

AIR WAR COLLEGE

AIR UNIVERSITY

THE AIR FORCE IN THE LONG WAR:  
REORIENTING AIR FORCE CULTURE AND CAPABILITIES

by

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## **Biography**

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## **Introduction**

The United States Air Force stands near the trailing edge of a generational opportunity to reorient its focus. Since the end of the Cold War in the early 1990s, the USAF has made itself leaner and more expeditionary, and has taken advantage of technological developments that increased its effectiveness. With the United States on top of a unipolar world order through the late 1990s, it seemed that the primary roles for US military power would be intervention in regional conflicts among less-powerful states and provision of humanitarian aid. In contrast to the Cold War period, there was no single overarching threat for the Air Force to orient itself against. Due to the anticipation of the eventual emergence of a peer competitor, programmatic momentum, and cultural preferences, the USAF remained focused on major combat operations against symmetric adversaries during this period, even though there were harbingers that future threats may look quite different.

Since 2001, the US has been engaged in the ‘long war’ – the Global War on Terror. The threat posed by individuals and groups acting in the name of radical Islamic philosophies emerged from the wreckage of 9/11 as the next great challenge to US national interests and security. As the threat posed by Soviet-backed communism drove US national security planning for 50 years, the threat of radical terrorist groups must guide the next several decades. Prevailing in the Long War is no less critical than was defeating fascism or communism. The US military has devoted much serious thought to discerning the nature of the ‘long war’, and the emerging consensus is that Irregular Warfare will be predominant. The US Army and USMC published new Irregular Warfare doctrine in December 2006<sup>1</sup>, and the Air Force followed suit in August

2007<sup>2</sup>. While Air Force doctrine has changed and dialogue about Irregular Warfare has blossomed, the USAF has yet to redirect significant resources towards this area. The time is right for the USAF to assess the orientation of its force – still largely a Cold War legacy - and adapt its culture and capabilities to maximize its effectiveness, and even its relevancy, to the long war.

### **How We Got Here**

Conceived by the airpower theorists of the 1920s and gestated through the Second World War, the independent US Air Force was born at the beginning of the Cold War. The decades of the Cold War provided an ideal environment for the service to mature its concepts of strategic airpower. Service doctrine, force structure, and investment focused primarily on countering the Soviet threat, first by providing a nuclear deterrent capability; then by providing conventional capabilities to repel a Soviet advance in Europe. Short of nuclear war, planning revolved around the concept of a force-on-force confrontation with a peer competitor.

Though the Cold War ended in the 1990s, much of today's force structure and investment traces back to that era. All of the USAF's major combat aircraft – F-15, F-16, A-10, B-1, B-2, B-52, and even the F-22 – trace back to the 1980's military buildup or earlier. They reflect the US' reliance on technological superiority to overcome Soviet advantages in mass in a high-tempo, large-scale, symmetric conflict. Operation Desert Storm in 1991 showed that these systems worked, and worked well, in a counterforce environment outside of Europe. After Operation Desert Storm, many wrote on the revolutionary capability provided by the combination of stealth technology and precision guided munitions. Together, these two technologies appeared to finally give airpower the ability to deliver the decisive effects envisioned by the theorists – an antidote for prolonged, positional attrition warfare on the

ground<sup>3</sup>. While airpower alone was not sufficient to defeat Iraq in 1991, it set the conditions for the success of the 100-hour ground campaign that achieved the coalition's objectives.

The unquestionable success of Operation Desert Storm taught some incomplete or inaccurate lessons. The relative contribution of airpower to the joint campaign must be viewed in the context of the relatively limited objectives of the coalition. The stated objective of Operation Desert Storm was to expel Iraqi forces from Kuwait and return the legitimate government of Kuwait to power<sup>4</sup>. There were very few 'stability and reconstruction' requirements for coalition forces involved in Operation Desert Storm – the Kuwaiti people and government were able to pick up and move on with little need for the US to provide security, restore basic services, or establish rule of law or good governance. Thus, while Operation Desert Storm showed that airpower excelled as a 'kick-down-the-door' force for gaining entry into a territory defended by conventional military forces, it may not have been a good model for a long war that involves significant internal resistance.

Operation Allied Force – the air-centric campaign to coerce Slobodan Milosevic to curtail his ethnic cleansing campaign in Kosovo – reinforced the idea that airpower alone could prevail in a conflict. Again, the objectives were limited and the circumstances were right for airpower to influence Milosevic's actions. Some of the difficulties encountered in targeting dispersed Yugoslavian military and Serbian paramilitary forces, though, were harbingers for the kind of conflict to be fought again in the long war.

The early stages of Operation Enduring Freedom and Operation Iraqi Freedom again showed how good US airpower is at 'kicking down the door' and preparing the battlespace for rapid success on the ground. The Taliban government of Afghanistan abdicated its rule after 2 months of attack by local forces augmented by American SOF and airpower. President Bush

declared that Major Combat Operations in Iraqi Freedom had ended on 1 May 2003 – after just 43 days of assault by coalition air and ground forces<sup>5</sup>. Events that followed, however, have showed that winning the ‘peace’ – achieving the political objectives of stable, secure, and friendly regimes in Afghanistan and Iraq<sup>6</sup> – requires more than prevailing during major combat operations.

While the Afghan and Iraqi campaigns are the highest-visibility operations in the long war, they represent only one portion of the spectrum of campaigns in the GWOT. Other fights are much more irregular in nature. In Africa, the Middle East, and the Far East, the US is taking the indirect approach and working ‘by, with, and through’ partner nations to engage insurgents that support Al Qaeda’s objectives. This approach – building partner nations’ capacity to govern their territory well and resist extremist influences – has the best long-term likelihood of marginalizing Al Qaeda’s ideology, and will be more of a factor in the long war than major combat operations.

This paper asserts that it is imperative the USAF balance its focus and force structure the ‘Kick Down The Door Air Force’ – optimized for high-tempo combat against a symmetric force, and the ‘Irregular Warfare Air Force’ – optimized for extended conflict fought ‘by, with, and through’ partner nations. It must maintain its capability to deter rivals and set the conditions for rapid victory in symmetric warfare, while directly addressing the challenging needs of fighting a prolonged, irregular war against an asymmetric, non-state adversary. The wholesale change in posture advocated by current authors such as Hammes<sup>7</sup> is neither necessary nor well-advised. However, the USAF needs to recognize, and resource, Irregular Warfare as a unique mission set that is different but no less important than major combat operations. To this point in its history, though, the USAF has largely focused on nuclear deterrence and major combat operations, and

adapted these forces to fight insurgencies when necessary. This approach has proved adequately effective to this point, but it is neither the most effective, efficient, or relevant model for the current ‘long war’ situation.

Equally as important as having the right hardware for Irregular Warfare – perhaps even more so, since hardware can be adapted - is having the right mindset, and this will require a change in Air Force culture. The Air Force needs to be as comfortable operating in a supporting role during Irregular Warfare as it is operating in an independent, or supported, role during major combat operations. And, it needs to be able to shift seamlessly from a supported to a supporting role, as recent operations have shown that success in major combat operations is a necessary but not sufficient condition for victory in long war campaigns. Current Air Force doctrine and culture, however, clearly favor independent operations. This bias traces back to the early airpower theorists. Until the Air Force adopts a ‘complete air power theory’ – one that recognizes both the strengths and limitations of airpower in deterrence and major combat operations, and embraces the key role of providing direct support to ground forces – it will struggle with Irregular Warfare.

The following section assesses the nature of the long war, identifies the four types of campaigns that it will encompass, and shows that counterinsurgency is the most likely scenario the US will face in the long war. Subsequent sections discuss how shifting its balance more towards irregular warfare will necessitate change in AF culture and capabilities. The paper concludes with a proposed blueprint for a balanced USAF force structure.

## **The Nature of the Long War**

“The first, the supreme, the most far-reaching act of judgment that the statesman and commander have to make is to establish by that test the kind of war on which they are embarking; neither mistaking it for, nor trying to turn it into, something that is alien to its nature.” - Clausewitz<sup>8</sup>

“Thus it is said that one who knows the enemy and knows himself will not be endangered in a hundred engagements.” - Sun-Tsu<sup>9</sup>

The first words of the 2006 Quadrennial Defense Review Report bluntly state the challenge facing the United States military: “The United States is a nation engaged in what will be a long war”<sup>10</sup>. At the time of this writing, the war is into its 7<sup>th</sup> year. No endpoint is on the horizon; indeed, the long war – the Global War on Terrorism – may last for generations<sup>11</sup>. It is late, but not too late, then, to follow Clausewitz’ advice and consider the nature of the war. This section assesses the nature and objectives of the enemy, identifies the four types of campaigns the United States will fight in the long war, and provides some thoughts on the key characteristics of these campaigns and how they differ from the conventional warfare that the USAF has organized, trained, and equipped to fight since its founding.

### **The Name and Nature of the Challenge**

Perhaps the best name for the long war would be the ‘War on Global Terror’, or, if political correctness could be dispensed with entirely, the ‘War on the Global Islamic Insurgency’. It is important to understand that the war is not against terrorism, but against those who challenge US interests through the use of terrorism. While many groups use terrorist methods for various purposes, it was the 9/11 terrorist attacks that drove the American response. These attacks were the work of the Al Qaeda network of Islamic extremists. Al Qaeda has declared itself to be at war with America<sup>12</sup> and shown it has the will and ability to attack US interests and allies across the world. The Al Qaeda network, with all its branches and affiliated

movements, is thus the primary adversary in the ‘Long War’. Al Qaeda and its affiliates, as sub-state, transnational organizations, use asymmetric tactics such as terrorism because they lack the resources to attempt a symmetric military confrontation; however, their overarching aim of remaking the world order qualifies them as insurgents.<sup>13</sup>

The objectives of Al Qaeda are global in nature and in direct conflict with US interests. Al Qaeda has published a 2-phase strategy for “global jihad against the West.”<sup>14</sup> The first phase culminates with ousting the secular governments in traditional Islamic lands – regimes that it views as “apostate”<sup>15</sup> - and replacing them with pure theocracies to re-install an Islamic Caliphate (a unique form of political-religious rule first practiced by the successor to the prophet Muhammad<sup>16</sup>) from Spain and North Africa to Indonesia. A pre-condition for restoring the Caliphate, however, is curtailing US influence in the Middle East, as Al Qaeda views US support as the key force preserving the existing, ‘corrupt’ governments<sup>17</sup>. The second phase is to “use this Caliphate as a launchpad for jihad against the West, in order to remake the world order with the Muslim world in a dominant position.”<sup>18</sup> In this quest, Al Qaeda is ideologically driven by a deeply-held belief in its radical interpretation of Islam. It believes it is doing Allah’s will to restore Islamic rule, spread its faith, and eliminate the corrupting influences of Judeo-Christianity and democracy.<sup>19</sup>

To accomplish its strategic goals, Al Qaeda has assembled a global insurgent network. There are active Islamist insurgent groups throughout the territory of the Caliphate: Algeria, Morocco, Iraq, Jordan, Egypt, Saudi Arabia, Yemen, Turkey, Lebanon, Palestine, Uzbekistan, Chechnya, Georgia, Azerbaijan, Pakistan, Afghanistan, Bangladesh, Philippines, Thailand, and Indonesia.<sup>20</sup> Al Qaeda has elevated the vision of these insurgencies, most of which have been in existence for longer than Al Qaeda, from their local grievances and nationalistic causes and

linked them to a global cause. While Al Qaeda focuses on the ‘far enemy’ – the US, these local groups will challenge the ‘near enemies’ – the secular, apostate regimes in Islamic lands. In this way, these local groups will be the ‘foot soldiers’ that set the conditions for the restoration of the Caliphate. Al Qaeda pulls these groups under a broader ideological banner, links them through “globalized communications, finances, and technology,”<sup>21</sup> and in so doing makes the whole greater than the sum of the parts.

