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AGGRESSIVE ISR IN THE WAR ON TERRORISM: BREAKING THE COLD WAR PARADIGM

by

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Preface

I have a very personal interest in the topic of employing airborne intelligence, surveillance and reconnaissance (ISR), as I have been involved with ISR for my entire US Air Force career. Perhaps there is a bit of cultural bias in my outlook, but I have observed the planning and employment of airborne ISR from several different perspectives. Much of my career has been associated with the RC-135 RIVET JOINT program. I have spent many long hours flying strategic reconnaissance missions, often not knowing of what value the collected intelligence might add to strategic level decision-making. My experience in the application of all ISR systems (not only airborne) to a counterterrorism strategy is a result of a two year assignment to the ISR Branch of European Command (EUCOM) Headquarters, responsible for allocating our available ISR assets to the combatant commander's top regional priorities. This time period also included a six-month stint on the EUCOM counterterrorism planning group, crafting a response to the events of 11 September 2001 for the EUCOM theater. It was only after serving at EUCOM Headquarters that I began to understand the political value of employing airborne ISR assets, above and beyond their intelligence collection capability.

With this experience, I agree with the current senior leaders of the US Air Force for their enthusiasm towards airborne ISR and connecting the gained intelligence in real-time to weapons systems. However, I believe there are certain "intangibles" that airborne ISR is able to provide to a counterterrorism effort that go well beyond the value of weapons. I

hope to make more tangible these "intangibles," such as persistent presence, demonstrated commitment, dissemination to host nations, and plausible deniability for intelligence collected from other sources.

This paper is a product of group effort. I'd like to thank the men and women of EUCOM's ISR Branch who performed miracles in employing our available ISR assets throughout the region. I'd also like to acknowledge LTC Ned Fish (USA), LTC Powell Smith (USA) and Lt Col Dean Worley (USAF) of the EUCOM Counterterrorism Working Group, with whom I spent many late nights, over holidays and weekends, pondering how to use a limited number of military assets to defeat the global terrorist groups that threatened our region of responsibility. Much of the concept for the Terrorist Group Model came out of these discussions. I'd like to thank Lt Col Steve Miller of Central Command (CENTCOM) for his assistance in interviewing key players in CENTCOM's employment of ISR during Operation ENDURING FREEDOM and Operation IRAQI FREEDOM. Although not directly referenced in this document, the findings from this paper are commensurate with the foundations/findings from my interviews at CENTCOM and my personal experience at EUCOM. I'd also like to express my appreciation to Cindy Williams, Principal Research Scientist at the Security Studies Program at Massachusetts Institute of Technology, for reviewing this paper. Any errors or inconsistencies are my own, undoubtedly because I was too stubborn to follow her great advice. Finally, I wish to express my pride and admiration to the men and women of the Fightin' Fifty-Fifth Reconnaissance Wing, who every day walk the wall, keeping their ears open for potential threats to this nation.

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Abstract

Following the attacks of 11 September 2001, the United States (US) found itself in a new type of war, one for which existing military doctrine was ill suited. The US now faces a dispersed, loosely organized, non-state threat. This paper addresses the problem of how to employ existing military tools to counter global terrorist groups. This paper presents a Terrorist Group Model of a notional group, then proposes a counterterrorism strategy to deny terrorist groups sanctuary, one of the key requirements for these non-state threats. This paper then presents several ways in which this objective may be achieved using existing military assets in a new way. The final proposals build upon a 2003 RAND study entitled "Military Operations Against Terrorist Groups Abroad: Implications for the United States Air Force," authored by David Ochmanek.

To achieve success against this non-state foe, the US must deny sanctuary to terrorist groups who seek safe haven in states unable to control their own territory. The existing mechanism for supporting weak states is through the Foreign Internal Defense (FID) programs, run by US State Department Chiefs of Mission (US ambassadors) and supported by the military combatant commander of that region. One purpose of this study is to alert State Department officials to the benefits to be gained using one of the military combatant commander's intelligence collection tools to support an effort.

The proposed counterterrorism strategy is to disrupt global terrorist groups by denying them sanctuary in weak or failing states. The objective is to make weak states

unattractive to terrorist groups seeking safe haven by strengthening the states 'own ability to detect and counter terrorist groups within their borders. Employing airborne intelligence, surveillance and reconnaissance (ISR) systems is a means to this end. Airborne ISR missions greatly increase the reach of US intelligence collection and provide intelligence that may be shared with the host nation. Unlike space-based ISR, airborne ISR is visible every time it operates; employing it demonstrates American commitment to a counterterrorism campaign, both to the host nation, its population, and the terrorist groups. Airborne ISR collection and analysis is a relatively inexpensive means to show this support, and may therefore be attractive to third parties (such as NATO or the EU). These ISR missions deny sanctuary to terrorist groups and disrupt their operations by forcing them into less efficient means of training and communicating. The presence of such "overt" intelligence missions also provides plausible cover stories for the sharing of other intelligence from more sensitive sources.

Unfortunately, this is not where the US military currently focuses; the US Air Force emphasizes the integration of sensors to produce rapid intelligence for force projection. Too much attention is placed upon network centric warfare, not enough on traditional strategic reconnaissance. This focus, while perhaps appropriate for the majority of military operations, still leaves some critical gaps. This paper includes recommendations to the regional combatant commander and the US Air Force (as the predominant provider of airborne ISR systems) to further enable the proposed counterterrorism strategy. These recommendations revolve around improving the collection, processing and analysis, and sharing of intelligence on terrorist groups so that State Department officials may call upon airborne ISR systems to better fulfill their FID missions.

Chapter 1

Introduction

> *[I]t must be obvious to you that, due to the imbalance of power between our armed forces and the enemy forces, a suitable means of fighting must be adopted i.e. using fast moving light forces that work under complete secrecy. In other word to initiate a guerrilla warfare, were [sic] the sons of the nation, and not the military forces, take part in it.*
>
> —Osama bin Laden[1]

The tragic events of 11 September 2001 altered the way the United States views the world, and highlighted new threats posed by new actors. No longer safe behind its oceans, no longer able to employ the logic of deterrence toward traditional state actors, the United States is now searching for a proactive strategy for countering threats that may show up suddenly upon its shores.

The threat of global terrorists is now the US government's national defense priority.[2] The *US National Security Strategy* specifically identifies its approach to the Global War on Terrorism: "We will disrupt and destroy terrorist organizations by: denying further sponsorship, support, and sanctuary to terrorists by convincing or

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[1] "Declaration of War Against the Americans Occupying the Land of the Two Holy Places," from Osama bin Laden's 1996 declaration of war, in Alexander and Swetnam, *Usama bin Laden's al-Qaida*, Appendix 1 A, 11. Quoted in Bruce Hoffman, "Al Qaeda, Trends in Terrorism and Future Potentialities: An Assessment," *Studies in Conflict & Terrorism* 26 (2003): 432.

[2] *The National Security Strategy (NSS) of the United States of America*, (September 2002) 5.

compelling states to accept their sovereign responsibilities.[3] The US realizes it cannot engage in a global campaign without assistance of allies. "Where governments find the fight against terrorism beyond their capacities, we will match their willpower and their resources with whatever help we and our allies can provide."[4]

The goal is to deny sanctuary to terrorist groups who seek safe haven in states unable to control their own territory. The mechanism for denying sanctuary is for the United States to assist these weak "host nations." Termed "Foreign Internal Defense" (FI[5]D) such programs are primarily diplomatic efforts led by the US State Department to strengthen local governments.[6] Overall responsibility for military and economic security assistance to a particular country belongs to the Chief of Mission (the US ambassador to that country). Regional combatant commanders of the US Defense Department are to support the Chiefs of Mission in these FID missions. The purpose of this study is to alert State Department officials to the benefits of employing one of the combatant commander's military tools to support the effort against global terrorism. Specifically, it suggests how to employ airborne intelligence, surveillance and reconnaissance (ISR) systems to deny sanctuary to terrorist groups with global reach.

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[3] Ibid., 6.
[4] Ibid., 7.
[5]

[6] "The focus of all US FID efforts is to support the host nation's (HN's) program or internal defense and development (IDAD)." Joint Publication (JP) 3-07.1*, Joint Tactics, Techniques and Procedures for Foreign Internal Defense*, 26 June 1996, I-1. "FID is primarily focused on the diplomatic element of national power." JP 3-07.1, I-3. Also Air Force Doctrine Document (AFDD) 2-7.1, *Foreign Internal Defense*, 2 Feb 1998, 23.

In this war on terrorism, intelligence collection and analysis will play a central role.[7] "Intelligence—and how we use it—is our first line of defense against terrorists and the threat posed by hostile states."[8] Some of the most capable intelligence collection methods offered by combatant commanders are airborne ISR assets (other forms of collection include space-based or ground-based systems). Dissemination of this intelligence to other nations, especially host nations, who may take action on this intelligence is elemental to this FID effort.[9] Supporting host nations, yet allowing them to take the lead for internal stability operations, is also instrumental to the FID effort.[10]

Unfortunately, this is not where the US military currently focuses. Too much emphasis is placed upon network centric warfare, while not enough on good traditional strategic reconnaissance. The ISR community is focused on near-real-time support to the warfighter[11] Dr. James G. Roche, Secretary of the Air Force, warns "all the information

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[7] "Enhanced intelligence capabilities are necessary for both defense and offense. Students of terrorism and its close cousin, insurgency, invariably stress the critical importance of intelligence." Barry R. Posen, "The Struggle against Terrorism: Grand Strategy, Strategy, and Tactics," *International Security* 26, no. 3 (Winter 2001/2002), 46.

[8] *NSS,* 30.

[9] "Sharing intelligence is critical and necessary even if it requires a change in national policy." Maj Gen Tommy Crawford, commander of Air Force Command and Control and ISR (AFC2ISR) Center at Langley AFB, "U.S. Air Force ISR Horizontal Integration Efforts" brief to Defense News Media Group (DNMG) "ISR Integration 2003: The Net-Centric Vision," Arlington, VA., 17 November 2003.

[10] "[I]t will not always be necessary or possible for the United States to do the fighting. Allied military and police forces are more appropriate instruments to apprehend terrorists operating within their national borders than are U.S. forces. They have information that the United States may not have, and they know the territory and people better." Posen, 43.

[11] "There has been a surge in emphasis on ISR over the past few years. We have named our conference ISR Integration, because that's been the main thrust of the U.S. military's efforts in the ISR arena." "… the major focus within the military services and in the joint-services arena today is on ISR integration—rapidly fusing and exploiting the sensor data from different ISR systems to speed the flow of correlated intelligence information to tactical war fighters, both for situational awareness and targeting." "[N]etwork-centric

in the world is useless unless it can inform timely decisions. We must preserve and enhance our ability to get and use quality, timely, actionable information to shorten the kill chain—and put steel on target."[12] The emphasis is thus on collecting data, quickly analyzing it, and forwarding intelligence to the shooter in near-real-time for engagement of a target. One example from the opening minutes of Operation IRAQI FREEDOM was the lauded ability to employ intelligence to redirect B-1 bombers to drop four Joint Direct Attack Munitions on a possible Saddam Hussein meeting place; the bombs impacted twelve minutes after the first intelligence was relayed to the aircrews.[13] This is "effects-based targeting" (determining a desired effect to be produced by the use of force on an a system or infrastructure and then determining the appropriate weapon to produce that effect) as opposed to a preferable "effects-based operation" (which does not limit the tools to military force to achieve a desired outcome, but includes all the national instruments of power).[14] This focus on rapid targeting, while perhaps appropriate for the

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operations are a key goal in all of the services' transformation plans, and ISR integration is viewed as an essential step toward network-centric operations." Glenn Goodman, editor of *ISR Journal*, introductory remarks to DNMG "ISR Integration 2003: The Net-Centric Vision," Arlington, VA., 17 November 2003.

[12] Remarks to the Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Summit, Danvers, Mass, 21 Aug 2003. On-line, Internet, available from http://www.af.mil/news/speech/current/sph2003_27.html. Similarly, Air Force Chief of Staff, Gen John Jumper, asserts "the day is coming when prompt global strike will be a reality, when the kill chain will be reliably and consistently compressed to minutes instead of hours or days, and when the sum of all our sensor, command and control, and information capabilities will be a cursor on the target and steel on the enemy." *Technology-to-Warfighter: Delivering Advantages to Airmen*. *Chief's Sight Picture*, 17 July 2003. On-line, 24 March 2004, Internet, available from http://www.af.mil/viewpoint/.

[13] Crawford.

[14] To include diplomatic, informational, military and economic leverages. For a case study on an attempted effects-based counterterrorism operation that tried to incorporate diverse national instruments of power (and the interagency process needed to carry it out), see Maj Michelle M. Clays study of US-Filipino efforts to shut down the Abu

majority of military operations, leaves some critical gaps in any effort against non-state threats. One critic claims: "To date, lessons from fighting insurgents is mostly negative. Emerging ISR systems are well-suited to [fighting] conventional adversaries, but what about unconventional ones?"[15]

Shortly after the September 11 attacks, Air Force Chief of Staff General John Jumper asked RAND to produce a strategic study for the Air Force on how to combat terrorism. In early 2003, RAND published David Ochmanek's "Military Operations Against Terrorist Groups Abroad: Implications for the United States Air Force." An extremely insightful study, Ochmanek's intent was to create a generic "operational strategy template" for defeating terrorist groups. By predicting the types of operations US military forces might expect to face, Ochmanek hoped to alert defense planners to new demands for force planning and resource allocation.[16] Much of his findings will serve as a departure point for this current study.

Like Ochmanek's study, this research will focus on employing US military assets to support foreign governments who are willing, but lack the ability, to conduct successful counterterrorism operations within their own borders. These are operations "undertaken in cooperation with (and, indeed, in support of) forces of the host country."[17]

Sayyaf terrorist group after 11 September 2001, *The Interagency Process and America's Second Front in the Global War on Terrorism*, Maxwell AFB, Ala.: Air University Press, April 2003.

