did NATO forces. See Wesley Clark, *WAGING MODERN WAR* (PublicAffairs, 2001) at 443.

⁴⁷ *Id.*

⁴⁸ See Eric V. Larson and Bogdan Savych, *MISFORTUNES OF WAR: PRESS AND PUBLIC REACTIONS TO CIVILIAN DEATHS IN WARTIME* (RAND, 2007), at 18, available at <http://www.rand.org/pubs/monographs/MG441/> (last visited Apr. 6, 2007).

⁴⁹ *Id.*, at 209.

⁵⁰ Fouad Ajami, *Through Arab Eyes Blindly*, U.S. NEWS & WORLD REPORT, April 14, 2003, available at <http://www.usnews.com/usnews/news/articles/030414/14fouad.htm> (last visited Apr. 6, 2007).

⁵¹ *Id.*

⁵² Mackubin Thomas Owens, *Men@war: Haditha in Context*, May 30, 2006, NATIONALREVIEWONLINE, available at <http://article.nationalreview.com/?q=MGFjZGFhZGJjYWM0NTJlM2IzMjAxM2I4NDEwYWM5NWl=> (last visited Mar. 26, 2007).

⁵³ U.S. Marine Corps, *Iraq Investigations*, Mar. 26, 2007, available at (<http://www.usmc.mil/lapa/iraq-investigations.htm> last visited Mar. 26, 2007) (discussing Haditha and Hamdania cases).

⁵⁴ See, *Iraq Murder Leads to Soldier's Guilty Plea*, Mar. 21, 2007, CNN.COM, available at http://www.usatoday.com/news/nation/2007-03-21-guilty-plea_N.htm (last visited 26 Mar. 2007) (discussing one case arising out of a 2006 incident where five soldiers were charged in the rape of Abeer Qassim al-Janabi and the killings of her, her parents and her younger sister).

⁵⁵ Tom Brokaw, *Gen Sanchez: Abu Ghraib 'clearly a defeat'*, Jun. 30, 2004 available at <http://www.msnbc.msn.com/id/5333895/> (last visited Mar. 27, 2007).

⁵⁶ See e.g., Lt Col Dean Bland, USA, *The Abu Ghraib Scandal: Impact on the Army Profession and the Intelligence Process*, U.S. Army War College Strategy Research Project, 18 Mar. 2005, available at <http://www.strategicstudiesinstitute.army.mil/pdf/files/ksil262.pdf> (last visited Apr. 6, 2007).

⁵⁷ Dinesh D'Souza, *Rethinking Abu Ghraib*, TOWNHALL.COM, Feb. 26, 2007, available at http://www.townhall.com/columnists/DineshDSouza/2007/02/26/rethinking_abu_ghraib (last visited Apr. 6, 2007)

⁵⁸ *Id.*

⁵⁹ *Id.*

-
- ⁶⁰ See FM 3-24, Chapter 7, note 2, *supra*.
- ⁶¹ See e.g., FM 3-24, para 3-137, *id*.
- ⁶² Stephen Ambrose, *AMERICANS AT WAR* (University Press of Mississippi, 1997), at 152.
- ⁶³ See Multi-National Force – Iraq, *Terrorist Tactics*, Operation Iraqi Freedom, Jan. 4, 2007, available at http://www.mnf-iraq.com/index.php?option=com_content&task=view&id=727&Itemid=44 (last visited Apr. 6, 2007).
- ⁶⁴ Ambrose, note 62, *supra*, at 154.
- ⁶⁵ See note 4, *supra*, and accompanying text.
- ⁶⁶ Thomas E. Ricks, *Gen. Petraeus Warns Against Using Torture*, WASHINGTON POST, May 11, 2007, at A03, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/05/10/AR2007051001963.html> (last visited May 19, 2007).
- ⁶⁷ Department of Defense, *DoD News Briefing with Assistant Secretary Casscells from the Pentagon*, May 4, 2007 (news transcript) available at <http://www.defenselink.mil/transcripts/transcript.aspx?transcriptid=3958> (last visited May 19, 2007). The report itself, MENTAL HEALTH ADVISORY TEAM (MHAT) IV, OPERATION IRAQI FREEDOM 05-07, FINAL REPORT, 17 Nov 2006, (Office of the Surgeon, Multi-National Force-Iraq and the Office of the Surgeon General, U.S. Army Medical Command) is available at http://www.armymedicine.army.mil/news/mhat/mhat_iv/mhat-iv.cfm (last visited May 19, 2007).
- ⁶⁸ Josh White, *Report on Haditha Condemns Marines*, WASHINGTON POST, Apr. 21, 2007, at 1, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/04/20/AR2007042002308.html> (last visited Apr. 21, 2007).
- ⁶⁹ *Id*.
- ⁷⁰ William Thomas Allison, *MILITARY JUSTICE IN VIETNAM: THE RULE OF LAW IN AMERICAN WAR* (University of Kansas Press, 2007), at 92 (italics added).
- ⁷¹ Ann Scott Tyson and Josh White, *Marines Killed Civilians, U.S. Says*, WASHINGTON POST, Apr. 15, 2007, at A01, available at <http://www.washingtonpost.com/wp-dyn/content/article/2007/04/14/AR2007041400603.html> (last visited Apr. 15, 2007).
- ⁷² *Id*.
- ⁷³ *Id*.
- ⁷⁴ Air Force members have a significantly lower rate of drug and alcohol abuse relative to the Army and Marine Corps. See Department of Defense, *SURVEY OF HEALTH RELATED BEHAVIORS AMONG ACTIVE DUTY MILITARY PERSONNEL*, 2005, at 70, 233, available at (last visited Apr. 18, 2007)
- ⁷⁵ Department of the Air Force, *AIR FORCE DOCTRINE DOCUMENT 1, Air Force Basic Doctrine*, 17 Nov. 2003, at 5 available at http://www.dtic.mil/doctrine/jel/service_pubs/afdd1.pdf (last visited Mar. 8, 2007).
- ⁷⁶ Benjamin Lambeth, *AIR POWER AGAINST TERROR: AMERICA'S CONDUCT OF OPERATION ENDURING FREEDOM* (Rand, 2005), at 324 available at http://www.rand.org/pubs/monographs/2006/RAND_MG166-1.pdf (last visited Apr. 6, 2007).