The Global Islamic Insurgency presents the US with no less of an ideologically-committed or threatening enemy than did Soviet communism during the Cold War. Where the communists held that the party should dominate all “forms of collective human activity or association,”<sup>22</sup> the insurgents believe their form of Islam should rule all forms of personal and state conduct. Al Qaeda’s strategy of forcing the US out of the Middle East (Saudi Arabia in particular), restoring the Islamic Caliphate in what it considers traditional Islamic lands, then advancing it throughout the world, mirrors the Soviet grand strategy of establishing and maintaining their power base in Russia, building a web of communist satellite states on its borders, and eventually extending socialism and Soviet control to the rest of the world.<sup>23</sup> The Wahabbi form of Islam preached by the radical Islamists cannot be reconciled with American (or any Western) values; it is diametrically opposed to the enduring principles of “freedom, democracy, and human dignity”<sup>24</sup> that guide US policy. President Bush highlighted many of the similarities of the Global Islamic Insurgency to communism in a speech on 6 Oct 2005; like communism, the insurgency is: led by an elite, self-appointed vanguard, totalitarian, dismissive of freedom, and “utterly committed.”<sup>25</sup> Both share a very different perspective on the timeline to victory than the US; where the Soviets did not seek a quick victory over the US, Al Qaeda is committed to a 100-year campaign to rebuild the world order.<sup>26</sup>

Do Al Qaeda and its network really pose a threat to America comparable to Soviet communism? Al Qaeda does not have the manpower, industrial resources, or military might that the Soviet Union did. But it can threaten vital American interests even if it cannot yet directly threaten American sovereignty. Al Qaeda will use terrorism to coerce the American people and government, and irregular warfare/insurgency to start rebuilding the world order in accordance with its vision. Warfare of this form has given weaker powers a means to prevail over superpowers.<sup>27</sup> And, Al Qaeda possesses or seeks weapons of mass destruction, capable of catastrophic effects.<sup>28</sup> A WMD-armed Al Qaeda may actually be harder to deter than the USSR since it is difficult to apply strategies like mutually-assured destruction to a non-state entity.<sup>29</sup>

America is facing an enemy with global aspirations that is completely – perhaps fanatically – committed to its cause and sees America as its primary enemy. The US faced such a challenge in the recent past, during the Cold War. During that era, countering the Soviet threat was unquestionably the primary focus of US defense policy and planning. It follows, then, that countering the threat of the Global Islamic Insurgency should be the primary focus for the US military today. Later sections in this paper will discuss how the US Air Force should adapt to match this, and future, generations' main threat.

#### **Four Types of Campaigns in the Long War**

With the enemy and its objectives in the long war so defined, what are the types of campaigns the US can expect to fight? There are four different types of campaigns in the long war: first, homeland defense; second, covert campaigns in non-cooperative nations; third, regime change in nations that sponsor and provide sanctuary for the global insurgents, and fourth, assisting friendly nations in defeating insurgents within their borders. Analysis of these four types of campaigns shows that irregular warfare – either conducting it or supporting others

who are - will be the predominant framework in which US military power is employed in the long war.

Defense of the homeland is a basic responsibility of the US military. Al Qaeda will seek to conduct additional terrorist attacks in the US to attack the political will of the US population by increasing the cost of current US policies in the Middle East.<sup>30</sup> Primary Air Force roles in homeland defense include providing defense against airborne threats and mobility for consequence management forces. The Air Force role in homeland security is a valid subject for a separate study and will not be discussed in this paper.

The second type of campaign consists of covert actions outside the borders of the US, without the knowledge or overt participation by the affected state. These actions may be kinetic or non-kinetic – ranging from surveillance and information attack to raids and strikes on insurgent and terrorist leaders and activities. Due to the sensitivity of operations of this type, this type of campaign will also be out of the scope of this paper.

The third campaign type – implementing regime change in a state that harbors or supplies terrorists & insurgents, particularly with WMD – closely resembles both the Iraq and Afghanistan campaigns. In the case of Afghanistan, the Taliban government overtly provided sanctuary to Osama Bin Laden and Al Qaeda's base of operations. In Iraq, the US felt the risk of Saddam Hussein's weapons of mass destruction<sup>31</sup> reaching Islamic insurgents and terrorists warranted preemptive action. In each case, the campaign was characterized by a quick initial phase that ousted the regimes and provided access to the US and its allies, followed by a protracted effort to instill a new regime and restore good governance.

Airpower plays a key role in the initial phase of this type of campaign. Airpower sets the conditions for rapid victory on the ground when the mission calls for occupation of territory.

Both wars against Iraq began with air campaigns against the regime's strategic centers of gravity and its fielded forces. The air campaigns facilitated the rapid successes by the ground forces that followed. The success of the relatively weak and lightly-armed Northern Alliance, augmented by US SOF and airpower, against the Taliban regime in Afghanistan validates the argument that airpower now dominates the air-ground relationship during the major combat phase, enabling relatively small ground forces to defeat significantly more powerful opponents.<sup>32</sup> If this assertion is true, then the Air Force has become the supported force during major combat operations.

The major combat operations portion of the campaigns in Iraq and Afghanistan used traditional airpower capabilities that the USAF has invested heavily in: low-observable platforms that could penetrate defenses, multi-role fighter/attack aircraft that could guarantee air superiority and attack targets with speed and precision, ISR platforms that could pinpoint the enemy's order of battle, transport and tanker aircraft that could move masses of material to the right places at the right time, and C4I platforms and processes to orchestrate it all. This effective and efficient 'kick-down-the-door' air force would have a key role in gaining access and setting the conditions for rapid victory on the ground should the US decide to seek regime change elsewhere. The remaining states in the 'Axis of Evil' have invested much more heavily in anti-access technologies than either Iraq or Afghanistan, making continued investment in the 'kick-down-the-door' air force essential for future success in this type of campaign.

However, success in the overall campaign – achieving the political objectives defined as conditions for termination – also requires success in the protracted, lower-intensity type of fight that has developed in both Afghanistan and Iraq since major combat operations ended. These later phases have proved more challenging to the US military than the initial phases: only 138

US personnel died before President Bush declared the end of major combat operations in Iraq, while at least 3,824 have died subsequently.<sup>33</sup> These campaigns showed that regime change isn't likely to be consolidated without continuing resistance in the form of insurgency.<sup>34</sup> Thus, what comes after the major combat operations has an important – probably decisive – role in achieving the political objective of the campaign.

While airpower arguably has become the supported force during major combat operations, it definitely plays a supporting role during an insurgency. The nature of the current phase of the campaigns in Iraq and Afghanistan clearly falls within the DoD definition of Irregular Warfare:

A violent struggle among state and non-state actors for legitimacy and influence over the relevant populations. IW favors indirect and asymmetric approaches, though it may employ the full range of military and other capabilities in order to erode an adversary's power, influence, and will.<sup>35</sup>

In both nations, the US is seeking to establish the legitimacy of new democratic governments that are challenged by a variety of domestic and foreign-influenced forces. The role of the military in general, and airpower specifically, in this phase is clearly different than in the initial phases. Victory against an insurgency requires more than military force.<sup>36</sup> The military contribution to victory requires boots on the ground, outside of garrisons and in contact with the population.<sup>37</sup> The employment of airpower is different in this phase. During major combat operations, airpower operates independently or in varying degrees of coordination with surface forces. In an insurgency, airpower often operates in direct support of ground forces.<sup>38</sup> While subsequent sections will detail airpower's roles and capabilities in counterinsurgency, it is obvious that the forces needed for counterinsurgency are not identical to those used in the major combat operations phase. The B-2, for instance, has not flown over Iraq or Afghanistan since the first days of each conflict, and there are no current plans to deploy the F-22 to either campaign.

For this third type of campaign – implementing regime change – in the long war, airpower must transition from being the supported force to being a supporting force. It is almost like two different air forces are required – one capable of high-tech, high-intensity combat to kick down the door, and another capable of prolonged employment in support of ground-centric nation-building efforts. The US Air Force has focused on building the former and adapting those forces to the latter.<sup>39</sup> This has proved adequate but not ideal.<sup>40</sup> In view of the growing role of counterinsurgency – as a follow on to major combat operations in the third type of campaign, or as the primary form of engagement in the fourth type of campaign – the Air Force ought to invest in some capabilities specifically oriented towards this type of warfare.

The fourth type of campaign in the long war involves working ‘by, with, and through’ partner nations to help them defeat regional Islamic insurgencies. This campaign attacks a key portion of Al Qaeda’s strategy, and falls squarely in the realm of counterinsurgency. As discussed previously, Al Qaeda seeks to use local insurgencies to remove secular or moderate governments in traditional Islamic lands as it seeks to restore the Caliphate. Many of these regimes are friendly, or at least not hostile, towards the US, giving the US the opportunity to work by, with and through these threatened governments to defeat the insurgents. This type of engagement falls inside the definition of irregular warfare, specifically in the subcategory of Foreign Internal Defense.<sup>41</sup> Often referred to as building partnership capacity,<sup>42</sup> the US fights this type of campaign indirectly, by providing training, equipment, and support. Support provided by the US military may include logistics, intelligence, and limited direct involvement by US combat forces.<sup>43</sup> Ideally, military support is just one component of an engagement that reaches across the instruments of power, since insurgencies are rarely beaten by military force alone and such engagement has the added benefit of moving the threatened government closer to

the US and thus farther from the influences of radical Islam. This type of campaign puts the threatened nation at the forefront of solving its own problems, and thus avoids the charges of imperialism, empire-building, and resource-pillaging that arise when the US takes the lead.