[15] Loren B. Thompson, "ISR Lessons of Iraq" briefing to DNMG "ISR Integration 2003: The Net-Centric Vision," Arlington, VA., 18 November 2003.

[16] David Ochmanek, *Military Operations Against Terrorist Groups Abroad: Implications for the United States Air Force*, RAND Report MR-1738 (Santa Monica, Calif.: RAND, 2003), iii, 1-2.

[17] Ibid., xi. These counterterrorism efforts will often be equated with counterinsurgency efforts. US military doctrine references in this paper will be drawn from US Defense

This study takes an approach similar to Ochmanek's, but narrows in on the advantages to be gained by employing airborne ISR assets. Like Ochmanek's, this study will assume bilateral relationships, not large coalition or unilateral combat campaigns. The focus of this effort is also directed at Chiefs of Mission, and the value they may obtain from requesting airborne ISR assets from the regional combatant commander, rather than Ochmanek's target audience of military force planners.

In taking a state-by-state approach in FID, Ochmanek proposes several operational objectives in an effort to counter terrorist groups.[18] First, strengthen the capabilities and will of the host nation government forces. Second, gather intelligence on the terrorist networks and activities both locally, and globally. Third, disrupt the activities of terrorists, separate them from the local populace, and capture or kill them. Fourth, prevent these groups from acquiring, retaining, or using chemical, biological, radiological, or nuclear (CBRN) weapons. Finally, do this while protecting friendly forces and bases. The specific scenario examined in this current study is the employment of airborne ISR assets within the airspace of host nations troubled by the presence of global terrorist groups. This involves stepping away from the Cold War mindset, typified by flying ISR aircraft off coasts of adversaries, collecting state-centric intelligence.

For the host nation, airborne ISR is a means to demonstrate cooperative intent with the US in the war on terrorism. It is also a means to obtain intelligence on its own region, which may enable counterterrorism operations by the host nation's forces. Additionally, it may provide a forum for increased training in techniques for the

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Department Foreign Internal Defense and Military Operations Other Than War (MOOTW) doctrine.

[18] Ibid., 5-6.

exploitation of intelligence collection. The presence of US airborne ISR assets would be less intrusive to the local population. It may also be a relatively "benign" method for third party countries to participate in the counterterrorism effort. Finally, allowing US airborne ISR assets to operate in their country would offer economic benefits, since firms within the country would be paid to provide goods and services such as basing and fueling required for these missions.

Conducting such ISR missions provides numerous benefits for the US counterterrorism strategy. First, it provides additional access to collect intelligence, especially in nations with large, desolate regions uncontrolled by the central regime. Second, airborne ISR provides very capable intelligence collection sensors, adaptable even as an adversary adopts new technology, and flexible enough to support a wide range of counterterrorism operations. Third, using airborne ISR provides a significant collection capability, while minimizing the size of the "footprint" or US military presence in a state. Airborne ISR becomes useful even when it does not collect, by providing plausible cover for disseminating intelligence from more sensitive sources or by triggering an adversary to react. Members of the host nation intelligence community, once trained, become part of a larger resource pool from which US agencies may draw (examples include HUMINT operatives, linguists in the local dialects, imagery analysts, and experts in local terrorist group movements and activities). Finally, airborne ISR missions can provide a source for psychological operations and coercion by demonstrating US global reach and commitment to deny sanctuary to terrorist groups.

The recommendation of this study is not to replace other sources of intelligence (such as collection from satellites or human intelligence, or HUMINT, collection) but to

supplement these sources. Chapter 2 presents an organizational model of terrorist groups, and highlights their key elements. Chapter 3 discusses why global terrorist groups seek sanctuary in weak regimes and outlines a strategy to deny this sanctuary. Chapter 4 focuses on the central role of intelligence in this counterterrorism strategy and how airborne ISR sensors can be employed to support it. Finally, Chapter 5 presents recommendations to the Chiefs of Mission for increasing employment of airborne ISR sensors in their FID programs. This chapter also proposes recommendations to the regional combatant commanders and the US Air Force (as the primary provider of airborne ISR sensors) for improving the usefulness of airborne ISR in a global counterterrorism strategy. Although focused on the US Air Force, many of the recommendations could equally apply to the US Intelligence Community as a whole.

Chapter 2

Terrorist Group Model

> *Our priority will be first to disrupt and destroy terrorist organizations of global reach and attack their leadership; command, control, and communications; material support; and finances."*
>
> — US 2002 National Security Strategy[19]

The Global Terrorist Group.

The first requirement is to define the subject. For all the emphasis on countering international terrorism, there is little consensus as to what defines terrorism![20] One definition describes international terrorism as politically motivated violence perpetrated against noncombatant targets involving the citizens or property of more than one country. Elsewhere, a terrorist group is defined as any group which employs terrorism.[21] "Terrorism" is a tactic, not an ideology. It is a military tactic employed by insurgent groups who have no stronger means to confront a state government.[22] It is also a political tactic to undermine the legitimacy of the existing government either by demonstrating the

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[19] *NSS,* 5.

[20] "With respect to the international community: International organizations historically have been unable to agree on a definition of terrorism, since one man's terrorist is often another man's freedom fighter." Raphael Perl, *Terrorism, the Future, and U.S. Foreign Policy*, Issue Brief for Congress, CRS Report IB95112, (11 April 2003), CRS-4.

[21] According to 22 U.S.C. 2656f. Ibid.

[22] "Terrorism is, among other things, a weapon used by the weak against the strong." Ian Lesser et al., *Countering the New Terrorism*, RAND Report MR-989-AF (Santa Monica, Calif.: RAND, 2002), 85.

government is ineffective and cannot protect its own people, or to make the government overreact and harm its own people. It is a criminal tactic, a use of criminal violence, to force a government to change its course of action.[23]

Current definitions of terrorism acknowledge one common element: politically motivated behavior. This study shall employ RAND's definition: "Terrorism is violence or the threat of violence calculated to create an atmosphere of fear or alarm," generally in support of political or systemic objectives.[24] This definition does not include violence for financial profit, although "the growth of international and transnational criminal organizations and the growing range and scale of such operations has resulted in their use of violence with financial profit as the driving motivation."[25] Foreign organizations that engage in terrorist activity are designated as foreign terrorist groups.[26] For this study, "global terrorist group" is defined as any group with extremist ideologies that employs terrorist tactics within the international arena (and therefore poses a transnational threats). RAND, which has conducted research on terrorism since 1972 and maintains a terrorist

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[23] Brian M. Jenkins, *International Terrorism: The Other World War*, RAND Report R-3302-AF (Santa Monica, Calif.: RAND, November 1985), v.
[24] Lesser, 85.
[25] Perl, CRS-4.
[26] "To be classified by the US State Department as a foreign terrorist organization, a group must be a *foreign organization;* it must *engage in terrorist activity*, as defined in section 212 (a)(3)(B) of the [Immigration and Nationality Act] (8 U.S.C. § 1182(a)(3)(B)), or *terrorism*, as defined in section 140(d)(2) of the Foreign Relations Authorization Act, Fiscal Years 1988 and 1989 (22 U.S.C. § 2656f(d)(2)), *or retain the capability and intent to engage in terrorist activity or terrorism*; and the organization's terrorist activity or terrorism must threaten the security of U.S. nationals *or* the national security (national defense, foreign relations, *or* the economic interests) of the United States." [Emphasis in the original]. Fact Sheet (23 May 2003) from the Office of Counterterrorism, US State Department, posted under the "Foreign Terrorist Organization" section on the US State Department homepage. On-line, Internet, 1 December 2003. Available from http://www.state.gov/s/ct/rls/fs/2003/12389.htm.

incident chronology, defines international terrorism as "those acts in which the terrorists crossed national frontiers to carry out attacks, or attacked foreign targets at home."[27]

US military doctrine often associates terrorists with insurgents. This is often, but not always, appropriate. Insurgents, by definition, are competing with the existing regime for control of a region and resources, and seeking legitimacy from the same populace as the local government. Global terrorist groups do not necessarily have designs on local control.[28] The interests of global terrorist groups often lie outside these weak states. These groups, unlike local insurgents (who may or may not use terrorist tactics), may seek nothing more than sanctuary from within these weak states. With no designs to overthrow the existing regime, they don't act to achieve local objectives. They may prefer to maintain a low profile so as not to be seen as a threat to the local regime. In fact, the global terrorist group may entwine itself with the local regime (as in the Taliban government of Afghanistan, or in the Palestinian neighborhoods of Gaza). The US may feel itself constrained in its ability to act due to global opinions on sovereignty rights.

The Terrorist Group Model.

Employing the existing knowledge of various global terrorist groups, a model can be devised for a notional terrorist group from which to design a strategy.[29] Such a model

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[27] Lesser, vi.

[28] "The common denominator of most insurgent groups is their desire to control a particular area. This objective differentiates insurgent groups from purely terrorist organizations, whose objectives do not include the creation of an alternative government capable of controlling a given area or country." CIA pamphlet *Guide to the Analysis of Insurgency*, quoted in Daniel L. Byman et al., *Trends in Outside Support for Insurgent Movements*, RAND Report MR-1405-OTI (Santa Monica, Calif.: RAND, 2001), 4.

[29] The following model was developed by referencing the works of experts of terrorism and terrorist groups, to include: Bruce Hoffman, Jessica Stern, Brian M Jenkins, Ian Lesser, and a conceptual framework for terrorist groups developed at RAND. For specific references, see: Bruce Hoffman, "Al Qaeda, Trends in Terrorism and Future

highlights three primary components of a terrorist organization. The relative importance of each component may change from group to group, but the essentials are consistent. Leadership drives the organization, articulating the agenda that stirs popular support. The Support component consists of all resources necessary to conduct the group's missions. The Populace provides the fighters who will carry out the missions. Isolate any of these components from each other, and the system is severely degraded, if not collapsed. **Figure 1** depicts how a notional terrorist group consists of three components, or "legs of a stool" (see Appendix A for a more detailed outline of this model).

Potentialities: An Assessment," *Studies in Conflict & Terrorism*, 24 (2001): 417-428; Jessica Stern, *Terror in the Name of God: Why Religious Militants Kill*, (New York: HarperCollins, 2003); Ian Lesser et al., *Countering the New Terrorism*, RAND Report MR-989-AF (Santa Monica, Calif.: RAND, 1999); Brian M. Jenkins, *Countering al Qaeda: An Appreciation of the Situation and Suggestions for Strategy*, RAND Report MR-1620-RC (Santa Monica, Calif.: RAND, 2002); Jenkins, *International Terrorism: The Other World War*, RAND Report R-3302-AF (Santa Monica, Calif.: RAND, 1985); Jerrold M. Post, Keven G. Ruby, and Eric D. Shaw, "The Radical Group in Context: 1. An Integrated Framework for the Analysis of Group Risk for Terrorism," *Studies in Conflict & Terrorism*, 25 (2002): 73-100; Post, Ruby, and Shaw, "The Radical Group in Context: 2. Identification of Critical Elements in the Analysis of Risk for Terrorism by Radical Group Type," *Studies in Conflict & Terrorism*, 25 (2002): 101-126; Bonnie Cordes, Brian M. Jenkins, and Konrad Kellen, *A Conceptual Framework for Analyzing Terrorist Groups* (Santa Monica, Calif.: RAND); Daniel L. Byman, et al., *Trends in Outside Support for Insurgent Movements*, RAND Report MR-1405-OTI (Santa Monica, Calif.: RAND, 2001); Abdelaziz Testas, "The Roots of Algeria's Religious and Ethnic Violence," *Studies in Conflict & Terrorism* 25 (2002): 161-183.

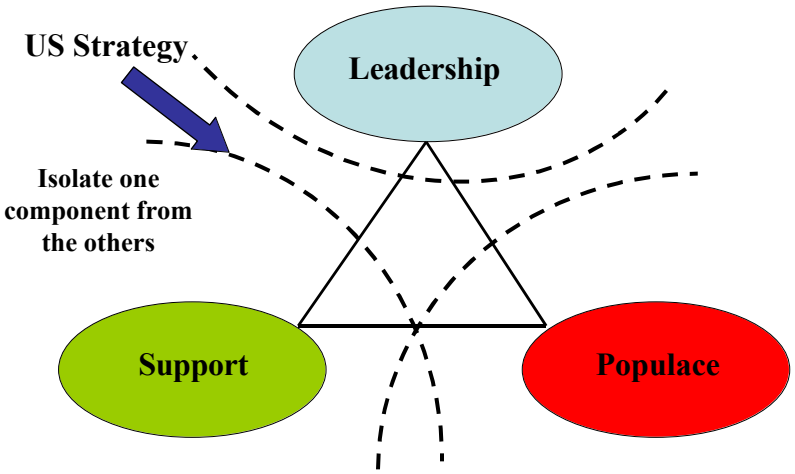

Figure 1. The Notional Terrorist Group

Leadership consists of the command and control necessary to employ the Support, and mold the Population to achieve its objectives. Leadership provides vision, mission, and strategy to an otherwise unfocused discontent.[30] The Leadership derives its strength from two sources: the abilities of the leaders, and the form of its organization. The experience and strategies of the individual leaders will influence how successful the terrorist group will be in achieving its objectives. Leaders maintain their legitimacy based on how will they are seen as able to satisfy the needs of their followers. Another survival asset of the global terrorist group is a flat, decentralized cell network armed with commercial communications technology (like cellular phones and internet), built upon

[30] Jenkins, *Countering al Qaeda*, 4.

mutual trust.[31] It is often the secrecy of these organizations that proves to be their most important advantage. The key to defeating leadership is to separate the leader from the other components. This can be achieved by capturing or killing the leaders, keeping them on the run, beating their decision cycle by acting faster than they can react, and collecting intelligence on them for counter-propaganda to delegitimize them with their followers and supporters.[32] In short: keep them on the run.[33]

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[31] For a discussion of the centrality of interpersonal trust in terrorist groups, even when employing a technologically advanced command, control and communication infrastructure, see Michele Zanini and Sean J.A. Edwards, "The Networking of Terror in the Information Age," especially 31-40, in John Arquilla and David Ronfeldt, eds., *Networks and Netwars: The Future of Terror, Crime, and Militancy,* RAND Report MR-1382-OSD (Santa Monica, Calif.: RAND, 2001). "The viability and effectiveness of this electronic network will depend critically on an underlying network of social relationships based on face-to-face interaction." Nitin Nohria, and Robert Eccles, eds., "Face-to-Face: Making Network Organizations Work," *Networks and Organizations: Structures, Form and Action*, (Boston, Mass.: Harvard Business School Press, 1992), 289-290. "Person-to-person contacts… remain a critical component of fund-raising and recruitment." Stern, 265. "Al Qaeda used informal financial transactions known as *hawala*, which are based largely on trust and extensive use of family or regional connections... to transfer funds around the world." Stern, 273. For further discussion of the *hawala* system, see Don Van Natta Jr., "Terrorists Blaze a New Money Trail," *New York Times*, 28 September 2003.

[32] This was obviously the strategy of the US approach to Palestinian Authority President Yasser Arafat, when he was "marginalized" in favor of prime minister Mahmoud Abbas in the summer of 2003. Some groups have faded with the death or capture of charismatic leaders, for example: the capture of Abimael Guzman in 1992 and Oscar Ramirez Durand in 1999 led to a decline in activity of Peru's *Sendero Luminoso* (or "Shining Path"); the capture of Abdullah Ocalan in 1999 led to a ceasefire of the Kurdish Workers Party (PKK) in Turkey; and the death in 2002 of Jonas Savimbi is widely thought to spell the end of UNITA's military resistance in Angola. For the possible impact on al Qaeda, see Jenkins, *Countering al Qaeda,* 9-10.

[33] "Even unsuccessful offensive actions, which force terrorist units or terrorist cells to stay perpetually on the move to avoid destruction, will help to reduce their capability. Constant surveillance makes it difficult for them to plan and organize. Constant pursuit makes it dangerous for them to rest. The threat of offensive action is critical to exhausting the terrorists, whether they are with units in the field in Afghanistan or hiding out in cities and empty quarters across the world." Posen, 47.

The second component is the **Populace**. Terrorist groups are labor-intensive entities. Similar to insurgency groups, the terrorist group must find a fertile population, not only for support, but also for recruits who, as fighters, carry out the group's terrorist operations.[34] This is typically a discontented group who believe the betterment of their place in life is served by the operations of the terrorist group. The terrorist group feeds off the discontent of this target population through its ideology, offering reward to those who join them.[35] The terrorist group must be viewed by the population as its best recourse for improving its station in life. If this group loses its legitimacy, or is viewed as unable to achieve the objective of a better condition for the population, the population will turn elsewhere. The terrorist group loses legitimacy as a political entity and becomes primarily a criminal activity (for example, the Armed Islamic Group in Algeria, and Asbat al Ansar in Lebanon). The entire populace does not need to agree with the objectives of global terrorist groups to ensure the group's sanctuary; fear or complicity may be enough. Or specific elements in the populace may be targeted (such as from unemployed single youths or affluent highly educated, ideologically fervent students).

The **Support** component encompasses all those resources the terrorist group requires to conduct its operations. This support can be either state-sponsored (such as Iran's support of Hizbullah) or non-state sponsored (such as the fund-raising organizations who offer assistance to the Irish Republican Army). The campaign strategist must consider two categories of sources, and construct courses of action specifically designed for each

[34] For a description of the attributes and motivations of typical recruits to the Armed Islamic Group (GIA) in Algeria, see Abdelaziz Testas, "The Roots of Algeria's Religious and Ethnic Violence," *Studies in Conflict & Terrorism*, 25 (2002): 161-163. For a discussion of jihadi recruitment in Pakistan, see Stern, 223-232.
[35] Stern, 223-232, 284.

source. State sponsors provide financing, weapons, safe haven, and infrastructure (such as intelligence, training, arms and equipment).[36] This support may be indirect, such as promoting extremist ideologies that provide the group legitimacy.[37] This support may not be active, or even be voluntarily provided. For example, in weak states who do not possess sufficient law enforcement or intelligence capabilities to control terrorist groups operating within their borders.[38] Strategies designed to eliminate state sponsorship of a terrorist group must consider the benefits accrued to the state by continued resistance to US coercion, and the costs that might be inflicted upon the state sponsor to coerce them to desist support (for example, US efforts to coerce Afghanistan, Iraq, Iran, Syria and Libya to cease sponsoring international terrorism).[39] Beginning with the end of the Cold War, and accelerating after the regime changes imposed on Afghanistan and Iraq in 2002-2003, open state sponsorship of terrorist groups has declined.[40] Denying terrorist groups

[36] Byman, 10; Jenkins, *Countering al Qaeda,* vii; Jenkins, *International Terrorism*, vi, 19.
[37] Such as Saudi Arabia's funding of religious *madrassahs* with extremist Wahabi ideologies. For the impact of the *madrassahs* as a source for recruiting for jihadi groups in Pakistan, see Stern, 221-223.
[38] Lesser, 130; Stern, 238, 272, 284.
[39] Benjamin Netanyahu, former prime minister of Israel, is one of the most vociferous advocates of a strategy to end state sponsorship. "Take away all this state support, and the entire scaffolding of international terrorism will collapse into dust." Benjamin Netanyahu, *Fighting Terrorism: How Democracies Can Defeat the International Terrorist Network*, (New York: Farrar, Straus and Giroux, 2001), xiii.
[40] Lesser, 130. For a counter-argument to declining state sponsorship, see Byman, 2, who reports that 44 of the 74 insurgencies active since 1991 received "significant or critical" state support. Stern believes al Qaeda still needs the services of a state to function at its pre-September 11th 2001 level, however speculates it could quickly adapt to survive if this support is cut off. Stern, 254.

sanctuary within the borders of sponsor states must be a main objective to any global counterterrorism strategy.[41]

Non-state sponsorship may come from religious or political organizations and individuals that share a common interest with the terrorist groups.[42] This support may include financing, legitimacy, and intelligence. Terrorist groups (by definition, outside the law) often align with organized crime. [43] Alignment with organized criminal groups can be a source of money and experience in smuggling (both people and weapons).[44] The

[41] "Given the utter ruthlessness of al-Qaeda, the United States cannot afford to allow it a sanctuary anywhere." Posen, 44.

[42] "Terrorists increasingly have been able to develop their own sources of financing, which range from NGOs and charities to illegal enterprises such as narcotics, extortion, and kidnapping." Perl, CRS-6. For al Qaeda's use of charitable organizations for funding and money laundering, see Stern, 250.

[43] "Organized criminals … have experience in money laundering, forgery, abduction, and killing; and the jihadi groups have access to training camps and relationships with intelligence agencies that are useful to criminal gangs." Stern, 197.

[44] "…the enormous sums of money involved, as well as numerous points of contact between leading mafias and legitimate institutions, can facilitate acts that would be difficult for politically motivated terrorist groups to undertake—and pay for—on their

most concerning development would be the proliferation of nuclear technology to global terrorist groups.[45] From wherever this sponsorship originates, it is one of the key components to any terrorist organization. An effective strategy must therefore be found to disrupt these groups.

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own." Lesser, 107. "Al Qaeda has also procured weapons from Russian and Ukrainian organized crime rings." Stern, 255.

[45] "Numerous reports have emerged that bin Laden has forged links with organized criminal groups based in the former Soviet Union, Central Asia, and the Caucasus in his attempts to acquire nuclear weapons." Stern, 257.

Chapter 3

A Counterterrorism Strategy

Given the utter ruthlessness of al-Qaeda, the United States cannot afford to allow it a sanctuary anywhere.

—Barry R. Posen[46]

A Strategy to Dismantle Terrorist Groups

A counterterrorism strategy must focus on global terrorist groups residing within a state. Within each country, the strategist must devise a means to disrupt the interaction of the terrorist group model components and separate one from the others. Undermining any one of the three components may be enough to seriously degrade the ability of the global terrorist group to pose a significant threat. For example, the populace may still be discontented, and support may still exist, but without direction of leadership the discontent is unfocused. A factionalized or delegitimized leadership will not hold the loyalties of fighters or sponsors. Leaders that are prevented from communicating with their followers or supporters will soon become ineffective, giving rise to internal competitors for control of the group. Flat decentralized organizations rely on trust; networks will be less effective if the mutual trust of the leadership is disrupted.[47]

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[46] Posen, 44.

[47] "At a tactical level, the campaign should include efforts to discredit al Qaeda, create discord, provoke distrust among its operatives, demoralize volunteers, and discourage recruits." Jenkins, *Countering al Qaeda,* 24. "The [US] intelligence

Likewise, the core leadership of a group may still exist and the group may have many recruits, but without support for funding, training and safe haven, the group may never be able to rise to a level dangerous enough to significantly threaten US interests.[48] Disrupting sponsorship, whether state or non-state, may severely impact a terrorist groups ability to conduct its operations. A strategy involving economic sanctions or military strikes against valued targets may be required to coerce a recalcitrant state sponsor. Another method of separating support and/or fighters from the leadership is by coercing state sponsors to undermine the legitimacy of the terrorist group's cause for the populace from which support and fighters are recruited. Finally, leaders may have support from sponsors, but they need a discontented populace from which to draw recruits or at least find "benign neglect" of the populace in order to hide from state authorities.[49] Such groups may continue to exist, but lack the legitimacy to attract large numbers of adherents to their cause.

There will be a spectrum of US strategy options depending on the state's ability and willingness to eliminate their support for terrorist groups, intended or otherwise (see **Figure 2**). In Ochmanek's study, he presents a division of states into four categories, based upon their ability and willingness to cooperate in a counterterrorist effort against

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community … should play on the inherent paranoia of terrorist groups and particularly the combat-cadre cell, where a unity of outlook is forged by living in a world of 'we versus they.'" Stephen Sloan, *Countering Terrorism in the Late 1980s and the 1990s: Future Threats and Opportunities for the United States*, CADRE Report AU-ARI-CP-87-5 (Maxwell AFB, Ala.: Air University Press, August 1987), 12.

[48] "Removing the Taliban government in Afghanistan, thereby eliminating al Qaeda's sanctuary and training camps, has broken an important link in the process that once provided al Qaeda's leadership with a continuing flow of recruits." Jenkins, *Countering al Qaeda,* vii.

terrorist groups within their borders.[50] "Effective Opponents" have both the ability and willingness to counter terrorist groups within their own borders, and therefore do not rely upon US assistance other than the sharing of intelligence and coordination of counterterrorism efforts.[51] "Active Sponsors" have the ability to control the activities of terrorist groups within their borders but intentionally choose not to do so, either actively sponsoring or tolerating these groups by providing them sanctuary. US military forces may be employed to coerce such regimes to cease their sponsorship, or to replace the regime with one more amenable to US interests (example, Libya and Iraq). "Willing Hosts" are weak states that do not have the ability to control terrorist groups, and refuse to cooperate with US counterterrorism efforts to control them; military forces may be employed to change these regime (such as the Taliban in Afghanistan). These latter two categories provide scenarios in which US military force could be employed to target global terrorist groups or hostile regimes, but not in a cooperative diplomatic manner with the host nation, and therefore outside the purview of this paper.

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[49] "If cut off from the support of the populace by government forces, the terrorists and insurgents find it difficult to move about freely and to gain steady access to such essentials as food, money, housing, and information." Ochmanek, 11.

[50] A regime's control over territory is defined as the degree to which each state is capable of countering that group within its own borders. A regime's attitude toward a terrorist group is defined as the degree to which each state opposes the existence and operations of that particular group. Ibid., 2-4.

[51] "Only through close coordination between law enforcement officials and the intelligence services of all free countries can a serious effort against international terrorism be successful." Netanyahu, 138.

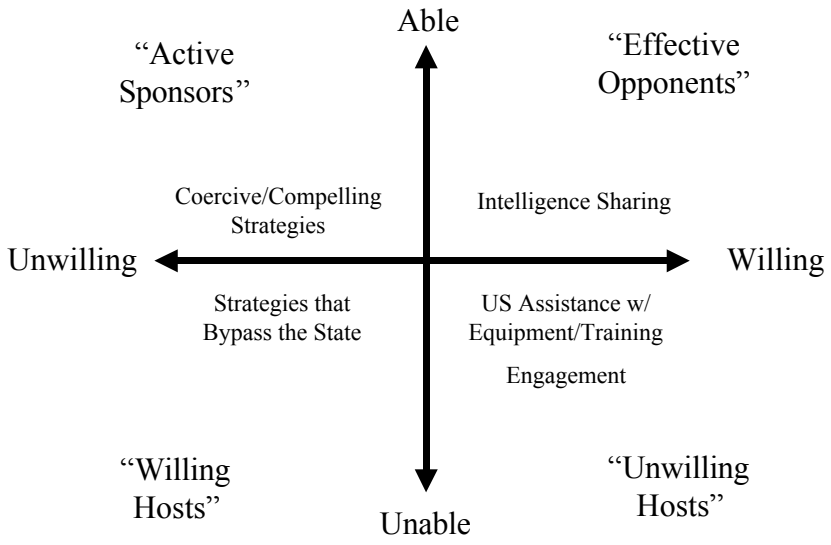

Figure 2. State Capability versus Commitment and Varying US Strategies

Weak and Failing States

The final category of Ochmanek's characterization is the "Unwilling Host," a state that has declared its willingness to cooperate with the US in countering terrorist activity, but lacks the capacity to do so.[52] Such "weak" or "failing" states provide sanctuary to global terrorist groups. Poor economic conditions and political disenfranchisement sow

[52] "They include traditional allies, such as the Philippines; governments that are energetically combating terrorists but that have checkered human-rights records (Uzbekistan); governments with more ambivalent attitudes toward terrorist operations (Indonesia, Yemen); and failed states unable to impose order in their societies (Somalia)." Ochmanek, 2-4. For a discussion of Africa's susceptibility to global terrorist groups due to weak regimes, see Stern, 238. See also Walter H. Kansteiner, Assistant Secretary for African Affairs, *Weak States and Terrorism in Africa: U.S. Policy Options in Somalia*, Testimony Before the Senate Committee on Foreign Relations Subcommittee on African Affairs Washington, DC (6 February 2002). On-line, Internet, 1 December 2003. Available from http://www.state.gov/p/af/rls/rm/7872.htm. See also Nick Tattersal, "Africa Seen as Terrorist 'Haven,'" *Washington Times*, 1 March 2004, 13.

discontent that may be manipulated by terrorist group leaders. Lack of local law enforcement provides a benign environment in which criminal activities thrive. Local politicians and law enforcement are open to bribery or actively participate in illegal activities. Lack of centralized authority enables terrorist groups to lay low below a threshold that would demand action from the local government.[53] Limited border patrols and vast uncontrolled regions allow terrorist groups to smuggle personnel, arms and equipment across uncontrolled borders. Limited law enforcement allows members of terrorist groups to infiltrate organized criminal elements. Limited intelligence in outer regions allows terrorist groups to avoid detection by government forces, enabling the creation of training camps for new recruits.