Current and recent US activities in the Philippines (Operation Enduring Freedom – Philippines, OEF-P), the Horn of Africa (OEF-HOA), and Trans-Sahara Africa (OEF-TS)<sup>44</sup> are examples of this fourth type of campaign in the long war. While not the subject of the same publicity as the major campaigns in Iraq and Afghanistan, these efforts are proving very successful.<sup>45</sup> Within the US Air Force, one squadron – the 6<sup>th</sup> Special Operations Squadron – has primary responsibility for conducting the Aviation Foreign Internal Defense mission. Since 9/11, the list of countries the 6<sup>th</sup> SOS has conducted missions in includes Afghanistan, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Uzbekistan, Yemen, the Philippines, Thailand, Azerbaijan, and Georgia,<sup>46</sup> all countries that have active Islamic insurgencies. Thus, this fourth type of campaign – assisting friendly nations to overcome Islamic insurgencies – is very real and active, and represents the indirect approach to fighting the long war that is favored by the 2006 Quadrennial Defense Review.<sup>47</sup>

Joint Doctrine for operations planning requires planners to assess the most likely and most dangerous enemy courses of action.<sup>48</sup> The preceding discussion of four types of campaigns indicates that irregular warfare – in particular, counterinsurgency --is the most likely form of conflict the US will fight in the long war. Homeland security – primarily via counterterrorism – will remain a continuous activity. Covert operations will encompass a small and narrowly-focused portion of the long war. The two primary forms the long war will take are the third and fourth types of campaigns – instituting regime change and building partner capacity to prevail over local insurgencies that support Al Qaeda’s global aims.

Major combat operations feature only in the first phase of the third type of campaign, and it can be argued that instances of this type of campaign will be few and far-between – both because US policy and military capability deters states from harboring and supporting terrorism,<sup>49</sup> and because of the so-called “Iraq Syndrome”<sup>50</sup> resulting from the unforeseen cost and difficulty in consolidating the victory there. And, even if and when regime change is attempted, the preceding discussion suggests that insurgency will follow major combat operations. To achieve the political objective, victory in counterinsurgency will be as important as victory in major combat operations, even for a regime-change campaign.

The point of the discussion above is to substantiate the 2006 QDR’s assertion that irregular warfare is “the dominant form of warfare confronting the United States, its allies, and its partners...”<sup>51</sup> Air Force doctrine asserts that “IW is not a lesser-included form of traditional warfare.”<sup>52</sup> However, the Air Force has not resourced Irregular Warfare capabilities on par with those that are focused on major combat operations. Organizing, training, and equipping the Air Force of the future for irregular warfare is not simply ‘preparing to fight the last (still current) war’, as characterized by a recent AWC guest speaker and senior AF leader. It is high time the AF raise irregular warfare capabilities to the same level as its capabilities for major combat operations. After a brief discussion of some of the characteristics of irregular warfare and their unique impact on airpower, subsequent sections will assess changes needed to AF culture and capability to achieve the right balance between irregular warfare and ‘traditional’ airpower capabilities.

### **Counterinsurgency’s Implications for Airpower**

The new US Army Field Manual 3-24, *Counterinsurgency*, and the new Air Force Doctrine Document 2-3, *Irregular Warfare*, largely share a common understanding of the

challenges involved in using military power against an insurgency. Several key characteristics differentiate irregular warfare from traditional, or conventional (i.e. force-on-force) warfare and affect the role of airpower:

- Counterinsurgency is primarily a political struggle and thus requires coordinated application of all implements of national power; it is a joint and interagency effort and military force alone cannot succeed in counterinsurgency (FM 3-24 pg 1-1, AFDD 2-3 pg 4).
- Legitimacy and influence among the population is the key objective of counterinsurgency (FM 3-24 pg 1-21, AFDD 2-3 pg 10).
- Intelligence drives operations, and a key adversary strength is the ability to hide among the population (FM 3-24 pg 1-23, AFDD 2-3 pgs 8 & 11).
- Unity of effort is essential to success (FM 3-24 pg 1-22, AFDD 2-3 pg 8).
- Use of force should be limited as much as possible; when force is used, it must be applied precisely and discriminately (FM 3-24 pg 1-25 - 27, AFDD 2-3 pg 44).
- Information operations are critical to both the insurgent and the counterinsurgent (FM 3-24 pg 1-27, AFDD 2-3 pg 36).
- Counterinsurgency demands a long-term commitment (FM3-24 pg 1-24, AFDD 2-3 pg 48).

Together, these principles imply that the primary employment of airpower in irregular warfare may not be the use of kinetic capabilities (putting bombs on target) that has historically been the Air Force's prime competency and the role emphasized by airpower theorists.

A foundational strength of airpower is its ability to strike directly at the adversary's strategic center of gravity.<sup>53</sup> While this strength is of key importance in traditional, conventional warfare, it doesn't carry through to the current construct of irregular warfare. A depiction of Clausewitz' "paradoxical trinity"<sup>54</sup> of the government, the military, and the people has been widely used to attempt to illustrate the differences in centers of gravity between conventional and irregular warfare.

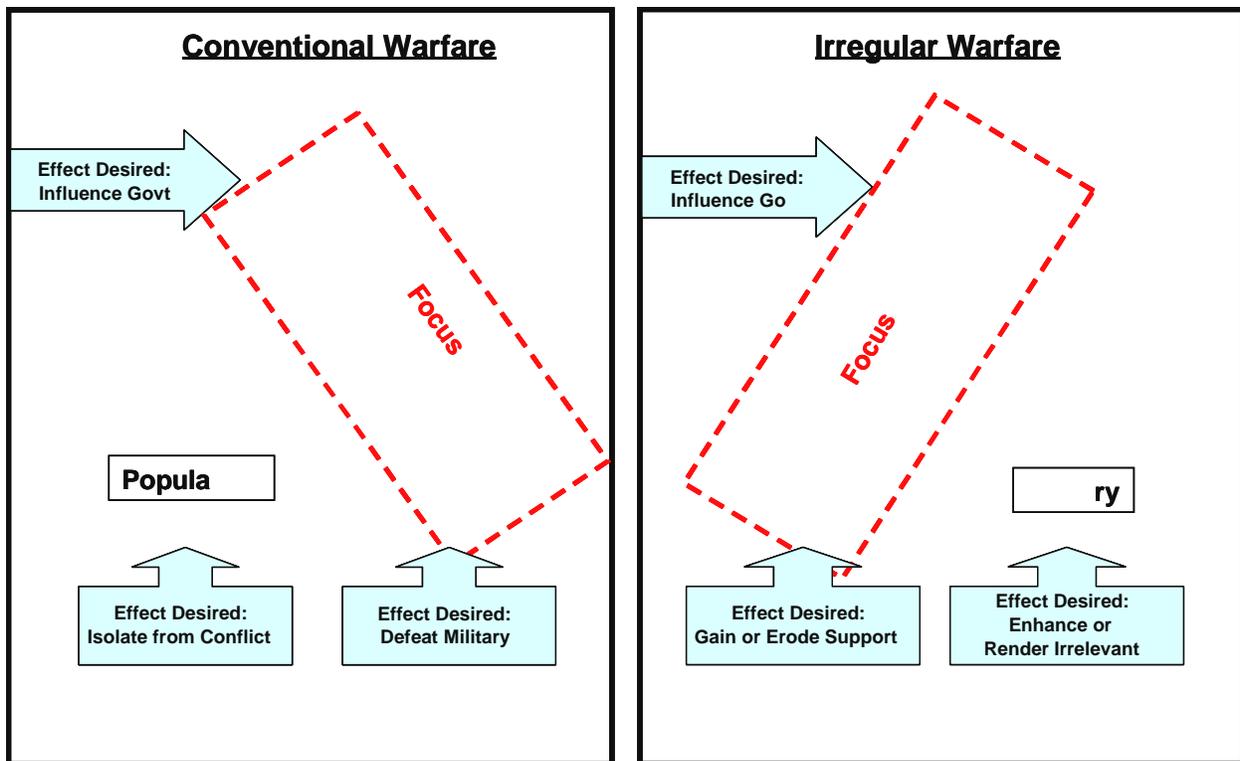


Figure 1: Clausewitzian Trinity for conventional and irregular warfare (AFDD 2-3)

The diagrams in Figure 1 show that conventional, symmetric warfare focuses on defeating the enemy’s military to influence the government, while asymmetric, irregular warfare focuses on gaining legitimacy or power over the population to influence the government. This depiction may falsely imply that the population plays little role in conventional warfare and the military plays little role in irregular warfare, and does not accurately capture the dynamic interaction between the combatants.<sup>55</sup> More importantly, it doesn’t reflect a key feature of irregular warfare – that the combatants are struggling for control over the same center of gravity.<sup>56</sup>

A more accurate representation of the dynamics of each type of conflict, then, would require two triangles, one for each combatant as depicted in figure 2<sup>57</sup>. In conventional warfare, the triangles would not overlap. Each combatant stands with its own leadership, forces, and population, allowing any leg of an adversaries’ triangle to be targeted without having a

reciprocal effect on one's own centers of gravity. However, in counterinsurgency, the triangles overlap as both the government and the insurgent share a center of gravity - legitimacy and influence over the same population. This removes the option of kinetic attack against the insurgent's key center of gravity – support among the population – from consideration. Even limited collateral damage among the population damages the government's legitimacy and drives support to the insurgent. Thus, the direct application of combat airpower, and military power in general, is limited to the remaining two legs of the insurgent's trinity – leadership and insurgent forces. As these elements are often distributed and nearly indistinguishable from the general population, the emphasis of military power must shift towards patient intelligence gathering, information operations, and other activities to build legitimacy among the population, and extremely rapid, precise, and discriminate action against insurgent targets when they are discovered.

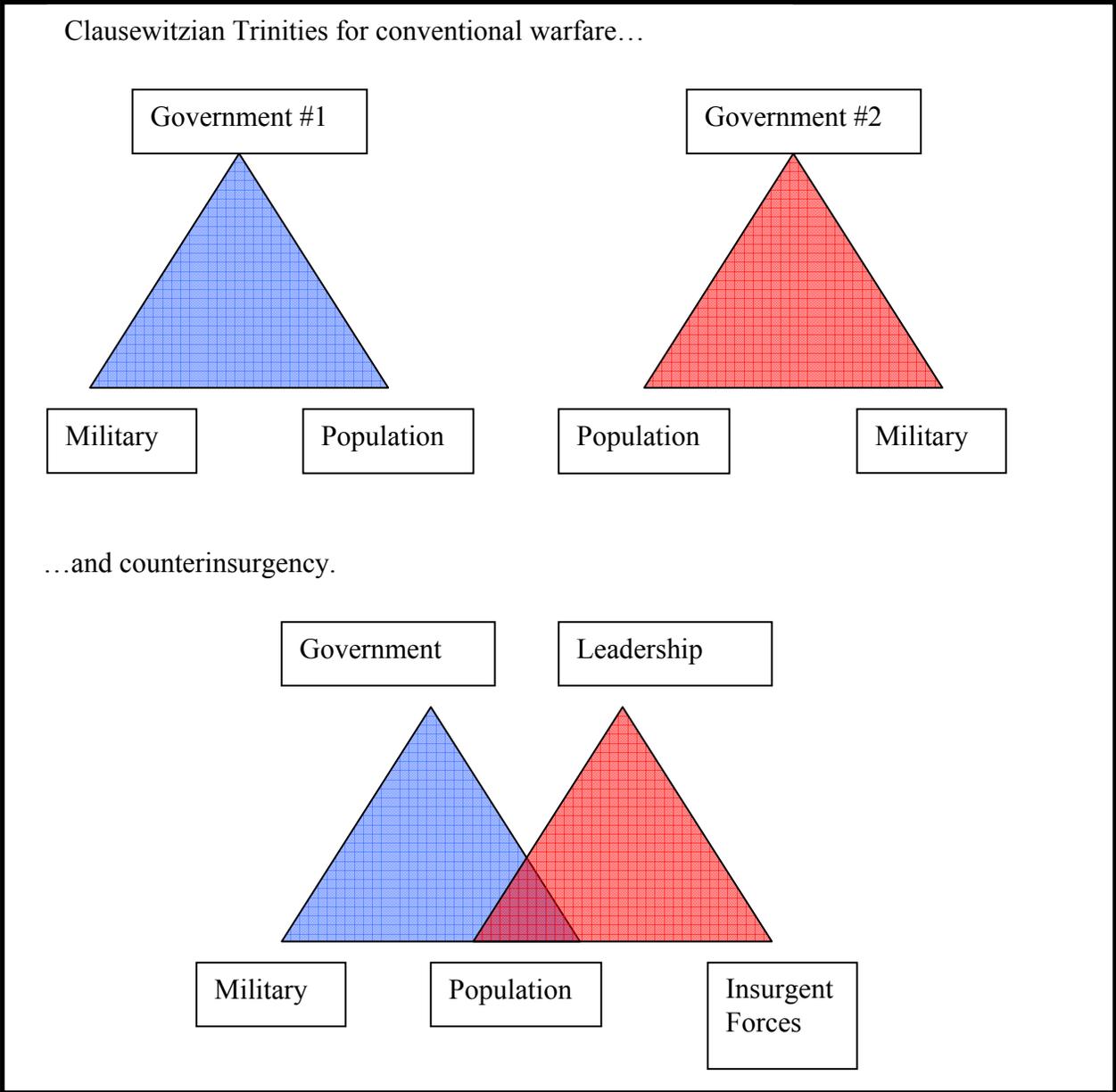


Figure 2: Revised Clausewitzian Trinities (author)

America is fighting a war against a Global Islamic Insurgency. The nation’s enemy has global aspirations that affect America’s interests, and is utterly committed to a cause that runs counter to America’s principles. It poses no less significant of a threat to the US than did Soviet communism during the Cold War. The long war will be fought primarily through irregular

means, particularly counterinsurgency and foreign internal defense, though traditional conventional military capabilities will also be required. The nature of this war is fundamentally and profoundly different than the high-tempo, symmetric combat that America mastered during the Cold War era, and utilizes a different set of airpower's capabilities. In the long war, airpower will find itself in a supporting role much more often than in the supported role. As the US Air Force moves forward in this new era, it needs to elevate irregular warfare and counterinsurgency capabilities to the same level as its traditional capabilities for conventional warfare, build a balanced force, and tailor its culture and capabilities to match the threat of the current generation.

### **The Long War and US Air Force Culture**

The preceding sections have shown that, though the challenge of the long war is as ideologically-driven and threatening as Soviet communism, the Long War will have a fundamentally different character than the Cold War. The US Air Force matured as a service during the Cold War, and its culture reflects this. While the primacy of the heavy bomber may no longer prevail in USAF culture, the USAF sees itself as an independent arm capable of delivering decisive and, ideally, sufficient effects to secure victory.<sup>58</sup> Shifting focus to the GWOT Long War will require a cultural and theoretical sea change within the USAF.

The genesis of the concept of an independent Air Force and its decisive role trace back to the early airpower theorists of the 1920s. The evolution of airpower theory can be traced through four main stages defined by their primary spokesmen and concepts: Douhet's theory of terror bombing, Mitchell and the Air Corps Tactical School's precision bombing/industrial web theory, Warden's ring theory, and Pape's coercive airpower theory. Each of these theories is based on an assumption of symmetric, state-on-state warfare, and lacks more than tangential applicability to counterinsurgency.

Giulio Douhet's theory espoused in his 1921 book *The Command of the Air* was based on his experience as an artillery officer in WWI: he envisioned strategic bombardment as a rapid and decisive alternative to the drawn-out, positional, attrition warfare of that conflict. His basic premise was that bombardment of the enemy's population centers would induce panic and chaos that would break the enemy's will to resist.<sup>59</sup> He proposed indiscriminate bombing of cities, to cause as much destruction as possible.<sup>60</sup> Clearly, this theory does not fit current counterinsurgency doctrine. If legitimacy among the people is the objective and the support of the people is the center of gravity, then indiscriminate bombing of the population will work counter to the desired ends. Recent experience in Iraq and Afghanistan has shown that even relatively limited collateral damage among noncombatants has had the effect of pushing popular support towards the insurgents or at least damaging the coalition's legitimacy with the population.<sup>61</sup> Thus, the application of airpower theory envisioned by Douhet is not valid for the bulk of the long war campaigns.<sup>62</sup>

Douhet's theory was paralleled by Billy Mitchell in the 1920s and refined by the Air Corps Tactical School (ACTS) in the US in the 1930s. The ACTS also believed in the decisiveness of strategic bombardment, but focused on a different target set. Instead of defeating the enemy's will, ACTS focused on defeating the enemy's ability to resist by crippling its industrial infrastructure. By identifying and destroying (via strategic bombardment) a few key nodes in the industrial web, the enemy would lose its will and ability to support its forces and would have to capitulate.<sup>63</sup> This theory does not apply directly to counterinsurgency, as insurgents fight a low-tech war and, as non-state entities, are unlikely to have the industrial infrastructure envisioned by this theory. And, even if insurgents relied on domestic industrial production, attacking these targets may have second-order effects that are counter to the goals of

counterinsurgency. Bombing industrial plants may put people out of work, increasing the recruiting pool for the insurgents. Transportation and energy infrastructure are used by the population and insurgents alike. Thus, the industrial web theory of strategic bombardment generally does not apply to counterinsurgency.<sup>64</sup>

Warden's concentric ring theory developed in time for the first Gulf War. It latched onto the revolutionary combination of stealth and precision guided munitions. With stealth, strike aircraft really could get through. With PGMs, targets could be hit with the accuracy envisioned by the ACTS. Given this kind of capability, airpower might achieve the desired decisive effect. Warden classified target types into five concentric rings. From outer to inner, they were: fielded forces, population, infrastructure, organic essentials, and leadership. In Warden's view, while all 5 rings could and should be attacked in parallel with airpower, airpower could produce its most decisive effects against the innermost ring – leadership.<sup>65</sup>

While Warden's principles worked well for the symmetric, state-on-state conflict of the first Gulf War, they do not apply as well to the asymmetric long war. In an insurgency, insurgent forces do not frequently mass and present a target for attack; when they do mass it is at the time and place of their choosing. The population is not a target for attack, since the counterinsurgent is competing with the insurgent for legitimacy and support among the populace and kinetic attack would be counterproductive. Infrastructure is used by the populace, the counterinsurgent, and the insurgents alike, so attacks on it may cause more harm than good. Organic essentials – water & power distribution, for example – must be kept intact to meet the needs of the people.

Attacking the leadership of the insurgency retains some merit but in the long war it is not a 'panacea' target that is sufficient and decisive by itself. In Iraq and Afghanistan, for example,

much effort has been geared at targeting insurgent leaders. It was a huge success for airpower when the leader of Al Qaeda in Iraq, al Zarqawi, was killed in an airstrike in Jun 2006. However, his death did not result in a widespread reduction in violence as new leaders rose to take his place.<sup>66</sup> Putting too much stock in attacking the leaders of an insurgent group may lead to a new war of attrition of leaders – the new leaders who emerge may not be as skilled, powerful, or charismatic as the ones they replace, resulting in a slow overall diminishing of insurgent capability and unity – but not immediately decisive effects.<sup>67</sup>

Coercion is the most recent airpower theory to gain traction in the USAF. The premise here is that airpower can be used to increase the pain or decrease the rewards of non-compliance.<sup>68</sup> Proponents of this theory point to the success of the Operation ALLIED FORCE air campaign on stopping Milosevic's misbehavior in the former Yugoslavia. It may have a role in the GWOT long war as it can be applied to external sponsors or terrorism and insurgency. For example, bombing key targets in Libya in 1986 seemed to coerce Qadaffy to quell his rhetoric and support of terrorism for a period.<sup>69</sup> On the other hand, coercive airpower has little application to insurgents themselves, as using force against the populace to diminish support for the insurgent goes against winning the hearts and minds.

So what does all this mean? The US Air Force has built its identity around theories that support the premise that the Air Force can operate independently to achieve strategically decisive effects.<sup>70</sup> These theories do not apply well to the case of the long war. They are geared for symmetric, state-on-state warfare and not for asymmetric warfare fought by non-state/transnational actors. This does not mean that the USAF does not have a key role in the long war. But to find its relevance, the AF needs to realize that it will be operating in a supporting

role and its most valuable contributions will often be those that directly support the forces on the ground, not those it conducts independently.

Such a revelation would be a fundamental change for the USAF. The USAF has spent 60 years justifying its worth as an independent service and arguing, theoretically at least, that it is possible to win without boots on the ground. In counterinsurgency, though, airpower adds the most value as the ride to the fight, the eyes in the sky, and the responsive fire support for the boots on the ground. This disconnect is apparent in recent issues surrounding the Joint Cargo Aircraft and executive agency for UAS. Why does the US Army fight so hard to retain its own capability for theater airlift and organic ISR? It could be that the Army does not trust the AF to make support to surface forces its top priority. However, such a commitment, and the associated change of mindset, is exactly what are needed to fight the long war.