These weak states may be amenable to cooperation with the US to deny sanctuary to global terrorist groups.[54] Such states require assistance to enhance their military, intelligence or law enforcement capability to effectively engage undesirable groups within their own borders. The US must therefore pursue a proactive strategy of engaging weaker states who may respond favorably to US offers of assistance in training and

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[53] "Although a number of states may be rethinking their sponsorship of terrorist organizations, such organizations are establishing operating bases in countries that lack functioning central governments or that do not exercise effective control over their national territory. Al Qaeda continues to seek new sanctuaries and base areas – most recently in mostly Moslem Indonesia, according to press reports." Perl, CRS-6.

[54] "At the diplomatic level, we should be keenly award of the risks inherent in allowing political vacuums to exist, with no clear-cut exercise of sovereignty. Such areas will be the natural operating environment for violent nonstate actors and terrorist networks." Lesser, 135. "Unless the United States and its principal partners engage proactively to prevent and contain state failure, rogue regimes may seize power in additional failed or failing states, raising the specter of fresh adversaries that seem WMD and harbor terrorists." Chester A. Crocker, "Engaging Failing States," *Foreign Affairs* 82, no. 5 (Sep/Oct 2003): 34. "In the end, the war on terrorism requires many of the same tools and techniques needed to battle the forces causing and thriving off of state failure." Crocker, 42.

equipping host nation agencies that provide internal control.[55] US military doctrine seeks to alter local internal factors to develop long term solutions to make the host nation unattractive to terrorist groups through Foreign Internal Defense (FID) programs run by the US State Department.[56] An operational counterterrorism strategy against groups in such states would in many respects resemble a counterinsurgency strategy, but would include groups not necessarily targeting the local regime.[57]

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[55] There are several important caveats that temper enthusiasm for FID programs. Host nations may fear the loss of legitimacy or sovereignty when allowing US intelligence assets and military forces into their countries. This may be used by terrorist or insurgency groups to further undermine the current regime. For its part, the US may be cautious of supporting less-than-legitimate regimes, or those with poor records of political liberalism and human rights. "Political sensitivities may preclude such direct U.S. involvement in counterterrorist operations in other countries… in part because they [the host countries] wish to avoid creating the impression that their sovereignty has been somehow compromised." Ochmanek, 8.

[56] The intent of military doctrine on FID is to develop long-term solutions allowing the host nation to help itself. "The fundamental principle of all FID efforts is that they foster internal solutions and assist IDAD [Internal Defense and Development] programs for which the supported national has ultimate responsibility and control." The target of FID is changing to adapt to the changing threats to internal stability. "US military involvement in FID has traditionally been focused toward counterinsurgency. Although much of the FID effort remains focused on this important area, US FID programs may aim at other threats to a HN's internal stability, such as civil disorder, illicit drug trafficking, and terrorism." JP 3-07.1, I-3. "The IDAD strategy focuses on building viable political, economic, military, and social institutions that respond to the needs of society." JP 3-07.1, C-1. The goal is to prevent insurgency, existence of terrorist groups, and other forms of lawlessness or subversion by addressing the conditions that prompt violence while defeating the threat. Ibid. For similar FID definitions in US Air Force doctrine, see AFDD 2-3*, Military Operations Other Than War*, (3 July 2000): 26; and AFDD 2-7.1, 23. FID is run by the US State Department, and the Chiefs of Mission in each country; the regional combatant commanders is the senior military representative responsible for planning and executing military operations in support of FID within their areas of responsibility. JP 3-07.1, II-7.

[57] "The strategy developed here proceeds from the central hypothesis that terrorist groups seeking to operate in countries opposed to their presence exhibit many of the same characteristics as insurgent groups. For example, like insurgents, terrorists must operate in ways that make it difficult for governments to identify them, yet they require some measure of support (or at least tolerance) from elements of the populace. These

A Regional Strategy

If terrorist groups are driven out of a state (rather than destroyed), they will relocate to a more attractive region, perhaps to another neighboring weak state. Therefore, efforts should be directed towards eliminating sanctuary by making entire regions unattractive to terrorist groups. The US must "shrink the zones of chaos."[58] A regional counterterrorism strategy would focus on certain key countries, gain their active support for US efforts, and strengthen their internal ability to counter terrorist groups within their borders.[59] Then the strategy should expand to encompass a greater region. Efforts to disrupt the bonds between terrorist groups and local organized criminal elements may also prove effective; although the two types of groups share many characteristics, they often have different aims that might be exploited.[60]

The Military's Role

Several specific military tasks to deny sanctuary stand out as methods to disrupt terrorist groups within weak states.[61] Disrupting recruitment and training, by monitoring

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requirements prompt such groups to conduct operations designed to avoid direct confrontation with numerically superior forces." Ochmanek, 6.

[58] Lesser, 134.

[59] "Decisions on where to invest scarce time, energy, and resources should be based on such factors as the need to avert terrorist buildups and takeovers by WMD-inclined rogues, a country's inherent regional importance and weight, the possibility of regional side effects and contagion, and the potential humanitarian and political price of outright state collapse." Crocker, 41.

[60] For example, criminal organizations often do not actively seek to overthrow the current regime, but merely to remain out of the state's attention. Often these organizations have strong ties with the existing political regime, through bribery and intimidation.

[61] Based on the terrorist models developed by Jerrold M. Post, Keven G. Ruby, and Eric D. Shaw, "The Radical Group in Context: 1. An Integrated Framework for the Analysis of Group Risk for Terrorism," *Studies in Conflict & Terrorism*, 25 (2002): 73-100; Post, Ruby, and Shaw, "The Radical Group in Context: 2. Identification of Critical Elements in the Analysis of Risk for Terrorism by Radical Group Type," *Studies in Conflict & Terrorism*, 25 (2002): 101-126; Bonnie Cordes, Brian M. Jenkins, and Konrad Kellen, *A*

and closing large training camps for example, may compel terrorist groups to cease open recruiting and training, thus reducing the scope of potential future operations. Furthermore, closing the training camps will eliminate the primary means for building the strong bonds of trust required to keep the group cohesive.[62] Degrading a group's ability to communicate, either by actively interfering with their means of communication or by making it known they are being monitored, will compel terrorist groups to adopt less efficient methods. Interdicting the transport of personnel or material (weapons or illegal items used to financially support the group) will also limit the effectiveness of the group. Monitoring porous state borders for smuggling routes and boarding suspect ships for inspections are only two examples. Each of these techniques provides opportunities for additional intelligence collection on the terrorist group, which in turn allows further targeting. But beyond the intelligence collected, these techniques force the adversary to adopt less efficient and effective methods of operation.[63]

Although not the only instrument available to states, military force can be very useful in counterterrorism efforts. RAND terrorism analyst Ian Lesser proposes that "a military response demonstrates resolve, reassures wavering allies, galvanizes other governments to action, and can temporarily disrupt terrorist operations."[64] Military units provide centralized control and hierarchy, and also an institutional infrastructure for

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Conceptual Framework for Analyzing Terrorist Groups (Santa Monica, Calif.: RAND); See also Ochmanek, 10-11.

[62] "The camps … create social ties, so that operatives feel committed to the cause on both ideological and solidarity grounds." Stern, 260.

[63] "Continuous monitoring of traffic on a long-term basis will provide analysts with a picture of what constitutes normal activity, making it easier to detect anomalies. Awareness of U.S. and allied interdiction efforts can compel terrorist groups to adopt ways of doing business that are more costly and less efficient than they would like, reducing their overall effectiveness." Ochmanek, 10-11.

planning. Military units also generally posses a proactive ethos and more resources than other agencies, specifically with respect to specialized personnel and equipment. While the military may not serve as the primary operative agent in a counterterrorism campaign, the local combatant commander may offer a skeleton upon which a coalition effort may be built.

The US military has an advantage over terrorist groups in possessing a rapid decision cycle.[65] "One of the key lessons of past counterinsurgency efforts is that success depends heavily on the ability of government forces to maintain relentless pressure on the insurgents. [I]f government forces can keep the insurgents off-balance, many of the insurgents' efforts will be diverted from planning and conducting offensive operations to trying simply to survive and avoid capture."[66] Terrorist groups residing in hostile states must maintain a low threshold of activity to avoid detection, therefore their methods of operation tend to be slower to react than a more centralized organization.[67] Theoretically, a decentralized organization employing modern communications technology can rapidly

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[64] Lesser, xii.

[65] Also known as the "Boyd Cycle," or "OODA Loop" (for Observation, Orientation, Decision, and Action) was developed by Colonel John Boyd and incorporated in his "Patters of Conflict" briefings of the late 1970s. See Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War*, (Boston, Mass.: Little, Brown and Company, 2002), 327-344.

[66] Ochmanek, 10.

[67] Many organizational theorists often fail to account for this need to remain under a detection threshold when extolling the advantages of terrorist groups as flat organizations. This decision cycle advantage can be lost when states are inept, weak, fractured, or heavily bureaucratized; such traits make it difficult to conduct rapid, strong reactions to new intelligence.

adapt to a changing environment.[68] But a terrorist group forced to rely on couriers to transport communications is anything but quick to adapt.

The US government has often employed military force to react to terrorist acts, primarily to punish state sponsors.[69] Recent examples include the air strike in 1986 as retribution for the bombing of a German discotheque; the 1993 bombing of Iraq's military intelligence headquarters in response to Iraqi efforts to assassinate former President George Bush in Kuwait; and the 1998 missile attacks against al Qaeda facilities in Afghanistan and Sudan. All were acts of retaliation and attempts to dissuade states from sponsoring future terrorist activity. The regime changes imposed on Afghanistan (2002) and Iraq (2003) are extreme examples of the use of the military to remove state sponsorship by forcibly changing regimes. Additional proactive military counterterrorism programs are underway in such hotspots as the Philippines, Yemen and Georgia. But military force will not be the only answer to the global terrorist threat.

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[68] For examples of the theoretical advantages of flat organizations using modern communications, see John Arquilla and David Ronfeldt, eds. *Networks and Netwars: The Future of Terror, Crime, and Militancy,* RAND Report MR-1382-OSD (Santa Monica, Calif.: RAND, 2001); and John Arquilla and David Ronfeldt, eds. *In Athena's Camp: Preparing for Conflict in the Information Age*, RAND Report MR-880-OSD/RC (Santa Monica, Calif.: RAND, 1997).

[69] Perl, CRS-12.

Chapter 4

Airborne ISR and Intelligence

What we have seen [in Afghanistan and Iraq] is a change in doctrine from overwhelming force to overwhelming ISR.

—David Stafford[70]

The Role of Intelligence

The campaign against global terrorist groups will be a battle of intelligence, not a traditional force application of US military doctrine.[71] US military doctrine emphasizes the criticality of intelligence in counter-insurgency missions. Doctrine also recognizes that intelligence sharing across US government agencies, with the host nation, and other coalition partners, will be a key component to successful cooperation.[72] Local intelligence collection agencies of weak states are typically unsophisticated; intelligence is limited due to lack of resources and ability to collect and fuse various types of intelligence.[73] The capability of host nation air reconnaissance and surveillance is often

[70] David Stafford, vice president of Northrop Grumman Integrated Systems, quoted by David A. Fulgham "Intel Not Bombs." *Aviation Week & Space Technology,* 15 September 2003, 59.
[71] "A worldwide effort to collect, evaluate, and integrate intelligence about terrorist networks will be the centerpiece of U.S. and allied efforts to defeat terrorist groups with global reach." Ochmanek, 14.
[72] JP 3-07.1, IV-3, IV-20.
[73] AFDD 2-7.1, 12.

marginal.[74] "Even where intelligence programs have been developed, the lack of efficient procedures for timely dissemination of tactical intelligence degrades overall mission effectiveness."[75] Therefore, an intelligence sharing relationship is recognized as essential to supporting a weak state.[76] Additionally, it is often desirable to construct a viable intelligence infrastructure for the host nation, one that is self-sustaining and can support itself once US forces depart.[77] An independent intelligence capability is the end objective, although preferably one that is interoperable with the US intelligence community. One of the most appropriate means to accomplish this end is through the use of airborne ISR sensors.

Advantages of Airborne ISR

Employment of US airborne ISR assets may address many of the shortfalls of a host nation's intelligence infrastructure. US airborne ISR sensors will contribute greatly to the amount of data collected on terrorist groups. Additionally, airborne ISR may complement other sources of intelligence, such as human intelligence (HUMINT) providing complementary information.[78] Efforts to share intelligence may also be enhanced by using airborne ISR. Coalition partners already fly on many airborne ISR

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[74] "Air reconnaissance and surveillance aircraft generally lack the means of collecting intelligence through thermal imaging, and most are incapable of exploiting the electromagnetic medium beyond a very limited capacity for communications intercept. Generally, collection is limited to visual and photographic means. Few air platforms are configured for photo reconnaissance." Ibid.
[75] Ibid.
[76] "An adequate intelligence collection and dissemination capability is often one of the weakest links in a HN [host nation] military capability." JP 3-07.1, I-13.
[77] "US assistance that creates a long-term reliance on US capabilities may damage the overall HN intelligence and communications system." Ibid., IV-21.
[78] "Air and space assets expand and accelerate the HUMINT process by opening up collection sites not accessible by surface transportation and by speeding up collection, recovery, and distribution of time-sensitive data." AFDD 2-7.1, 16.

aircraft; intelligence products derived from airborne ISR sensors are more readily shared with intelligence agencies of other countries than other forms of intelligence. Furthermore, intelligence from other sources may be attributed to these airborne sensors, thus serving as cover (or "plausible deniability") for more sensitive intelligence sources.