While every airman is unquestionably committed to helping our soldier brethren on the ground in the heat of a battle, we tend to talk past each other when we talk theory. The Air Force seems reluctant to give the Army the assurance that air support will be there when they need it, not off doing something independent that the airman in charge of airpower decides is more important. Warden's ring theory favors bypassing attacks on fielded forces – targets the destruction of which would immediately benefit the ground forces – in favor of attacking pretty much anything else. Advocates of coercive airpower theory tout its ability to achieve the desired effect even without the presence of friendly ground forces in the fight. This is not to say those theories don't have value, but to point out how they can come across as belittling the need for airpower to support ground forces. Even the authors of the recent revision of AFDD 2-3, *Irregular Warfare*, fall into the trap. While acknowledging that “often, the (airpower) effects desired in COIN will directly support ground operations,”<sup>71</sup> the document goes on to leave the

door open for independent air operations and speculates that the Air Force may sometimes be the preferred force to use as airpower can produce effects without a large presence on the ground.<sup>72</sup> Such a statement must imply that US airpower would be employed in support of partner nation ground forces, for to suggest that airpower could defeat an insurgency without boots on the ground flies in the face of the vast majority of contemporary counterinsurgency experience and theory.

A recent article by an Air Force general officer in the *Air & Space Power Journal* further illustrates the depth of the disconnect between the Air Force and the Army. In one paragraph, the author criticizes an Army battalion commander for failing to include air in his operational planning. In another, he upholds the AF principle that airpower should not be parceled out to support individual units but kept in an on-call status, able to support several units.<sup>73</sup> How is an Army commander supposed to write air into his plan if he can't be sure the air assets won't be tasked somewhere else when he needs them? Particularly in a counterinsurgency fight, where the tempo of demands on AF assets is not the same as during major combat operations, the AF needs to overcome its aversion to using air assets in direct support to ground units.

Air Force Special Operations Command provides a valid model for the airman's culture needed to succeed in Irregular Warfare. AFSOC exists to provide mobility, intelligence, and fire support for joint SOF surface forces.<sup>74</sup> It has few aspirations or capabilities for fighting the war on its own. Instead of holding ground elements at arm's length, AFSOC embraces air-surface integration and deploys highly-trained battlefield airmen with surface forces to orchestrate air support. AFSOC forces are written into the SOF scheme of maneuver from day one of planning for an operation, and are there when needed. As a critical element of the joint SOF team, AFSOC has no problem with its identity as primarily a supporting force.

This is not to suggest that the entire AF culture should mimic AFSOC's culture. There is a place for achieving strategic effects independently, just not in counterinsurgency. At 60 years old, the Air Force has established a stellar reputation ('no one comes close') that secures its independence – it does not have to argue the need for an independent Air Force at every opportunity anymore. The AF should also be mature enough to realize that it cannot dominate every kind of conflict, and that functioning as a supporting force is no less critical or gratifying than functioning as the supported force.

Irregular warfare will characterize the long war, however, and airpower plays primarily a supporting role in irregular warfare. To maximize its relevance in the long war, then, the Air Force needs to ask a question it seems to dread: 'What can we do to best support the boots on the ground?' The USAF needs to develop 'The Complete Airpower Theory', where the AF smoothly transitions from being a decisive and supported force in major combat operations, to being a supporting force in lower intensity situations. Doing so would assuage the Army's reluctance to count on the AF to be there when needed and cement a productive framework for the next 50 years of AF history. Such a theoretical foundation would also give the USAF the framework upon which to resource capabilities optimized for irregular warfare.

### **AF Capabilities for Counterinsurgency**

The preceding sections have argued that America faces a true threat – one as serious and ideologically-motivated as Soviet communism – in the long war, that irregular warfare will be the major factor in nearly every campaign, that the application of airpower to irregular warfare is fundamentally different than its application to conventional major combat operations, and that culturally the USAF needs to become comfortable operating in a supporting role to be relevant to counterinsurgency. But operating in a supporting role does not mean that the USAF cannot bring

unique and critical capabilities to the fight. The appropriate application of airpower does in fact give the counterinsurgent an asymmetric advantage over insurgents.<sup>75</sup> Ground-centric insurgents typically lack the ability to effectively counter the US' freedom of operation through the air.<sup>76</sup> This section presents thoughts for some specific capabilities the USAF needs to develop and invest in to improve its effectiveness in counterinsurgency.

While this paper advocates building capabilities specific to irregular warfare, the big picture argument is for balance. Insurgency is the major threat in the long war, but it is not the only threat the US faces in this generation. With the Army and Marines nearly fully committed in Iraq and Afghanistan, the Air Force (and the Navy) become the country's primary forces for deterring and defeating threats outside of the long war.<sup>77</sup> A conflict with a regional power, such as Iran, North Korea, China over Taiwan, or a resurgent Russia could challenge the US with ballistic missiles, nuclear weapons, large-scale and technologically adequate air and surface forces, counterspace operations, and cyber attack.<sup>78</sup> Paradoxically, America's conventional military strength is a factor that deters these kinds of threats and forces our adversaries to use asymmetric means.<sup>79</sup> While irregular warfare has become the most likely threat, the threat posed by a peer competitor, however unlikely, is the most dangerous threat to national sovereignty and thus is a fight "we cannot lose."<sup>80</sup> So, the USAF must maintain sufficient capability for and mastery of the high end of warfare to "defend the sovereignty of the nation against peer competitors."<sup>81</sup> The challenge for the USAF is to "preserve its current capabilities (if not the same capacity or mass) while creating the same degrees of excellence for actions characteristic of IW and COIN that reside today in its areas of air superiority, global strike, global lift, global connectivity, and global vision."<sup>82</sup>

AFDD 2-3, Irregular Warfare, discusses the application of airpower's doctrinal roles and missions – building partner capacity, intelligence, air mobility, agile combat support, precision engagement, and command and control – to Irregular Warfare. A draft Capabilities-Based Analysis (CBA) focusing on the long war begins to identify specific capability gaps. It divides needed capabilities into four categories: finders, influencers & responders, movers, and shooters.<sup>83</sup> The paragraphs below will build on this framework to highlight some of the capabilities the USAF needs to invest in to build its excellence in Irregular Warfare.

### **Finders**

Field Manual 3-24 asserts that, in regard to counterinsurgency operations, “the ultimate success or failure of the mission depends on the effectiveness of the intelligence effort.”<sup>84</sup> While HUMINT may be the most valuable intelligence source in irregular warfare, air platforms can play a critical role in locating, tracking, and targeting enemy elements and providing real-time situational awareness to friendly ground forces.

Full-motion-video-capable assets are highly valued in counterinsurgencies like Afghanistan and Iraq because of their advantages in discriminating targets and discerning intent. During the cold war, USAF reconnaissance assets favored high-resolution still imagery. This was driven by the threat environment – too hostile for a recce asset to keep station for long – but it was sufficient as the target sets – usually military equipment and formations consistent with a symmetric adversary – presented unique signatures. However, the insurgent does not produce an easily-discerned signature. The insurgent easily blends into the background of activity, so it takes more than a couple frames of imagery to tell if an individual is setting an IED or burying trash. Likewise, while still imagery can pinpoint the location of a house, persistent video surveillance is needed to assess the patterns of life that can indicate whether it is actively being

used as a safe house, and to identify comings and goings that may trigger a time-sensitive direct action mission.

In the same vein, persistent surveillance in overwatch of friendly forces can take away the insurgent's usual advantage of initiative and surprise.<sup>85</sup> Especially when provided directly to supported ground forces, airborne full motion video can greatly aid ground commanders' situational awareness. The value of this support to ground commanders has even coined a new phrase – “non-lethal Close Air Support”<sup>86</sup> – that elevates airborne ISR to the same level as normally reserved for bomb-droppers.

The Air Force has started to embrace full motion video, but it can do more. It is continuing to build MQ-1 Predator capacity, and many targeting pods on fighter aircraft are equipped with video downlinks. The Air Force has fielded the ROVER video downlink receiver which allows Joint Terminal Attack Controllers (JTAC) and other surface units to receive video directly. However, the current configuration of ROVER is too large for dismounted use; it should be repackaged in a form factor suitable for use by a light infantryman or battlefield airman on the move.<sup>87</sup> Additionally, the ISR platform with the greatest persistence in the AF – the RQ-4 Global Hawk – does not provide full-motion video. Global Hawk operators and users have resourcefully found ways to make its still imagery product more useful, but the AF should investigate equipping the RQ-4 with a true full motion video sensor suite.

While Global Hawk is currently the most persistent USAF ISR asset, future platforms may provide an order-of-magnitude increase in persistence. Through the Global Observer Joint Capability Technology Demonstration (JCTD), USSOCOM will prototype and assess a hydrogen-fueled UAV capable of 7 days endurance. This platform holds promise as a full motion video source, or as a platform for wide area sensors that can cue other collectors or

provide data for forensic intelligence analysis. Issues with sensor size and performance – weight, environmental limits, and resolution from Global Observer’s 55,000+ ft operating altitude – need to be addressed to maximize its effectiveness. While the Air Force is involved in the Global Observer JCTD through AFSOC, more direct involvement, and support from the Air Force Research Laboratory, is warranted.

Three other ‘finder’ capability gaps identified in the CBA warrant attention. They are the ability to: operate in many climates/terrains, differentiate combatants from non-combatants, and track small fleeting targets such as individuals.<sup>88</sup> All three of these relate directly to sensor performance. Full motion video will aid with differentiating combatants from non-combatants and tracking small fleeting targets, but improvements in resolution and spectral sensitivity would also enhance these capabilities. The need to operate in multiple climates and terrains serves as a reminder that all campaigns in the long war won’t be fought in the deserts of the Middle East. Islamic insurgencies elsewhere in the world, particularly Southeast Asia, would pose unique challenges for many ‘finder’ assets. The Air Force Shadow Harvest JCTD combines a number of sensors to discern targets in forested or cluttered environments. The USAF needs to continue its support for the Shadow Harvest effort, and for sensor development overall, to fill the capability gaps identified in the analysis.

Finally, the USAF needs to address its intelligence tasking, processing, exploitation, and dissemination (TPED) paradigms. Legacy processes and procedures still apply a model more appropriate to Cold War-like symmetric combat and use a preplanned and scripted deck to collect enemy order-of-battle information for tomorrow’s fight. Counterinsurgency demands better synchronization with the ground scheme of maneuver and responsiveness to the needs of today’s fight. Before AFSOC developed the first-ever Tactics, Techniques, and Procedures

(TTPs) for full motion video exploitation, Predator video was being exploited using methodology developed for U-2 still imagery and armored vehicle targets. The Air Force's Distributed Common Ground Segment (DCGS) focuses on traditional target and enemy order of battle development, while the SOF DCGS focuses on tailored Intelligence Preparation of the Battlespace and 'pattern of life' analysis to support the manhunting mission.<sup>89</sup> To maximize its relevancy to the long war, the Air Force DCGS should partner with the SOF DCGS to develop streamlined TTPs and processes for TPED.