Airborne ISR contributes more to counterterrorism efforts than the intelligence it collects with its own sensors. Visible airborne ISR may trigger a reaction, thus generating further intelligence collection opportunities. For example, aircraft could be flown as "trigger missions" over areas suspected of containing terrorist groups. Such flights might trigger a reaction from the groups that is detectable to other sensors (even if the reaction is beyond the aircraft's own ability to detect). Airpower is also especially identified as playing a role in psychological operations (PSYOP) missions.[79] Other aspects of modern technology, such as the ability to operate at night, add to the psychological impact of US airborne forces on terrorist groups. Shows of force demonstrate US resolve; "aerospace forces can … use Air Force ISR assets to achieve "virtual presence" as a means of globally projecting power."[80] If portrayed correctly,

[79] "The purpose of psychological operations [PSYOP] is to induce or reinforce foreign attitudes and behavior favorable to the originator's objectives." JP 1-02, *DOD Dictionary of Military and Associated Term*, 12 April 2001, as amended through 17 December 2003, 427. "[A]ir and space forces possess inherent capabilities to produce psychological effects by demonstrating superior mobility, responsiveness, and firepower. The psychological impact of air activities on the behavior of target groups may be pursued as a principal goal to weaken enemy resistance and to capture public support …" AFDD 2-7.1, 18. Operationally, "[t]he fact that [insurgents or terrorists] can be bombed day and night and in any weather is a powerful psychological weapon that has proved useful against enemy morale." James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists*, (University Press of Kansas: Lawrence, 2003), 434.

[80] AFDD 2-3*, Military Operations Other Than War*, 3 July 2000, 28.

airborne ISR operations may also project a strong US commitment to strengthening the local regime.[81]

Airborne ISR compares favorably to other methods of intelligence collection. HUMINT, information collected and provided by human sources, is perhaps the most valuable collection method in the war on terrorism. However, much of this form of collection is covert, highly sensitive and not easily shared with other agencies or countries. While not always as precise in collection, airborne ISR has several advantages over HUMINT. Aerospace power provides the advantage of perspective, the vantage point of the third dimension. It is also quicker to react in a rapidly changing environment than ground-based collection. Existing platforms may be adapted to new missions (for example, the Joint STARS E-8B aircraft is being challenged to adapt to a wide-area search intelligence mission in Iraq and Afghanistan, to plot smuggling routes).[82] Airborne ISR can have a smaller footprint than other methods if ISR aircraft are based outside of the host nation.[83] Neither HUMINT nor space-based sensors demonstrate an

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[81] "Accurate portrayal of US FID efforts through positive information programs can influence worldwide perceptions of the US FID programs and the host nation's desire to embrace changes and improvements necessary to correct its problems." From Figure 1-2, "The FID Framework," JP 3-07.1, I-5.

[82] "JSTARS was conceived during the Cold War to help stop a Warsaw Pact ground offensive. By the time it was finally ready for use, the Cold War was over, and only the U.S. seemed capable of conducting massive armored invasions. However, the U.S. found other things for JSTARS to do." Glenn C. Buchan, *Future Directions in Warfare: Good and Bad Analysis, Dubious Rhetoric, and the "Fog of Peace,"* RAND Report P-8079, prepared for: Conference on "Analyzing Conflict: Insights from the Natural and Social Sciences," UCLA, (24-26 April 2003), 24.

[83] "'Over the horizon,' includes operations in which U.S. military involvement is minimal. Here, U.S. forces are collecting information on the activities of terrorists using sensors and platforms based outside the target country, passing relevant information to appropriate authorities in that country's government, and incorporating the information into a database of terrorist networks and activities worldwide." Ochmanek, 31-32.

obvious presence; in certain circumstances, visible presence may be desirable. In some cases, the desired effect may be produced merely by flying overhead.

The results of the second Gulf War demonstrate the value of airborne ISR. According to Dr. Loren Thompson, chief operating officer at the Lexington Institute, much of the critical intelligence collection during the spring campaign in Iraq was generated by air-breathing systems.[84] Space-based collection systems, while indispensable, still demonstrated "severe limitations in collection signal intelligence and imagery."[85] Analysts noted the space-based signals intelligence (SIGINT) collectors lost ground, as the adversary evolved and diversified to newer technology (such as terrestrial fiber, packet switching, encryption software).[86] Furthermore, orbital collectors still capture open emitters (such as radar, radio, and satellite phones) but upgrading the technology on orbital platforms is much more difficult than updating terrestrial or aerial platforms.[87] Space may be the optimum vantage point for an early warning (against state-centric threats such as missiles), but it has severe limitations in collecting SIGINT and imagery on non-state actors adapting to advancing commercial technology.[88] New

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[84] Specifically the JSTARS and AWACS command and control aircraft; the Global Hawk and U-2 imagery platforms; and the RC-135 and EP-3E SIGINT aircraft. Loren B. Thompson, from his briefing "ISR Lessons of Iraq" presented at the DNMG "ISR Integration 2003: The Net-Centric Vision," (18 November 2003), Arlington, VA.

[85] Ibid.

[86] Ibid.

[87] "While satellites allow intelligence gathering in areas aircraft can't reach, airborne systems provide greater flexibility and are easier top upgrade." Robert Wall, "U.S. Signals Intelligence In Flux," *Aviation Week & Space Technology*, 14 July 2003, 26. "Faster migration to terrestrial & unmanned aerial collectors is needed to slow erosion in SIGINT performance." Thompson, "ISR Lessons of Iraq."

[88] "[T]here is widespread doubt within the intelligence community about the future of space-based signals intelligence. As enemies become more diverse and unconventional, they are able to utilize a wide range of technologies and techniques remote spacecraft are poorly positioned to intercept." Loren B. Thompson, "Satellites Over Iraq: A report card

technology sensors can be added to airborne systems relatively quickly (much quicker than updating overhead collection systems).[89] Increased reliance on air-breathing and surface collectors seems inevitable.

Unmanned aerial vehicles (UAVs) proved increasingly valuable to military operations in the second war in Iraq. UAVs offer more endurance and less risk than manned aircraft, but in most respects they are inferior to manned aircraft, being less flexible to a changing environment. Their small payload limits the number of sensors onboard. Their vulnerability limits operations to a relatively benign environment (unless losses are acceptable to the military commanders); at their current level of development, it is unclear whether there is a cost advantage to these systems, due to their high attrition rate. "Heavy use of U-2 reconnaissance planes in Iraq reflected continuing advantages of manned aircraft in ISR."[90]

The Cold War Legacy

Unfortunately, US military counterinsurgency doctrine does not receive enough attention. Although mentioned in the *NSS*, and with a significant amount of historical military doctrine for counterinsurgency warfare, the practical application of this doctrine is still not fully embraced.[91] An aggressive counterinsurgency (and counterterrorism) strategy implies a level of activity and involvement in internal host nation struggles that

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on space-based ISR during Operation Iraqi Freedom," *Intelligence, Surveillance & Reconnaissance Journal* (March 2004): 16-20.

[89] Robert Wall, "U.S. Signals Intelligence in Flux," *Aviation Week & Space Technology,* 14 July 2003, 26.

[90] Thompson, "ISR Lessons of Iraq."

[91] "[C]ounterinsurgency is not a central element of current U.S. national security strategy. American counterinsurgency strategy and doctrine must be revised to reflect the post-Cold War strategic environment." Steven Metz, *Counterinsurgency: Strategy and the Phoenix of American Capability*, (28 Feb 1995), 26.

produces caution in senior military leaders.[92] The US military establishment is trapped in a Cold War paradigm.[93] This is most notable in the realm of intelligence sharing between the US intelligence community and host nation agencies.[94] As noted earlier, the US Air Force emphasizes near-real time employment of ISR to support military strikes on infrastructure targets rather than the multi-dimensional effects-based operations an effective counterterrorism strategy requires.[95]

Counterinsurgency is not the type of conflict the US Air Force currently prefers to fight. US Air Force doctrine is based on a state versus state conflict paradigm. US military doctrine assumes the adversary has a static, hierarchical organizational structure and its approach is to apply force upon key "nodes" to disrupt the proper functioning of the adversary.[96] The threat of overwhelming force will provide a deterrent effect on

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[92] For a discussion of the initial caution (or reluctance) demonstrated by US Special Operations Commander, General Charles Holland, to take on the mission of running a global counterterrorism strategy, and the friction this caused with Secretary of Defense Donald Rumsfeld, see Rowan Scarborough, "Rumsfeld's War: Excerpt 1," *Washington Times*, 23 February 2004. On-line, Internet, 1 March 2004. Available from http://washingtontimes.com/national/20040223-012306-4708.htm. In the article, Stephen Cambone is quoted as saying "Holland was given the keys to the kingdom and he didn't want to pick them up."

[93] "…the U.S. has to overcome its Cold War legacy. That is easier said than done. Almost all of the major weapon systems and support systems (e.g., intelligence collection systems) currently in the U.S. inventory were conceived and developed during the Cold War for a world that no longer exists." Buchan, 6.

[94] "A consistent problem in small wars operations has been in coordinating intelligence and information from all the various military and civilian agencies. The problem is almost never a lack of data but rather the sharing of data and analysis between military services and between police and other civilian agencies." Corum and Johnson, 434.

[95] See this document, pages 2-3, and Chapter 1 endnotes 10-11 and 13.

[96] US Air Force Doctrine now concentrates on "effects based targeting," or those "military actions, such as operations, targeting, or strategy, that are designed to produce distinctive and desired results." AFDD 1-2, *Air Force Glossary*, 9 July 1999, as amended through May 2003, 26. This is a very state-centric paradigm that is very dependent upon good intelligence of the adversary's state infrastructure. Joint military doctrine, however, is moving away from this state-centric paradigm. "New joint doctrine, for instance, states

potential state adversaries. Unfortunately, terrorist groups "present little in the way of infrastructure that could be targeted by a retaliatory strike."[97] There is little infrastructure to target. Effects-based targeting is difficult with limited knowledge of the enemy. US military forces must therefore employ a new mindset.

This war will not be about force application as the US military has long viewed warfare.[98] There are very few state-centric enemies to confront in this continuing campaign against terrorism. This enemy is not a state. This form of warfare requires working through the interagency process, working with host nations and coalition intelligence and law enforcement agencies.[99] The adversary employs a distributed network organization, designed specifically to be nodeless, and thus less vulnerable to attack. If the leaders are eliminated (assuming they could be found) the organization would replace the "head." Many of these terrorist groups are grafted onto or hidden within legitimate state infrastructures, making it difficult to target them with military force. It is operationally ineffective (as well as politically unadvisable) to blow up bridges in Colombia or Iran, for example, to attack terrorist groups or drug cartels when

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that foreign internal defense "has traditionally been focused on defeating an organized movement attempting to overthrow the government," but in the future "may address other threats" such as civil disorder, narcotrafficking and terrorism which "may, in fact, predominate in the future as traditional power centers shift, suppressed cultural and ethnic rivalries surface, and the economic incentives of illegal drug trafficking continue." Metz, 22-23. "[Foreign Internal Defense] programs encompass the total political, economic, informational, and military support provided to another nation to assist its fight against subversion and insurgence." Joint Pub 3-07, *Joint Doctrine for Military Operations Other Than War*, Washington, DC: The Joint Staff, 16 June 1995, p. III-10.

[97] Ochmanek, 20.

[98] "Successful use of military force for preemptive or retaliatory strikes presupposes the ability to identify a terrorist perpetrator or its state sponsor, as well as the precise location of the group, information that is often unavailable from U.S. intelligence sources. Generally, terrorists possess modest physical facilities that present few high-value targets for military strikes." Perl, CRS-12.

the likelihood is great that collateral damage would undermine the legitimacy a strategist hopes to maintain with the local population. This war on terrorism is about intelligence and the effective employment of ISR.[100]

Current employment of ISR in a counterterrorist campaign suffers from three conditions held over from its Cold War mindset: a centralized control of ISR assets, a reluctance to employ ISR assets in politically sensitive areas, and an institutional resistance to share heavily compartmented intelligence. Centralized control of limited assets is almost an article of faith for airpower advocates, dating back to the earliest days of advocates for an independent Air Force.[101] The thought being that it is the most effective means to employ limited assets. The US Air Force has made tremendous strides is making centralized control responsive to combatant commanders (through reachback and advanced communications) during significant combat. However, centralized control is not as reactive for numerous dispersed intelligence collection efforts occurring

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[99] See Clays for a case study in this interagency process.

[100] "In charting its technological future, the U.S. military plans to make fewer investments in new weaponry and spend more on intelligence-gathering, surveillance and reconnaissance (ISR) payloads that will be packed into a growing fleet of unmanned aircraft, along with the communications needed to make them real-time warfighting tools. David A. Fulghum, "Intel, Not Bombs," *Aviation Week & Space Technology*, 15 September 2003. 59. "What we have seen [in Afghanistan and Iraq] is a change in doctrine from overwhelming force to overwhelming ISR, which was made possible by speed and agility paired with persistence of coverage," said David Stafford, vice president of Northrop Grumman Integrated Systems. Quoted in Fulghum, "Intel, Not Bombs," 59.

[101] A key tenant of air and space power is that "centralized control and decentralized execution of air and space forces are critical to force effectiveness. Centralized control allows commanders to focus on those priorities that lead to victory. Delegation of execution authority to responsible and capable lower-level commanders is essential to achieve effective span of control and to foster initiative, situational responsiveness, and tactical flexibility." AFDD 1, *Air Force Basic Doctrine*, September 1997, 23. Although *Joint Pub 3-07.1 Joint Tactics, Techniques and Procedures for Foreign Internal*

simultaneously around the world. A more reactive, horizontally integrated structure is necessary for national ISR assets to coordinate directly with US intelligence, law enforcement, and host nation agencies operating forward.

Political sensitivity of ISR missions is also a concern held since the Cold War. Senior military and political leaders during the Cold War were conscious of the political implications of ISR missions.[102] ISR assets have been employed primarily against adversary state actors, monitoring state infrastructure and military orders of battle.[103] Assets were typically restricted to flights in international airspace, outside national boundaries. These stand-off distances limit the collection capability of the sensors. The belief that US ISR assets might be employed in cooperation with host nation governments, flying over sovereign territory, has not fully entered the mainstream military mindset. It is precisely this reluctance to employing airborne ISR systems in this manner that makes its use a more powerfully coercive statement.

Finally, there is a pervasive resistance to intelligence sharing, especially with non-traditional partners to include interagency cooperation, other state militaries, and law enforcement agencies. One relic of the Cold War mindset is the assumption that

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Defense, (26 June 1996): IV-2, recognizes the need for a more decentralized approach to intelligence gathering.

[102] For example, President Dwight D. Eisenhower expressed serious concerns about initiating early U-2 sorties over the Soviet Union at the beginning of the Cold War. See Frederick J. Ferrer, *The Impact of U.S. Aerial Reconnaissance during the Early Cold War (1947-1962): Service & Sacrifice of the Cold Warriors*. On-line, Internet, 24 March 2004. Available from http://www.rb-29.net/HTML/77ColdWarStory/00.25cwscvr.htm. Similar concern was expressed recently by President George W. Bush on EP-3 missions off the China coast, following the 1 April 2001 mid-air collision with a Chinese fighter.

[103] "The U.S. intelligence community is essentially a Cold War-era artifice… to counter a specific threat from a specific ideology. An estimated 60 percent of the community's focus, for example, remains on military intelligence pertaining to the standing armed

technology inevitably diffuses; a friend today may be an enemy tomorrow, and will employ whatever intelligence collection capabilities the US shares against it.[104] However, today's advances in the Defense arena are exponential, and the technological gap between the US and its closest allies is increasing.[105] Providing access to classified collection systems and facilities will not necessarily result in the compromise of US technological superiority, especially when a significant part of the US military advantage is in the tactics of network-centric operations. The US advantage is not so much in the black boxes as it is in the training and integration of separate nodes and sensors.

The Department of Defense is making some effort towards increasing the sharing of intelligence with other countries. Dr. Stephen Cambone, US Undersecretary of Defense for Intelligence, predicts "[t]he Pentagon will make U.S. intelligence available to allies and friendly nations currently blocked from receiving classified data."[106] The Office of the Secretary of Defense's intelligence directorate is currently drafting guidelines to

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forces of established nation-states." Hoffman, "Change and Continuity in Terrorism," *Studies in Conflict & Terrorism* 24 (2001): 425.

[104] "Given the fact that in advanced nations the technological accomplishments of one scientific team can quickly be matched by another, innovations in one nation will trigger matching or responsive innovations in another." Stephen P. Rosen, *Winning The Next War: Innovation and the Modern Military*, (Ithaca, N.Y.: Cornell University Press, 1991), 45. See also, Samuel P. Huntington, "Arms Races: Prerequisites and Results," reprinted in Art and Waltz, eds., *The Use of Force*, pp. 366, 375, 392. "[F]rom a macro perspective symmetry almost automatically continues to assert itself. To exist in a situation in which the rate of obsolescence normally exceeds the rate of deployment—an environment where, at any one point in time, no one has a good idea what will work and what won't—is to exist under conditions that are organizationally intolerable." Robert L. O'Connell, *Of Arms and Men: A History of War, Weapons and Aggression*, (New York: Oxford University Press, 1989), 9.

[105] "The pace of the modernization of US information systems has been much more rapid than that of allied forces; and this has led to a widening gap in capabilities." David S. Yost, "The NATO Capabilities Gap and the European Union," *Survival* 42, no. 4 (Winter 2000-2001), 106.

permit the release of information by the Defense Department and U.S. intelligence agencies to coalition partners in the war on terrorism. According to Cambone, "we will not be constrained … by all the things that currently complicate our ability to make that information available. That is a huge revolution in security." [107] The further evolution of employing airborne ISR may help.

Political Influence of Airborne ISR

History shows the employment of airborne ISR for political purposes, as well as purely intelligence collection, has been extensive. Intelligence collected by airborne ISR assets played a huge role during the Cold War. RB-47 and early U-2 sorties over the Soviet Union disproved the "bomber gap."[108] U-2 photos taken of missile sites in Cuba led to the Cuban Missile Crisis. From the early flights of U-2s over Soviet airspace in the Eisenhower Administration, to the recent EP-3E mid-air collision with a Chinese fighter in 2001, airborne missions have carried a political message beyond the intelligence they collected. The 161 aircrew killed or missing during these sorties is testament to importance of these missions to the US government. [109]

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[106] Stephen Cambone, during his Keynote Address at the Defense News Media Group, "ISR Integration 2003: The Net-Centric Vision," (18 November 2003), Arlington, VA.
[107] Ibid.
[108] In reaction to Soviet activities of 1955 (to include the display of Mya-4 and Tu-95 BEAR bombers in May and July, as well as the detonation of the first Soviet thermonuclear device in November), General Curtis LeMay ordered Project HOMERUN from 21 May to 10 May 1956. This directed RB-47E and RB-47H airplanes to fly along the northern frontier of the Soviet Union. President Eisenhower later approved Operation OVERFLIGHT, directing U-2 missions to fly over the Soviet Union from 4 to 10 July 1956. These reconnaissance missions showed no large bomber buildup in the Soviet Union. Frederick J. Ferrer, *The Impact of U.S. Aerial Reconnaissance during the Early Cold War (1947-1962): Service & Sacrifice of the Cold Warriors*, Chapter 4, 2-5; on-line, Internet, 21 March 2004, available from http://www.rb-29.net/index.htm.
[109] "There were more than a dozen major shootdowns between 1950 and 1969, with a loss of 161 Air Force and Navy airmen, some of them killed, some captured." William E.

In recent years, some rather unexpected nations have cooperated with the United States in allowing US airborne ISR assets fly in their airspace searching for intelligence on terrorist groups. [110] An example of cooperative counterterrorism efforts is the recent U-2 sorties in Georgian airspace.[111] In April of 2003, the US and Georgian governments concluded a bilateral security pact allowing US troops into Georgia to train local units in counterterrorism tactics.[112] This agreement was preceded in March by several U-2 missions in Georgian airspace, along the Russia-Georgia border (provoking a reaction by the Russians, who scrambled two fighter jets to parallel the U-2 along the border).[113]

Burrows, *By Any Means Necessary: America's Heroes Flying Secret Missions in a Hostile World*. New York: Penguin Putnam Inc., 2001): xx. See also Ferrer, *The Impact of U.S. Aerial Reconnaissance.*

[110] Azerbaijan, Georgia, Hungary, Kazakhstan, Moldova, Russia, Slovakia, Tajikistan, and Turkey are listed as providing overflight for counterterrorist missions, according to US State Department Fact Sheet *Europe and Eurasia*, from Diplomacy and Global Coalition Against Terrorism, posted under the "Global Response: Regions of the World" section on the US State Department homepage, on-line, internet, 1 December 2003. Available from http://www.state.gov/coalition/gr/ 317, 340, 344, 347, 362, 370, 373, 377, 380

[111] "Officially, Washington maintains that the U2s are gathering data that would assist US forces, as well as other members of the anti-terrorism coalition, in rooting out terrorists in the region. Both US and Russian officials have raised particular concern in the past about the possibility of terrorists using Georgia's Pankisi Gorge as a safe haven." However, the sorties did provoke a "fierce response" from the Russians. "During perhaps the most recent flight March 22, Russia scrambled two fighter jets to shadow the U2, which flew about 15-25 miles from the Russian frontier." Giorgi Kandelaki, "U2 Spy Flights Over Georgia Help Raise US-Russian Tension," Eurasia Insight, 27 March 2003. On-line, Internet, available from http://www.eurasianet.org/departments/insight/articles/eav032703.shtml.

[112] Sergei Blagov, "US-Georgian Security Cooperation Agreement Provokes Outcry in Russia," *Eurasia Insight*, 16 April 2003. On-line, Internet, 26 September 2003, available from http://www.eurasianet.org/departments/insight/articles/eav041603a.shtml.

[113] Sarah Karush, "Russian Not Happy With U.S. Spy Flights," *Associated Press*, 26 March 2003. On-line, Internet, 26 September 2003, available from http://mailman.lbo-talk.org/pipermail/lbo-talk/Week-of-Mon-20030324/008706.html. See also Nikolay Gorshkov, "Russia Condemns 'US spy flights.'" BBC, RUSNET.NL, 24 March 2003. On-line, Internet, 26 September 2003, available from http://www.rusnet.nl/news/2003/03/24/print/politics01/shtml.

These missions were flown as part of an attempt to bolster Georgia's own counterterrorist effort.[114] Similar cooperative missions have been conducted in Algeria, the Philippines, Yemen, Pakistan, Somalia, Iraq and Afghanistan.[115] Additionally, "both Libya and Sudan have offered to share intelligence information on Al Qaeda's activities with U.S. authorities."[116] Whether this might translate into overflight rights for ISR assets remains

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[114] "This is an area where terrorism is always near—and we're too weak to do much about it," claimed Alexander Rondeli, president of the Georgian Foundation for Strategic and International Studies. Quoted in Andrew Curry, "Georgia On Their Minds." *U.S. News & World Report*, 6 October 2003. The stated purpose of these missions is to improve Georgia's ability to monitor its borders, prevent the transport of weapons and personnel, and contraband materials across the borders. *Europe and Eurasia*, 340.

[115] "U.S. policy toward international terrorism contains a significant military component, reflected in current U.S. operations in Afghanistan and (on a smaller scale) the Philippines and in planned deployments of U.S. forces to Yemen and the former Soviet republic of Georgia. President Bush has expressed a willingness to provide military aid to "governments everywhere" in the fight against terrorism." Perl, iii. "The US military is working closely with Algerian and other North African forces to help them combat the Salafist Group and other accused terrorist organizations. In addition, under a State Department-sponsored program involving training, cooperation, and equipment and called the Pan Sahel Initiative, the US military is helping the governments of Mali, Niger, Chad, and Mauritania in detecting and stopping suspected militants, terrorists, criminals, and contraband." Brian Whitmore, "US Forces In Europe Will Shift Some Of Their Focus To Africa," *Boston Globe*, 15 February 2004. "After the Sept. 11, 2001, attacks, Washington stepped up military assistance to Algiers in its 12-year civil war against Islamic extremist groups. The US military involvement is also part of a larger US antiterrorism campaign in the vast, desolate Sahel region in North Africa… that US intelligence officials fear could become a primary training ground for radicals exporting terrorism around the world. 'The US government has an ongoing program known as the Pan-Sahel Initiative which provides training and support to Chad, Niger, Mali, and Mauritania to help them control their borders, interdict smuggling, and deny use of their national territories to terrorists and other international criminals,' a Defense Department official said." Bryan Bender, "US Search For Qaeda Turns To Algeria," *Boston Globe*, 11 March 2004. "U.S. Increases Flights To Root Out Terrorists," *Miami Herald*, 14 October 2003. "There are indications that foreign terrorists who once sought refuge here have already started to leave the country with the strict anti-terrorism drive we have been implementing." Philippines president Arroyo, quoted in Ma. Theresa Torres, "Terrorists Starting to Leave RP Under Pressure, Arroyo Says," *Manila Times*, 9 March 2004. Johanna Bockman, et al., *Foreign Support of the U.S. War on Terrorism.* Issue Brief for Congress. CRS Report RL31152 (7 October 2002): CRS-4.

[116] Perl, CRS-2.

to be seen. But these post-11 September efforts exemplify the future cooperative approach that must be followed by the US if its counterterrorism strategy is to be effective. Many improvements can be made to further enhance this strategy.

Chapter 5

IMPLICATIONS FOR THE US AIR FORCE

The Air Force in particular should expect high levels of demand for surveillance platforms and for analysis of the "take" of these platforms for the indefinite future.

— David A. Ochmanek[117]

Recommendations

A successful counterterrorism strategy must separate one of the three components of the global terrorist group from its other components. A primary method is to disrupt global terrorist groups by denying them sanctuary in weak or failing states. Intelligence of the adversary will be the key to any successful application of this strategy.[118] One valuable instrument for collecting intelligence and denying them sanctuary is the employment of airborne ISR assets. Ochmanek therefore warns the USAF to expect a high demand on these assets. [119] Still further improvements can be made. What follows are recommendations for key US actors in this counterterrorism strategy.

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[117] Ochmanek, 14.

[118] "Students of terrorism and its close cousin, insurgency, invariably stress the critical importance of intelligence." Posen, 46.

[119] "[T]he Air Force and the other services can expect widespread and sustained demand for forces and assets capable of gathering information about terrorist operations, assisting friendly forces (at least indirectly) in the conduct of counterterrorist operations, training and advising those forces, and protecting U.S. forces and bases abroad from attack." Ochmanek, 33.

What the US State Dept Must Do:

Airborne ISR missions can be an effective means for the US to assist host nations make their territory less attractive as sanctuary to global terrorist groups. US State Department Chiefs of Mission must be conscious to the advantages of requesting airborne ISR assets as an integral part of their counterterrorism strategy, as part of a larger "Internal Defense and Development" program. They must therefore be aggressive in requesting airborne ISR sensors to support their local counterterrorism efforts. They must also be active in negotiating cooperative ISR missions, overflight permissions, and intelligence sharing agreements with host nations. The intelligence collected may be employed to target the terrorist groups with US forces, or may be shared with the host nation to allow them to engage the adversary. Strengthening weak regimes enhances local ability to counter illegal activities.[120] Increased sharing of intelligence from airborne sensors, and the training necessary to collect and analyze this intelligence, can bolster a local regimes ability to defend itself.