### **Influencers and Responders**

Two classes of capabilities fall into this category: those that influence popular support through information operations, and those that build partner capacity for counterinsurgency. Both of these play a critical role in the long war.

Fighting the Global Islamic Insurgency by, with, and through partner nations is the most important campaign in the long war, if not the most visible. The USAF's main piece of this indirect approach is to enable partner nations to use airpower to fight COIN. The USAF principally conducts this mission through the transfer of equipment to partner nations, and by providing training and advisory assistance to the partner nation. Such assistance can lay the framework for more direct support if and when required.<sup>90</sup> To accomplish the full spectrum of these missions, the USAF needs to have both the capability to build a partner's capacity to employ airpower in COIN, and to fight COIN-like engagements directly, whether independently or in combined force operations. Emphasis should be placed on the former, since the USAF is not large enough to function as the primary air arm in every country that is threatened by the Long War.<sup>91</sup>

Preparing to train and advise a foreign air force requires specialized knowledge and training: cultural awareness, language, and counterinsurgency tactics, in addition to the skills required to survive and operate in an austere and potentially hostile environment.<sup>92</sup> The only USAF unit specifically organized, trained, and equipped for the combat aviation advisory mission is AFSOC's 6<sup>th</sup> Special Operations Squadron. This squadron was too small to take on the long-term task of rebuilding the Iraqi Air Force and the Afghan Army Air Corps, so other air force personnel have been detailed for this mission.<sup>93</sup> As an outcome of the 2006 QDR, the 6<sup>th</sup> SOS is expanding from 110 personnel to 230. However, analysis of the number of missions the 6<sup>th</sup> SOS has had to turn away, and the number of Long War affected countries that could benefit from combat aviation advisory assistance, suggests the Air Force really needs up to 840 combat aviation advisors.<sup>94</sup>

Besides growing in numbers, the 6<sup>th</sup> SOS needs to grow in scope as well. In recent years, the 6<sup>th</sup> SOS flying mission has focused on fixed- and rotary-wing mobility aircraft.<sup>95</sup> To coach foreign air forces in the full spectrum of airpower effects, the 6<sup>th</sup> SOS should also encompass ISR & light attack missions.

While the 6<sup>th</sup> SOS is the USAF's premier provider of combat aviation advisory forces, it cannot provide the needed capability to fight COIN-like engagements directly. At present, the 6<sup>th</sup> SOS possesses only a few UH-1 helicopters, and leases or borrows other helicopters and transport aircraft to maintain currency. The USAF turns instead to its high-tech, conventional forces when it must fight irregular engagements. While these forces have adapted well, they are not optimal for this mission – current mission profiles rarely require supersonic speed, radar countermeasures, 9-g maneuverability, or beyond-visual-range engagement capability.

Fielding one or two wings specifically organized, trained, and equipped for the COIN mission would give the USAF an organic capability for COIN-like engagements and enhance its ability to build partner nation capacity. AFSOC has proposed a concept for an irregular warfare wing, to be equipped with a mix of light strike, heavy & light fixed-wing mobility, rotary-wing mobility, and manned ISR aircraft. The aircraft fielded in this wing would likely have more in common with aircraft used by our partner nations than current USAF inventory aircraft.<sup>96</sup> Typical US inventory aircraft are too complex and costly for many partner nations to sustain.<sup>97</sup> The challenge is to “transition US high-tech systems to right-tech for partner nations”, who need aircraft that are inexpensive, easy to employ and maintain, and robust.<sup>98</sup> The wing would also encompass logistics, intelligence, ops support, C2, and training functions to constitute a stand-alone capability.

The Irregular Warfare wing would be capable of two missions – conducting IW operations and training and enabling partner nations to do the same<sup>99</sup> – and it would improve the USAF’s capability for both. Many of the missions being flown by the USAF today in Afghanistan and Iraq could be performed by much less complex and costly platforms. For instance, using a COIN light strike aircraft for CAS in Iraq or Afghanistan would prove significantly more cost effective than using current aircraft such as an F-16. Hawker-Beechcraft (formerly a unit of Raytheon) has proposed an updated version of the T-6 Texan II training aircraft, called the AT-6B, for counterinsurgency. The AT-6B would be capable of carrying up to 1,500 of ordnance, though a typical weapon load would be 2 x 500 lb class or 4 x 250 lb class munitions. An AT-6B is projected to cost \$8M - \$10M to procure, including a built-in ISR/targeting sensor ball, and to cost \$500 - \$700 per hour to operate.<sup>100</sup> By comparison, F-16’s in use today typically carry between 2 and 6 air-ground munitions. While the official USAF fact

sheet quotes a much lower acquisition cost (\$18M - \$24M), data provided to Croatia for its recent fighter competition pegs the cost of current-production F-16C block 60 aircraft at \$85M, or for used F-16C Block 52 aircraft at \$45M.<sup>101</sup> Data from the same source places the per flying hour cost for an F-16C Block 52 at \$3,700, while information in the DoD's FY09 budget submission implies a flying hour cost between \$3,000 and \$4,000 per hour.<sup>102</sup> This data indicates that a purpose-built COIN aircraft would cost, conservatively, 1/4<sup>th</sup> as much to procure and 1/5<sup>th</sup> as much to operate as a fast jet, yet still provide the capability to strike nearly as many targets per sortie. When the cost-per-weapon-delivered is calculated for each aircraft, the COIN light strike aircraft is more economical.<sup>103</sup>

Beyond these direct costs, utilizing a COIN light strike aircraft may generate second-order cost savings as well. Such an aircraft is likely to have longer on-station endurance than a fast jet, which would decrease the requirement for tanker aircraft and improve the availability of strike aircraft to support ground units. Fuel burn per hour would also be reduced significantly. The cost savings of using such aircraft may allow the US to procure more of them, increasing the USAF's overall capacity and alleviating prioritization issues that cause friction with ground forces.

In the building partner capacity role, fielding an Irregular Warfare wing would increase the credibility of US combat aviation advisors. It would give partner nations a tangible role model for how aircraft suitable to their local conditions could perform the mission. In the past, partner nations have proved reluctant to invest in aircraft not operated by the US.<sup>104</sup>

The second aspect of influencing relates to strategic communication. Popular acceptance and support of the insurgent's message is critical to the success of an insurgency. The skilled practitioner of fourth-generation insurgency will take advantage of every opportunity to

showcase their cause or discredit the counterinsurgent. For example, after a counterinsurgent airstrike, the insurgent should be expected to claim the target was not military and that the casualties were non-combatants. The USAF needs to be ready to counter such claims with facts that validate the strike. One way to do this would be to release weapon system video immediately after the strike, but, according to a senior CENTAF officer who recently briefed the AWC class, current processes require weeks to gain approval to release such imagery. The USAF should include information operations planning in the mission planning cycle,<sup>105</sup> and streamline the process to facilitate timely release of pertinent imagery.

### **Movers**

Air mobility is a key enabler of counterinsurgency forces. Besides providing the means to rapidly deploy, sustain, reinforce, and evacuate ground forces engaged in military operations, it gives the government the ability to extend its presence and provide services.<sup>106</sup> This builds the government's legitimacy and influence and counters the insurgent's popular support. The CBA noted the US has the most robust air mobility capability in the world and highlighted few capability gaps for irregular warfare.<sup>107</sup> Fielding of the Joint Cargo Aircraft and AFSOC's Non-Standard Airlift aircraft will help meet the study's recommendation to build capacity of airlift capable of operating with low visibility and profile, as would establishment of the Irregular Warfare wing with its airlift capability. Additionally, the USAF should encourage and, if possible, facilitate operations by aviation NGOs, such as AirServ, Mission Aviation Fellowship, and PACTEC, that can help extend good governance and presence in areas that would otherwise be open to insurgent influence.

## Shooters

Even though too much force, or force employed indiscriminately, can be counterproductive in a counterinsurgency campaign, airborne precision strike can be of “enormous value in COIN operations” when used carefully.<sup>108</sup> The threat of precision strike takes away the insurgent’s option to mass his forces, since massed forces can be easily targeted. It gives the ability to attack key insurgent nodes when they are identified and fixed. In all cases, a strike’s effect on the overarching goal – winning the support of the population – should be considered before a strike is attempted.<sup>109</sup> To enhance its capability for performing precision strike missions in a COIN campaign, the USAF should focus on three areas: expanding its inventory of platforms capable of persisting over the battle for long periods and carrying a large and versatile weapons load, developing a small, precise, low-collateral damage munition suitable for use from a wide variety of platforms, and increasing the production of Joint Terminal Attack Controllers (JTACs) and streamlining air-ground coordination procedures.

The CBA identified a potential gap in the capability of USAF precision strike platforms to dwell for extended periods of time and carry a large weapons load.<sup>110</sup> Persistence is critical because it “will never be known in advance when a key node will be identified or how long it will remain in place.”<sup>111</sup> Magazine depth – the quantity of weapons/rounds carried by each platform - is important because if air platforms are to be the primary source of fire support for ground units, they must be capable of providing a large volume of fire. Historically, the AC-130 gunship has been the USAF’s primary platform for providing persistent, on-call fire support in a COIN environment. The AC-130 is well suited for this role as it has the sensors, crew complement, and communications gear needed to collaborate closely with ground units and establish accurate awareness of the situation on the ground. However, the inventory of AC-130s

is limited, and aging aircraft issues affect their availability. The capacity of AC-130s in the USAF inventory is insufficient to meet the requests for its capability. To alleviate this shortfall, the USAF should pursue rapid acquisition of a ‘gunship-lite’ based on the Joint Cargo Aircraft (C-27J) or a similar platform. As a long-term solution, the USAF needs to commit to the Next Generation Gunship (NGG) effort proposed by AFSOC. Initial guidance to combine the NGG requirement with those for the Next Generation Long-Range Strike (NGLRS) aircraft has stalled the program, as the requirements have proved to be less than entirely common. The USAF must direct the NGLRS program to accommodate NGG requirements, or resource the NGG program to pursue its own platform.

The issue of low weapons capacity on many USAF platforms, including the MQ-1 Predator,<sup>112</sup> could be alleviated if the AF developed a new class of small precision guided munitions suitable for use from a variety of platforms. Such a weapon would fall in the 50 to 100 lb class and incorporate GPS guidance and some form of active terminal guidance, such as a semi-active laser seeker. These features would allow the weapon to be used against fixed or moving targets in complex environments, such as urban areas, with minimal collateral damage. Such a weapon would greatly enhance the effectiveness of light strike aircraft in the IW wing; while these aircraft could carry 250 lb or 500 lb class weapons, the smaller weapon would increase the number of weapons carried and minimize impact on aircraft performance. The 250-lb small diameter bomb, the smallest bomb currently in the USAF inventory, is overkill for the COIN mission. Its programmable fuze, range-extending wing package, and programmable flight profile are not needed for the COIN mission; a less complex and costly weapon could be utilized and provided to partner nations.<sup>113</sup>

Finally, as precision strike operations in COIN are conducted primarily in close coordination with ground forces, the USAF needs to continue to build its capability to integrate with those forces, both joint and combined. The USAF needs to continue to increase the number of JTACs – battlefield airmen and soldiers qualified to direct air strikes – trained and available to deploy with ground forces. These JTACs should be equipped with state-of-the-art equipment that facilitates machine-to-machine transfer of targeting data and two-way air-ground sharing of target imagery to prevent errors in target identification that lead to fratricide or collateral damage. The workings of the Theater Air Control System and Army Air-Ground System have been streamlined to improve air support in Iraq and Afghanistan;<sup>114</sup> these changes need to be institutionalized for use in future COIN and major combat operations alike.

Optimizing the USAF to meet the COIN challenge of the long war requires a change of mindset as much as it does a refocusing of capabilities. Fielding at least one Irregular Warfare wing, built around the nucleus of the 6<sup>th</sup> SOS, equipped with a variety of right-technology aircraft, full-motion video platforms, tailored intelligence exploitation, and small precision weapons would give the USAF the capability to fight COIN engagements on its own and train and advise partner nations to do the same. Any new capabilities fielded specifically for COIN, however, need to emphasize supportability and sustainability, as they will likely be deployed for long periods of time. Fielding these new capabilities also demands quicker performance from the acquisition system, as it will be difficult to defeat an enemy whose adaptation cycle is measured in days, weeks, and months by working through a system whose cycle time is measured in years.

## Conclusion

The Long War will be the defining conflict of the first half of the 21<sup>st</sup> century, as the Cold War defined the second half of the 20<sup>th</sup> century. In the Long War, the United States is fighting a Global Islamic Insurgency that is utterly committed to an ideology that is the antithesis of America's core values. To achieve its goal of revising the world order, Al Qaeda will use terrorism to coerce America and link with local insurgencies to replace moderate, secular governments with Islamic rule in traditional Islamic lands. The US will fight four types of campaigns in the long war: homeland defense, covert operations, regime change, and counterinsurgency by, with, and through partner nations threatened by the Islamic insurgency.

Irregular warfare, rather than major combat operations, will dominate America's engagement in the long war. Major combat operations will be needed to kick down the door to initiate regime change, but experience in Afghanistan and Iraq suggests that a counterinsurgency phase will follow. Victory in this phase will be the tipping point in achieving the political objectives. In assisting partner nations threatened by insurgencies, the US must be prepared to equip, train, and advise host nation forces, and to conduct counterinsurgency operations directly. Irregular warfare poses unique challenges for the application of airpower, as airpower's inherent strength – the ability to directly target enemy centers of gravity – is neutralized because both sides of the conflict share the support of the population as their key center of gravity.

To reorient itself for the Long War, the USAF needs to develop a new, broader airpower theory. Traditional airpower theories that have defined the USAF's culture since its founding do not translate well to counterinsurgency. They are based on the premise that airpower is best employed independently to produce strategically decisive effects, but counterinsurgency places airpower in a supporting role—it is the ground forces' ride to the fight, eyes in the sky, and on-

call fire support. Airpower has become the dominant force during major combat operations, but in counterinsurgency, it is a supporting force operating in close coordination with ground forces. The USAF needs to adapt its theory and culture so it is comfortable transitioning from a supported role in major combat operations to a supporting role in counterinsurgency. The USAF needs to adapt its theory and culture so it is equally comfortable acting in either role without feeling threatened in its identity or independence.

The USAF's challenge is to adapt to the reality of irregular warfare as the primary form of the long war without losing its competency in major combat operations. The service must maintain a balance between conventional and irregular capabilities. Regional competitors outside the Long War still pose a dangerous threat to the US, and the USAF plays an increasingly important role in deterring these potential adversaries. It is almost as if two air forces<sup>115</sup> are required – one high-tech 'Kick Down the Door Air Force' capable of setting the conditions for rapid victory against conventional adversaries or during regime change scenarios, and an 'Irregular Warfare Air Force' tailored for the unique aspects of a prolonged, widespread counterinsurgency.

The Irregular Warfare Air Force -- encompassing just one or two wings -- would consist of finders, influencers & responders, movers, and shooters. It would be manned by culturally-aware personnel trained to serve as combat aviation advisors, and be equipped with 'right-tech' platforms that are suitable for the COIN environment and sustainable by partner nations. Armed with small precision weapons and enabled by full motion video surveillance and tailored intelligence exploitation, such a force would be able to achieve asymmetric effects against ground-centric insurgents. In balance with the high-tech Kick Down the Door Air Force, it

would give the US the full spectrum of forces needed to fulfill the complete airpower theory – one that adapts its role from supported to supporting as appropriate for the nature of the conflict.

## End Notes

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- <sup>1</sup> FM 3-24 / MCWP 3-33.5. *Counterinsurgency*.
- <sup>2</sup> AFDD 2-3. *Irregular Warfare*.
- <sup>3</sup> One such discussion, widely circulated in the USAF in the 1990's, can be found in Meilinger's *10 Propositions Regarding Airpower*, 1995. In his conclusion, Col Meilinger discusses how air power theorists have long been in the position of advertising more than they could deliver, then pronounces "It appears those days have now passed".
- <sup>4</sup> Gordon and Trainor, *The General's War*, 416.
- <sup>5</sup> President Bush, "Remarks by the President from the USS Abraham Lincoln".
- <sup>6</sup> Metz, "Intervention, Stabilization, and Transformation Operations," 44.
- <sup>7</sup> Hammes, *The Sling and the Stone*, 290.
- <sup>8</sup> Clausewitz, *On War*, 88.
- <sup>9</sup> Sun Tsu, *Art of War*, 129.
- <sup>10</sup> Department of Defense, QDR, 6 Feb 2006, v.
- <sup>11</sup> The end state for the long war has been set in terms of events, not time, despite the best efforts of many critics to establish a timeline for US troop withdrawals. Indeed, in a New York Times article by Thom Shanker dated 15 Jan 08, the Iraqi Defense minister said that Iraq will not be able to defend its borders from external threats until at least 2018, thereby implying the need for continued presence of foreign (i.e. US) forces in Iraq until then. Additionally, in his speech to the American public and a combined session of Congress following the 9/11 attacks, President Bush urged patience and spoke of a 'lengthy campaign'.
- <sup>12</sup> Actually, in his 1998 fatwa, "Al Qa'eda Declaration of War," Bin-Laden did not explicitly declare war on America. Instead, he claimed that America had declared war on Allah, through its support for Israel, its 'occupation' of Muslim lands, and its sanctions against Iraq. Having established his point of view that America was the aggressor apparently helped justify his rulings to kill Americans wherever possible.
- <sup>13</sup> Kilcullen, "Countering Global Insurgency," 13.
- <sup>14</sup> *Ibid.*, 2.
- <sup>15</sup> Post, "Killing in the Name of God," 23.

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- <sup>16</sup> Tolson, “Why an Old Islamic Institution Resonates with Many Muslims Today”
- <sup>17</sup> Post, “Killing in the Name of God,” 23.
- <sup>18</sup> Kilcullen, “Countering Global Insurgency,” 3.
- <sup>19</sup> Bin Laden, Transcript of Message of 6 September 2007
- <sup>20</sup> Kilcullen, “Countering Global Insurgency,” 4-6.
- <sup>21</sup> *Ibid.*, 12.
- <sup>22</sup> Kennan, “The Sources of Soviet Conduct,” 567.
- <sup>23</sup> Nitze, “The Grand Strategy of NSC-68,” 11.
- <sup>24</sup> President, National Security Strategy (2006), 2.
- <sup>25</sup> President Bush, Address to National Endowment for Democracy, 6 October 2005.
- <sup>26</sup> Sullivan, “Fighting the Long War,” 9.
- <sup>27</sup> Hammes, *Sling and Stone*, 15.
- <sup>28</sup> Department of Defense, QDR, 6 Feb 2006, 33.
- <sup>29</sup> *Ibid.*, 32.
- <sup>30</sup> In *Sling and Stone*, (pages 148-149), Hammes makes a valid counterargument that attacks against the US homeland may be counterproductive to Al Qaeda, as they unite US will and drive a strong response against the terrorists. Past history seems to validate this position, as the US response to earlier Al Qaeda attacks in the Middle East and Africa did not have the same effect on American will and action as the 9/11 attacks did. But these attacks didn’t cause the US to abandon its Middle East policies, either.
- <sup>31</sup> The existence – or non-existence – of WMD in Iraq is beyond the scope of this paper; the important point for this discussion is that US leadership believed there were WMD in Iraq and that Saddam Hussein could provide them to terrorist groups such as Al Qaeda.
- <sup>32</sup> Willis, *Airpower, Afghanistan, and the Future of Warfare*, 65
- <sup>33</sup> Combat deaths, as of 11 Feb 08. From GlobalSecurity.org, “US Casualties in Iraq,” [http://www.globalsecurity.org/military/ops/iraq\\_casualties.htm](http://www.globalsecurity.org/military/ops/iraq_casualties.htm) (accessed 11 February 2008).