The visible presence of airborne ISR also deters activity. The monitoring of porous borders and smuggling routes can reduce the ease with which terrorist groups and criminal elements take advantage of weak regimes. The presence of ISR lowers the threshold of terrorist group activity who seek to avoid detection, making these groups less effective (for example by forcing groups to relocate terrorist camps or operate with less efficient communications). Airborne ISR assets also send signals of active involvement and commitment, to allies and foes alike, that may be

[120] Steven W Zander reaches a similar conclusion in examining US military support to law enforcement agencies in counter-drug operations. "[B]y strengthening local government, police, and military institutions, these countries will then possess the capability to curb production and stop trafficking." Steven W Zander, "Military Responses in Nonpolitical Conflicts," in *Challenge and Response: Anticipating US Military Security Concerns*, ed. Karl P. Magyar et al. (Maxwell AFB, Ala.: Air University Press, August 1994), 276.

incorporated in engagement and psychological operations. Visibly increased US attention would thus have a deterrent effect on states who intend to avoid detection of their sponsorship.

What Combatant Commanders Must Do:

Anticipating an increased role in airborne ISR sensors in local counterterrorism efforts, regional combatant commanders must be prepared to allocate more ISR assets to these missions. This will likely demand devoting more airborne ISR assets to collecting intelligence on terrorist groups, rather than collecting on state adversaries or supporting near-real time targeting. Combatant commanders must also refocus their military planners on supporting local counterterrorism strategies that may not involve the use of force as the primary military instrument. To accomplish this, military planners must move away from a counter-state Cold War mindset toward a counterterrorist paradigm. Global terrorist groups (and their associated networks from which they draw support, legitimacy, weapons, personnel and funding) are the adversary in this conflict, not states.

What the US Air Force Must Do:

As the leading provider of airborne ISR sensors, the Air Force should expect to play a leading part in this effort. But there are improvements that can be made, especially in collecting and using intelligence. "The fight against terrorist groups with global reach… will call for capabilities that have not, by and large, been at the forefront of U.S. planning and resource allocation for large-scale combat operations."[121] Three areas of concern dominate: intelligence collection, intelligence processing and analysis, and intelligence sharing.

[121] Ochmanek, 33. "[M]ilitary capabilities play unique and crucial roles in the overall strategy, chiefly in seeking to deny terrorist groups safe haven in countries that might be unwilling or unable to act effectively against those groups. Counterterrorist operations, if conducted over an extended period and on a scale commensurate with the threats we envisage, will call for

Intelligence Collection

The US Air Force needs to enhance its intelligence collection capability. This includes acquiring more airborne ISR assets, and more aircrews to fly them. The US military community lacks sufficient airborne ISR assets to meet current demand, let alone this proposed increased demand.[122] Numbers of manned ISR aircraft are limited, as are the number of UAVs able to carry multiple sensors.[123] The US Air Force is low on linguists, cultural experts, imagery analysts and HUMINT experts.[124] The US military also needs improved sensors. Rather than monitoring vast armies arrayed across a battlefield, future ISR sensors must be able to identify individuals and small groups in two very different environments: uncontrolled regions and urban environments. Many terrorist groups seeking safe haven hide themselves in austere environments in vast, uncontrolled regions. Sensors that can search over vast territories and detect human activity must be developed. Terrorist groups also escape detection from

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capabilities that differ, both qualitatively and quantitatively, from the mix of capabilities that the U.S. armed forces has fielded today." Ochmanek, 36-37.

[122] "The Air Force in particular should expect high levels of demand for surveillance platforms and for analysis of the "take" of these platforms for the indefinite future." Ochmanek, 14.

[123] Besides the physical limitation of flying a few ISR systems to numerous, geographically separated locations, the limited inventory of UAVs also negates the intent of unmanned aircraft. Limited numbers of UAVs makes them more valuable to military commanders, and thus increases the reluctance to use them in high-risk environments (including weapon threats, difficult weather, and mountainous terrain).

[124] The list of "stressed" US Air Force jobs (for the fiscal year 2004, from 1 October 2003 to 30 September 2004) for enlisted Air Force members includes: Cryptologic Linguists, Linguist Debriefers, Interpreters/Translators, Intelligence Applications, Imagery Analysts, Signals Intelligence Analysts, and Electronic Signals Intelligence Exploitation. These categories are defined by: "shortage of needed personnel to do the job; above average deployment rate; and long working hours." Rod Powers, "'Stressed' Air Force Jobs: Jobs Designated as 'Stressed' for Fiscal Year 2004." On-line, Internet, 6 April 2004. Available from http://usmilitary.about.com/library/milinfo/blafstressedjobs.htm. Two of the five enlisted career fields receiving the highest US Air Force enlistment bonuses ($10,000 for a 6-year enlistment) are Airborne Linguists and non-flying Linguists (the remaining three specialties are Combat Control, Pararescue, and Explosive Ordinance Disposal). Rod Powers, "Air Force Enlistment Bonuses," 1 January 2004. On-line, Internet, 6 April 2004. Available from http://usmilitary.about.com/library/milinfo/bonus/blafenlistmentbonus.htm.

government forces by hiding amongst the civilian population in urban environments. Many Cold War sensors are also oriented toward military communications, whereas terrorist groups take advantage of commercial means for communication, such as mobile phones and the internet. Terrorist groups also avoid detection by hiding in austere environments, including underground facilities, caves, in desolate locales. Intelligence officials may also be able to exploit the close link between criminal elements and terrorist groups using sensors that detect CBRN or illegal drugs or identify smuggling routes. New sensors capable of efficiently searching vast areas (deserts or oceans) are required to focus sensors with less field of view but greater resolution. [125]

Intelligence Processing and Analysis

The US Air Force also must upgrade its methods of intelligence processing and analysis. Automated intelligence analysis software for wide-area search, able to take in vast amounts of collected data and focus the analyst on only the important data, can reduce the workload on limited analysts.[126] There is some ground-breaking research being conducted on automated data

[125] "Finders"—intelligence, reconnaissance, and surveillance assets—will be of two broad types: those that provide wide-area coverage and those with a narrow field of view but higher resolutions. The role of the wide-area assets will be to provide information about the overall operations of targeted groups and to identify those areas that might merit more intensive investigation." Ochmanek, 22. For an additional discussion of the method for combining sensors with wide fields of view to those with greater resolution, see Major William B. Danskine, *The Time-Critical Targeting Model*, Maxwell AFB, Ala.: Air University, April 2000. On-line, 6 April 2004, Internet, available from http://www.au.af.mil/au/database/projects/ay2000/acsc/00-050.pdf.

[126] Data mining is a "process of using algorithms to discover predictive patterns in data sets." Automated data-analysis tools "find previously unknown knowledge through links, associations, and patterns in data." Mary DeRosa, *Data Mining and Data Analysis for Counterterrorism*. CSIS Report. Washington DC: CSIS, March 2004, 3. "[U]nderstanding the terrorists and predicting their actions requires us to rely more on making sense of many small pieces of information." DeRosa, 5. "[T]hese techniques [data mining and automated data-analysis] can assist analysts and investigators by automating some low-level functions that they would otherwise have to perform manually. These techniques can help prioritize attention and provide clues about where to focus, thereby freeing analysts and investigators to engage in the analysis that requires human judgment." DeRosa, 6.

analysis and data mining. Of interest to counterterrorist intelligence analysts is automated "database mining" software that filters through communications and documents, searching for key words or phrases and then alerting analysts for human exploitation.[127] Another tool is imagery software capable of quickly scanning through large digital images, identifying to the imagery analyst manmade objects, thus saving the analyst from manually examining the entire image. [128] Also under development are unattended sensors that can be placed at key transit points (such as watering holes or mountain passes) that alert analysts when activity is detected. Historical studies of data in remote regions may highlight smuggling routes through mountain passes or across desert spaces (such as in the Caucasus, Saharan Africa, or Central Asia). Such long-term analysis allows for efficient collection efforts using sensors possessing greater resolution, but less range or field of view. [129]

Intelligence Sharing

The US must also address the Cold War paradigm of intelligence sharing. Sharing of US intelligence enhances the weak regime's ability to address its own security needs; US FID programs have the stated intent to strengthen indigenous security capability (to include building up the law enforcement, intelligence and self defense infrastructure). As noted earlier, the U.S. Undersecretary of Defense for Intelligence, Dr Stephen Cambone, claims to be moving in this

[127] For an extensive list of almost 100 companies specializing in data mining related products and services, see the "Consulting and Training Companies in Data Mining and Knowledge Discovery" website at http://www.kdnuggets.com/companies/consulting.html.

[128] "[A]utomated processing tools are being developed to help analysts more efficiently screen the masses of data being gathered by new generations of sensors. Such tools are especially important in counterterrorist operations because the signatures associated with most terrorist groups are generally very small and the "noise" surrounding them is often considerable." Ochmanek, 24.

[129] "Sensors employed for wide-area searches help analysts to gain a clearer picture of the nature of the enemy's organization and operations and to identify places where other human and

direction, although obviously it will require a government consensus reaching beyond the Defense Department.[130] However, several techniques for intelligence sharing may be implemented by military actors, specifically airborne ISR assets, that enable FID and the counterterrorism strategy proposed in this paper.

Intelligence data collected from airborne ISR is often easier to disseminate to host nations than other forms of intelligence. Many bilateral agreements currently exist to share data (sometimes even finished intelligence products) with other nations. Precisely because airborne ISR sensors can be flexibly adapted to new collection requirements (the advantages listed earlier in this paper over space-based or HUMINT collection) diminishes the negative implications of compromising their capabilities. Similarly, flying host nation representatives on airborne ISR aircraft is logistically easier; flying these representatives out of their home country, as opposed to stationing these individuals in satellite or UAV ground stations predominantly based in the US. Host nation riders also add a sense of legitimacy to the cooperative effort. These representatives demonstrate they are proactive participants in their own country's security, while monitoring the US ISR operators to ensure they are "looking where they're supposed to look." Concerns about undesired American surveillance can thus be addressed.

Furthermore, the pool of host nation intelligence experts may be tapped to exploit the data collected with airborne ISR, thus addressing a current critical US military shortfall. This allows for more rapid adjustment to new countries/regions in which the US may lack a sufficient reserve of expertise. Members of the host nation intelligence community, once trained, become part of a larger resource pool from which US agencies may draw (examples include HUMINT operatives,

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technical assets can be concentrated in hopes of gaining confirmation of the presence or absence of the enemy and, perhaps, the identity of individual terrorists." Ochmanek, 23.

[130] See page 33 of this document.

linguists in the local dialects, imagery analysts, and experts in local terrorist group movements and activities.) Much of this infrastructure may be applied in the future to an increasingly-capable, UAV-oriented, national collection system which will likely prove more affordable to weak regimes. Developing this pool of trained intelligence experts then further broadens the infrastructure upon which the US may draw when counterterrorism activities progress to new regions, for example integrating linguists or UAV imagery analysts into future intelligence-heavy operations. All these benefits of an increased sharing of intelligence are enabled by employing airborne ISR systems.

Conclusions

The proposed counterterrorism strategy is to disrupt global terrorist groups by denying them sanctuary in weak or failing states. The objective is to make weak states unattractive to terrorist groups seeking safe haven. Employing airborne ISR systems is a means to this end, all the better if host nations invite US assets into their airspace. Such missions greatly increase the reach of US intelligence collection capabilities. Airborne ISR provides intelligence that may be shared with the host nation, and may even be used to develop the host nation's own intelligence infrastructure. Such cooperative engagement enhances a local regime's ability to conduct its own counterterrorism campaign (which will subsequently free up US assets to refocus elsewhere). Employing a visible means of collection sends several messages to the terrorist groups and local population: of American and host nation commitment to a counterterrorism campaign, and of a vanishing sanctuary from detection for terrorist groups and their supporters. Airborne ISR collection and analysis is a relatively inexpensive means to demonstrate this support, and may therefore be attractive to third parties (such as NATO or the EU). It is also a less intrusive means of cooperating (compared to a large US ground presence) and thus may

offer an opportunity for engagement with previously uncooperative regimes (such as Libya or Sudan). Such operations deny sanctuary to terrorist groups, and disrupt their operations by forcing them into less efficient means of operating, training and communicating. The presence of such "overt" intelligence missions also provides plausible cover stories for the sharing of other intelligence from more sensitive sources.

The US Air Force recognizes the importance of airborne ISR. However, senior leaders are obsessed with the integration of a network of sensors to produce accurate and timely intelligence for force projection. Force projection may not be as important in a global counterterrorism strategy as intelligence projection. This limits the uses of airborne ISR assets in countering terrorism where force application (and the accompanying vast array of weapons-carrying platforms) is the only objective.

Appendix A

The Terrorist Group Model - Detailed[131]

Figure A-1 depicts a more detailed description of the Terrorist Group Model, indicating many of the variables (but by no means an exhaustive list) of a notional terrorism group.