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- <sup>34</sup> In fact, the lessons from Iraq – the near-invulnerability of American forces in major force-on-force combat, and the apparent vulnerability of American political will in a protracted conflict – could lead a state under threat of regime change by the US to adopt an irregular warfare-based approach as its primary strategy. In a book titled *Unrestricted Warfare*, two Chinese PLAAF Colonels described how to employ such a strategy against the US – see Hammes, *Sling & Stone*, 258-259.
- <sup>35</sup> AFDD 2-3, *Irregular Warfare*, 1.
- <sup>36</sup> FM 3-24, *Counterinsurgency*, 1.1.
- <sup>37</sup> Mills, “Ten Counterinsurgency Commandments,” 1.
- <sup>38</sup> AFDD 2-3, *Irregular Warfare*, 10.
- <sup>39</sup> Peck, “Airpower’s Crucial Role in Irregular Warfare,” 11. Also see Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 328 and 346.
- <sup>40</sup> Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 341.
- <sup>41</sup> The Irregular Warfare Joint Operating Concept concisely defines Foreign Internal Defense as “the participation of the agencies of one government in the programs of another government to free and protect its society from subversion, lawlessness, and insurgency.” IW JOC, 10.
- <sup>42</sup> AFDD 2-3, *Irregular Warfare*, 27. Terminology also used in several places in 2006 QDR report.
- <sup>43</sup> AFDD 2-3.1, *Foreign Internal Defense*, 30-39.
- <sup>44</sup> OEF-TS is the US military component of the US government’s Trans-Sahara Counter-Terrorism Initiative, which encompasses the nations of Mali, Mauritania, Niger, Chad, Algeria, Morocco, Tunisia, Senegal, Ghana, and Nigeria. See Conflict 21 Terrorism Studies, Special Programs.
- <sup>45</sup> Kaplan, “Unheralded Military Successes”
- <sup>46</sup> Vick, *Air Power in the New Counterinsurgency Era*, 122.
- <sup>47</sup> Department of Defense, QDR, 6 Feb 2006, 11.
- <sup>48</sup> JP 2-0, *Joint Intelligence*, I-16.
- <sup>49</sup> Stillion, “Air Force Phase Zero Capabilities-Based Analyses,” 71.
- <sup>50</sup> Mueller, “The Iraq Syndrome,” 44.

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<sup>51</sup> Ibid., 36.

<sup>52</sup> AFDD 2.3, *Irregular Warfare*, 3.

<sup>53</sup> Peck, “Airpower’s Crucial Role in Irregular Warfare,” 11.

<sup>54</sup> Clausewitz, *On War*, 89

<sup>55</sup> In WWII, a conventional war, a key objective of the strategic bombing objective was to break the population’s will to fight; and military forces are a key means of providing security or coercing the population in irregular warfare. The Shining Path in Peru, for example, used brutal force to coerce the population to support their cause.

<sup>56</sup> Drew, “Air Theory, Air Force, and Low Intensity Conflict,” 325.

<sup>57</sup> While the graphical depiction in Figure 2 is the author’s own creation, thanks to Dr Xiaming Zhang of the Air War College faculty for suggesting that Clausewitz’ trinity was best understood as applying for each combatant individually.

<sup>58</sup> AFDD 1, *Air Force Basic Doctrine*, 16-17.

<sup>59</sup> Douhet, *Command of the Air*, 23.

<sup>60</sup> Ibid., 20.

<sup>61</sup> CBS News, “Karzai: Stop the Air Strikes.” Also, Foxnews, “Obama: US Troops in Afghanistan Must Do More Than Kill Civilians.” Also, Boston Globe, “Costly Collateral Damage in Afghanistan.”

<sup>62</sup> While Douhet’s concept of terror-bombing the enemy population doesn’t work for counterinsurgency, his basic pretense – that airpower could influence the population as a center of gravity – is applicable. In a counterinsurgency, airpower influences the CG indirectly, while in Douhet’s vision, it influenced the CG directly. Thus, there are at least a few threads of consistency in airpower theory that trace from today’s counterinsurgency back to the roots of theory.

<sup>63</sup> Faber, “Interwar US Army Aviation and the Air Corps Tactical School,” 217-218.

<sup>64</sup> In some cases, where insurgents are reliant on a critical technology or commodity that is not widely available – such as WMD precursors or IED triggering components – interdiction of supply routes or destruction of production facilities may play a big role in improving security and furthering the counterinsurgency effort.

<sup>65</sup> Warden, “The Enemy as a System,” 41-55.

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<sup>66</sup> Data for US casualties in Iraq, and attacks in Iraq, by month, available at [Globalsecurity.org](http://Globalsecurity.org) show no substantial or irreversible reductions after June 06.

<sup>67</sup> Targeting insurgent leaders as a panacea raises an interesting parallel to the strategic bombardment campaign in WWII. Airpower leaders entered WWII with the hope that strategic bombardment could rapidly produce decisive effects. During the course of the war, several target sets were proposed and prosecuted as supposed ‘panacea targets’ to cripple Nazi Germany. In practice, however, the strategic bombardment offensive became a campaign of attrition, with perhaps the greatest effect being the wearing down of the Luftwaffe instead of the disruption of German industry or will. In the same way, repeated targeting of insurgent leaders – when they can be located – could weaken the insurgency over time, but as long as there is popular support for the insurgent’s message, new leaders will emerge and the insurgency will persist.

<sup>68</sup> Pape, *Bombing to Win*, 55.

<sup>69</sup> Phinney, “Airpower vs. Terrorism,” 20-25.

<sup>70</sup> AFDD 1, *Air Force Basic Doctrine*, 16-17.

<sup>71</sup> AFDD 2-3, *Irregular Warfare*, 10.

<sup>72</sup> *Ibid.*, 14.

<sup>73</sup> Allardice, “The Coalition Air Force Transition Team,” 69.

<sup>74</sup> The Marine Air-Ground Task Force is another example of an air culture that embraces support to ground forces as a primary and valuable mission. I have chosen to use AFSOC for the example here because it is a USAF unit.

<sup>75</sup> Peck, “Airpower’s Crucial Role in Irregular Warfare,” 11.

<sup>76</sup> Typically, insurgents do not field an air force of their own, certainly not one capable of counterair operations. Insurgent air defenses are usually limited to small arms, light AAA artillery, and MANPADS. While a serious threat to low-and-slow-flying aircraft, they can be countered effectively through the use of appropriate tactics, techniques, and procedures, including countermeasures. An exception to this generalization was the Polisario in Morocco in the 1970s. The Polisario insurgents fielded advanced SA-6 Surface-to-Air Missile systems that disrupted the Moroccan government’s ability to conduct air operations. At this point in time, the Polisario controlled a large amount of territory, fielded conventional military formations, and enjoyed significant support from external state sponsors. The US attempted to provide the Moroccan air force with electronic countermeasures to neutralize the SA-6’s, but the countermeasures proved too difficult for the Moroccans to maintain organically. The circumstances of the Polisario insurgency were quite different than today’s long war. See Dean, *The Air Force Role in Low Intensity Conflict*, for a case study.

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- <sup>77</sup> Stillion, "Air Force Phase Zero Capabilities-Based Analyses," 2.
- <sup>78</sup> Ibid., 11.
- <sup>79</sup> Read, "Irregular Warfare and the US Air Force," 43.
- <sup>80</sup> Ibid., 46.
- <sup>81</sup> Ibid., 46.
- <sup>82</sup> Ibid., 43.
- <sup>83</sup> Stillion, "Air Force Phase Zero Capabilities-Based Analyses," xvi - xvii.
- <sup>84</sup> FM 3-24, *Counterinsurgency*, 3-1.
- <sup>85</sup> Vick, *Air Power in the New Counterinsurgency Era*, 114.
- <sup>86</sup> Belote, "Counterinsurgency Airpower," 57.
- <sup>87</sup> Three versions of ROVER were fielded as of the summer of 2007. ROVER I was a portable version that was theoretically man-portable if the soldier or battlefield airman could dedicate nearly all of his rucksack to it. ROVER II was an air-to-air version that allowed platforms such as the AC-130 gunship to receive Predator video. ROVER III added multi-band & multi-platform capabilities (not specific to Predator anymore) to the ROVER I kit but, if anything, increased the form factor so it is best used by soldiers and battlefield airmen on mounted operations.
- <sup>88</sup> Stillion, "Air Force Phase Zero Capabilities-Based Analyses," 109.
- <sup>89</sup> Snyder, e-mail to author.
- <sup>90</sup> AFDD 2-3.1, *Foreign Internal Defense*, Chapter 1.
- <sup>91</sup> Read, "Irregular Warfare and the US Air Force," 44.
- <sup>92</sup> Allardice, "The Coalition Air Force Transition Team," 12.
- <sup>93</sup> This validates the increased emphasis in language and cultural studies that is already being felt in AF PME.
- <sup>94</sup> Stillion, "Air Force Phase Zero Capabilities-Based Analyses," 112-113.

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- <sup>95</sup> Non-flying specialties cover maintenance, logistics, and operations support such as air traffic control, as well as security/force protection and intelligence.
- <sup>96</sup> AFSOC, “USAF Irregular Warfare Concept,” 13-16.
- <sup>97</sup> Read, “Irregular Warfare and the US Air Force,” 49.
- <sup>98</sup> Davies, “Airpower and Counterinsurgency,” Slide 21.
- <sup>99</sup> AFSOC, “USAF Irregular Warfare Concept,” 12.
- <sup>100</sup> AT-6B weapons and rough-order-of-magnitude cost and data provided by Mr Derek Hess, Raytheon-Beechcraft AT-6 Program Manager, via telecom. For comparison, a T-6 trainer aircraft costs \$4M to procure and \$325/flying hour to operate.
- <sup>101</sup> Nacional News Magazin, “F-16 vs. Gripen.”
- <sup>102</sup> Department of the Air Force, “FY2009 Budget Estimates” 53. Derived by dividing the dollars adjusted from the flying hour program by the number of hours by which the flying hour program was reduced.
- <sup>103</sup> While valid for air forces considering investing in new capability, this argument admittedly does not refute the ‘the cheapest aircraft is the one you already have’ argument. The Air Force operates hundreds of F-16s; their procurement cost was invested from previous years’ budgets. Even with a \$3000/hr savings in flying hour cost, the accumulated savings would not equal the \$10M procurement cost for an AT-6 until 3,333 hours have been flown – or over 20 years at the NATO standard utilization of 150 hours/year!
- <sup>104</sup> Read, “Irregular Warfare and the US Air Force,” 49.
- <sup>105</sup> *Ibid.*, 47.
- <sup>106</sup> AFDD 2-3, *Irregular Warfare*, 40.
- <sup>107</sup> Stillion, “Air Force Phase Zero Capabilities-Based Analyses,” 114.
- <sup>108</sup> FM 3-24, *Counterinsurgency*, E-1.
- <sup>109</sup> AFDD 2-3, *Irregular Warfare*, 44.
- <sup>110</sup> Stillion, “Air Force Phase Zero Capabilities-Based Analyses,” 115.
- <sup>111</sup> AFDD 2-3, *Irregular Warfare*, 44.
- <sup>112</sup> Stillion, “Air Force Phase Zero Capabilities-Based Analyses,” 115.

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<sup>113</sup> One issue that must be resolved before GPS-aided weapons can be provided to partner nations is the releasability of GPS keying material. Currently, such material is treated as sensitive cryptologic equipment/information and is not routinely shared with most nations.

<sup>114</sup> Belote, "Counterinsurgency Airpower," 59-60.

<sup>115</sup> I am not advocating dividing the air force into two services; rather, the analogy here is to numbered air forces within the greater USAF.

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