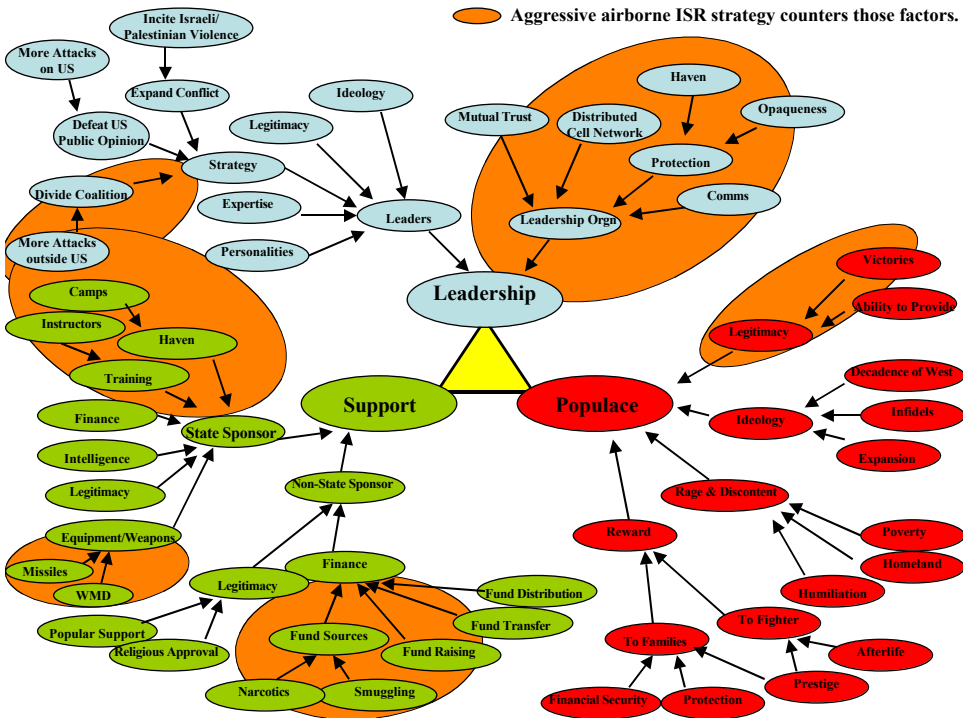

Figure A-1. Detailed Terrorist Group Model

[131] This detailed Terrorist Group Model was first developed in late 2001 by the author, with assistance from LTC Ned Fish, LTC Powell Smith and Lt Col Dean Worley.

Appendix B

US Airborne ISR Sensors

This section intends to list the basic characteristics of a few of the airborne ISR aircraft currently in the US military inventory. The list is restricted to those systems employed at the strategic and operational levels (therefore, there are no tactical UAVs shown here, although most of these systems can be employed in tactical missions). Source for these systems are from Service Fact Sheets at their official websites.[132]

[132] Data from the US Air Force and US Navy ISR sensors is obtained from the official websites of the US Air Force (http://www.af.mil/factsheets/) and US Navy (http://www.chinfo.navy.mil/navpalib/factfile/ffiletop.html#air1). The exception is the data for the US Army's Guardrail Common Sensor; this information was obtained from the Federation of American Scientists website, available from http://www.fas.org/irp/program/collect/guardrail.htm. As this is not an official military website, the author cannot confirm or deny the accuracy of this information.

RC-135V/W RIVET JOINT

The RC-135V/W Rivet Joint reconnaissance aircraft is an extensively modified C-135. The Rivet Joint's modifications are primarily related to its on-board sensor suite, which allows the mission crew to detect, identify and geolocate signals throughout the electromagnetic spectrum. The mission crew can then forward gathered information in a variety of formats to a wide range of consumers via Rivet Joint's extensive communications suite.

General Characteristics:

Primary Function: Reconnaissance.

Flight Crew: Five (augmented) - three pilots, two navigators.

Mission flight crew: 21-27, depending on mission requirements, minimum consisting of three electronic warfare officers, 14 intelligence operators and four inflight/airborne maintenance technicians.

Inventory: Active force, 14; Reserve, 0; Guard, 0.

All RC-135s are assigned to Air Combat Command. The RC-135 is permanently based at Offutt Air Force Base, Neb. and operated by the 55th Wing, using various forward deployment locations worldwide.

Point of Contact: Air Combat Command, Public Affairs Office; 115 Thompson St., Ste. 211; Langley AFB, Va. 23665-1987; DSN 574-5014 or (757) 764-5014; e-mail: acc.pai@langley.af.mil.

[Current as of March 2001]

U-2S/TU-2S

The U-2S is a single-seat, single-engine, high-altitude, surveillance and reconnaissance aircraft. The U-2 is capable of collecting multi-sensor photo, electro-optic, infrared and radar imagery, as well as collecting signals intelligence data. It can down link all data, except wet film, in near real-time to anywhere in the world, providing war planners with the latest intelligence possible.

General Characteristics:

Primary Function: High-altitude reconnaissance.

Crew: One (two in trainer models).

Inventory: Active force, 36 (4 two-seat trainers and two operated by NASA); Reserve, 0; ANG, 0.

U-2s are based at the 9th Reconnaissance Wing, Beale Air Force Base, California, and support national and tactical collection requirements from various operational detachments located worldwide.

Point of Contact: Air Combat Command, Public Affairs Office; 115 Thompson St., Ste. 211; Langley AFB, Va. 23665-1987; DSN 574-5014 or (757) 764-5014; e-mail: acc.pai@langley.af.mil.

[Current as of May 2002]

E-8C JOINT STARS

The E-8C Joint Surveillance Target Attack Radar System (Joint STARS) is a modified Boeing 707-300 series commercial airframe. The E-8C Joint STARS is an airborne battle management, command and control, intelligence, surveillance and reconnaissance platform. Its primary mission is to provide theater ground and air commanders with ground surveillance to support attack operations and targeting that contributes to the delay, disruption and destruction of enemy forces. As a battle management and command and control asset, the E-8C can support the full spectrum of roles and missions from peacekeeping operations to major theater war.

The most prominent external feature is the 40-foot (12 meters) long, canoe-shaped radome under the forward fuselage that houses the 24-foot (7.3 meters) long, side-looking phased array antenna. The radar and computer subsystems on the E-8C can gather and display detailed battlefield information on ground forces. The information is relayed in near-real time to the Armyxs common ground stations and to other ground command, control, communications, computers and intelligence (C4I) nodes. The antenna is capable of detecting targets at more than 250 kilometers. The radar also has some limited capability to detect helicopters, rotating antennas and low, slow-moving fixed wing aircraft.

General Characteristics:

Crew: Flight crew of four plus 15 Air Force and three Army specialists (crew varies according to mission).

Inventory: Total Force wing, 15; Reserve, 0.

The 116th Air Control Wing [Robins AFB, Georgia] operates the E-8C Joint STARS mission.

Point of Contact: Air Combat Command, Public Affairs Office, 115 Thompson St., Suite 211; Langley AFB VA 23665-1987; DSN 574-5014 or (757) 764-5014; e-mail: ;acc.pai@langley.af.mil.

[Current as of September 2003]

RQ-/MQ-1 PREDATOR UNMANNED AERIAL VEHICLE

The RQ-1 and MQ-1 Predators are medium-altitude, long-endurance unmanned aerial vehicle systems.[133] A system consists of four aircraft (with sensors), a ground control station (GCS), a Predator Primary Satellite Link, and approximately 82 personnel for continuous 24-hour operations. The basic crew for the Predator is one pilot and two sensor operators, that fly the aircraft from the GCS via a C-Band line-of-sight data link or a Ku-Band satellite data link for beyond line-of-sight flight. The aircraft has a color nose camera (generally used by the aerial vehicle operator for flight control), a day variable aperture TV camera, a variable aperture infrared camera (for low light/night), and a synthetic aperture radar for looking through smoke, clouds or haze. The cameras produce full motion video and the SAR still frame radar images. The MQ-1 Predator carries the Multispectral Targeting System with inherent AGM-114 Hellfire missile targeting capability and integrates electro-optical, infrared, laser designator and laser illuminator into a single sensor package. The aircraft can employ two laser-guided Hellfire anti-tank missiles.

General Characteristics:

Inventory: Active force, 68; ANG, 0; Reserve, 0. Operating responsibility is at the 11th, 15th and 17th Reconnaissance Squadrons, Indian Springs Air Force Auxiliary Field, Nevada.

Point of Contact: Air Combat Command, Public Affairs Office, 115 Thompson St., Suite 211; Langley AFB VA 23665-1987; DSN 574-5014 or (757) 764-5014, e-mail: acc.pai@langley.af.mil.

[Current as of July 2001]

[133] "R" is for reconnaissance. "M" is for multi-role.

GLOBAL HAWK

The Global Hawk Unmanned Aerial Vehicle (UAV) provides Air Force and joint battlefield commanders near-real-time, high-resolution, intelligence, surveillance and reconnaissance imagery. According to U.S. Joint Forces Command, during 22 individual sorties it flew during the yearlong series of joint deployment exercises, Global Hawk proved its military worth by providing critical intelligence, surveillance and reconnaissance capabilities to the warfighting community.

During a typical mission, the aircraft can fly 1,200 miles to an area of interest and remain on station for 24 hours. Its cloud-penetrating, Synthetic Aperture Radar/Ground Moving Target Indicator, electro-optical and infrared sensors can image an area the size of Illinois (40,000 nautical square miles) in just 24 hours. Through satellite and ground systems, the imagery can be relayed in near-real-time to battlefield commanders.

Global Hawk currently is undergoing flight testing at the Air Force Flight Test Center at Edwards Air Force Base, Calif., with more than 1,700 hours and more than 120 successful sorties flown. The Global Hawk Program, Reconnaissance Systems Program Office, Aeronautical Systems Center is located at Wright-Patterson AFB, Ohio, which assumed total program control on Oct. 1, 1998.

Point of Contact: Aeronautical Systems Center, Office of Public Affairs; 1865 4th Street, Room 240, Wright-Patterson Air Force Base, Ohio 45433-7129; DSN 785-1103 or (937) 255-1103. For PAL, NTSC or betacam videotape footage of Global Hawk, contact Ryan Aeronautical, Cynthia Curiel, via e-mail at ccuriel@ryanaero.com.

[Current as of April 2003]

EP-3E (ARIES II)

The EP-3E ARIES II (Airborne Reconnaissance Integrated Electronic System II) is the Navy's only land-based signals intelligence (SIGINT) reconnaissance aircraft. The 11 aircraft in the Navy's inventory are based on the Orion P-3 airframe and provide fleet and theater commanders worldwide with near real-time tactical SIGINT. With sensitive receivers and high-gain dish antennas, the EP-3E exploits a wide range of electronic emissions from deep within targeted territory.

General Characteristics:

Primary Function: Signals Intelligence (SIGINT) reconnaissance aircraft.

Range: Maximum mission range - 2,380 nautical miles (2,738.9 miles);

for three hours on station @1,500 feet - 1,346 nautical miles (1,548.97 miles).

Crew: Flight crew of 22+.

Inventory: Total Force, 11. [Naval Air Station (NAS) Whidbey Island, Washington and NAS Rota, Spain.]

Point of Contact: Naval Air Systems Command, Public Affairs Department, 47123 Buse Road, Unit IPT, Bldg. 2272, Suite 075, Patuxent River, MD 20670-5440, (301)757-1487.

[Current as of 2 April 2001]

P-3C Orion

Description: Four-engine turboprop anti-submarine and maritime surveillance aircraft. Originally designed as a land-based, long-range, anti-submarine warfare (ASW) patrol aircraft, the P-3C's mission has evolved in the late 1990s and early 21st century to include surveillance of the battlespace, either at sea or over land. Its long range and long loiter time have proved invaluable assets during *Operation Iraqi Freedom* as it can view the battlespace and instantaneously provide that information to ground troops, especially U.S. Marines. The P-3C has advanced submarine detection sensors such as directional frequency and ranging (DIFAR) sonobuoys and magnetic anomaly detection (MAD) equipment. The P-3C can carry a mixed payload of weapons internally and on wing pylons.

General Characteristics:

Primary Function: Antisubmarine warfare(ASW)/Antisurface warfare (ASUW)

Range: Maximum mission range - 2,380 nautical miles (2,738.9 miles);

for three hours on station at 1,500 feet - 1,346 nautical miles (1,548.97 miles)

Crew: 11

Armament: 20,000 pounds (9 metric tons) of ordnance including Harpoon (AGM-84D) cruise missiles, SLAM (AGM-84E) missiles, Maverick (AGM 65) air-to-ground missiles, MK-46/50 torpedoes, rockets, mines, depth bombs, and special weapons.

Point of Contact: Naval Air Systems Command, Public Affairs Department, 47123 Buse Road, Unit IPT, Bldg. 2272, Suite 075, Patuxent River, MD 20670-5440, (301)757-1487.

[Current as of 5 April 2003]

Guardrail Common Sensor

The Guardrail Common Sensor [GR/CS] is a Corps Level Airborne Signal Intelligence (SIGINT) collection/location system [aboard] the RC-12K/N/P/Q aircraft. GR/CS provides near real-time SIGINT and targeting information to Tactical Commanders throughout the corps area with emphasis on Deep Battle and Follow-on Forces Attack support. It collects selected low, mid, and high band radio signals, identifies/classifies them, determines locations of their sources, and provides near-real-time reporting to tactical commanders. The system uses an integrated processing facility (IPF).

Each system consists of twelve aircraft which normally fly operational missions in sets of three. A typical mission requires the aircraft to orbit parallel to the forward line of own troops (FLOT). The IPF sends commands to and receives information from the Airborne Relay Facility (ARF) through a secure data link. The operators in the IPF process the collected information and report the intelligence to the tactical commanders and other possible joint consumers via the JTT relay on board the aircraft.

General Characteristics:

Components: 12 x RC-12 aircraft, 4 x IPF vans, 3 x IDL trackers, CTT.

Sensors: Advanced QUICKLOOK ELINT collection & DF, COMONT collection and DF.

Flexibility: Remote relay capability, scaleable system for rapid deployment (aircraft are self deployable).

Range: Line-of-sight coverage 450 km from aircraft. Data link range: 150 miles line-of-sight.

Endurance: 5.5 hours.

Targets: communications emitters, jammers, noncommuncations emitters.

Acronyms

AFDD	Air Force Doctrine Document
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CBRN	Chemical, biological, radiological and nuclear
CONUS	Continental United States
CRS	Congressional Research Service
CSIS	Center for Strategic and International Studies
DNMG	Defense News Media Group
DoD	Department of Defense
EOD	Explosive Ordinance Disposal
EU	European Union
FID	Foreign Internal Defense
HN	Host Nation
HUMINT	Human intelligence
IDAD	Internal Defense and Development
ISR	Intelligence, Surveillance and Reconnaissance
JP	Joint Publication
MOOTW	military operations other than war
NATO	North Atlantic Treaty Organization
NSS	National Security Strategy
PSYOP	Psychological operations
SIGINT	Signals intelligence
UAV	Unmanned Aerial Vehicle
US	United States
WMD	Weapons of mass destruction

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