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FUTURE ROLES OF AIR AND SPACE POWER IN  
COMBATTING TERRORISM

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### *Abstract*

Terrorism poses a growing threat to the United States, its interests, and its allies. The political, economic, and informational instruments of power play primary roles in addressing and eliminating the root causes behind terrorism attacks, but the military instrument will prevent some attacks and retaliate for others. Air and space power is one of the primary components of the military instrument in the battle against terrorism. This paper begins with an overview of US national and Department of Defense counterterrorist (CT) policies, performs a systems model analysis of a terrorist organization to better understand targeting of the same, reviews current air and space power CT capabilities, and concludes with recommendations for future ones.

Air and space power contributes to current CT capabilities by providing global mobility for special operations forces, air superiority to protect those forces, and precision strike capability to target terrorist infrastructures. It also provides intelligence critical to deterring, preempting, and answering terrorist attacks, and provides psychological operations support to help erode terrorist will and popular support. Although there is no “silver bullet” to use against terrorists, future improvements in air and space power will enhance CT capability effectiveness and provide expanded options.

This paper’s research consisted of review of primary and secondary sources and interviews with terrorism and targeting experts.

## Chapter 1

### Introduction

*Let terrorists be aware that when the rules of international behavior are violated, our policy will be one of swift and effective retribution....*

—President Ronald Reagan<sup>1</sup>

Statistical analysis and simple observation of events over the last 30 years reveal American citizens, assets, and interests have been the preferred target of international terrorists.<sup>2</sup> For a variety of reasons (breakdown of the bi-polar international system and its inherent constraints on some terrorist organizations formerly sponsored by the Soviet Union; increase in religious, ethnic, and cultural conflict; the publicity generated by attacking and damaging, and thus embarrassing a superpower; American presence and involvement overseas; American success in Desert Storm deterring potential foes from challenging the United States conventionally; etc.), the United States (US)—especially its military forces—probably will be the focus of even more terrorist attacks in the future. Consequently, the US needs an effective program to combat terrorism.

The political, economic, and informational instruments of power play primary roles in addressing and eliminating the root causes behind terrorist attacks, but the military instrument will prevent some attacks and retaliate for others. If military force is to be a viable deterrent, let alone an effective option, the United States must have the will and

capability to employ it (and our foes need to clearly understand this). Air and space power is one of the military instrument's primary components in the battle against terrorism. This paper reviews the current air and space power counterterrorist capabilities and recommends future ones.

## **Design**

The paper begins with a brief overview of US national policy to combat international terrorism and the Department of Defense (DOD) counterterrorism policy. It then applies Colonel John Warden's system model to analyze a state-sponsored terrorist organization and identify its centers of gravity. Next, the paper discusses the current, traditional roles of air and space power in combatting terrorism, and divides them by phase of application. The paper concludes by suggesting future roles and applications of air and space power in the battle against terrorism, and recommends some areas for future study.

## **Research Methodology**

The research method employed for this paper entailed review and analysis of primary and secondary sources, both historical and contemporary. Primary sources included, but were not limited to, presidential statements, directives, and executive orders; US Government policy statements, directives, and reports; DOD, Joint Staff, and United States Air Force (USAF) directives, instructions, and reports; interviews with terrorism experts; and an interview with Colonel Warden specifically addressing analysis of terrorist organizations. Secondary sources used included various professional, scholarly, and journalistic articles concerning terrorism and counterterrorism options.

Note that although there is a plethora of information on terrorist activities and counterterrorist programs at the classified level, this paper was intentionally limited to discussions at the unclassified level to make it available to the broadest possible audience. Since it does not attempt to address specific incidents or capabilities in detail, but rather deals with the broad considerations of roles for air and space power, the classification restriction is not considered a limitation.

## **Operationalization**

This paper examines the current and future roles of air and space power in combatting terrorism, but does not seek to determine when to use military force. Nor does this paper enter into philosophical discussion or legal arguments about the right of self-defense or legality of peacetime reprisal. Those are policy decisions for our National Command Authorities (NCA), and numerous other papers debate those issues. This paper is written from the perspective that the NCA has already decided to employ the military instrument of power. By discussing the counterterrorism roles of air and space power, the paper provides decisionmakers and planners with information to make informed decisions and better exploit air and space power capabilities.

Although domestic terrorism is a significant threat, since the Posse Comitatus Act prohibits using the military in a domestic law enforcement role except in emergency situations and specially authorized by the Constitution, Congress, or the President in his authority as Commander in Chief and Chief Executive<sup>3</sup>, this paper confines its discussion to international terrorism. Also, since it is almost impossible to preempt actions of small, independent terrorist groups without human intelligence provided by someone connected

to the group, this paper concentrates its analysis on the generally larger, state-sponsored groups.

Finally, it needs to be stated that in this age of military drawdowns and declining resources, this paper is not an attempt to justify existing forces or their expansion. It merely seeks to clarify how air and space power can contribute to the battle against terrorism and how its particular strengths can best be utilized.

## **Definitions**

Like obscenity, it is sometimes suggested that what constitutes terrorism lies in the eye of the beholder: “One man’s terrorist is another man’s freedom fighter.” Also like obscenity, most find it difficult to agree on a specific definition of terrorism, but “recognize it when they see it.” Therefore, it is necessary to establish a common framework by defining key terms used in this paper. Unless otherwise noted, all definitions are taken from Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*.

**Terrorism:** The calculated use of violence or threat of violence to inculcate fear intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.

**International Terrorism:** Terrorism in which planning and execution of the terrorist act transcends national boundaries. In defining international terrorism, the purpose of the act, the nationalities of the victims, or the resolution of the incident are considered. Those acts are usually planned to attract widespread publicity and are designed to focus attention on the existence, cause, or demands of the terrorists.

**State-directed Terrorism:** Terrorist groups that operate as agents of a government, receiving substantial intelligence, logistical, and operational support from the sponsoring government.

**State-sponsored Terrorism:** Terrorist groups that generally operate independently, but receive support from one or more governments.

**Antiterrorism (AT):** Defensive measures used to reduce the vulnerability of individuals and property to terrorist acts, to include limited response and containment by local military forces.

**Counterterrorism (CT):** Offensive measures taken to prevent, deter, and respond to terrorism. Note Joint Pub 3-07, *Joint Doctrine for Military Operations Other Than War*, states “Counterterrorism provides response measures that include *preemptive* (italics added), retaliatory, and rescue operations.”<sup>4</sup>

**Aerospace power<sup>5</sup>:** Per Air Force Manual 1-1: “Aerospace power grows out of the ability to use a platform operating in or passing through the aerospace medium for military purposes.”<sup>6</sup> “Platforms used to exercise aerospace power include fixed- and rotary-wing aircraft, ballistic and cruise missiles, and satellites.”<sup>7</sup> (Thus, as defined, the USAF is not the sole possessor or practitioner of air and space power, although it is the largest and most powerful.)

## Notes

<sup>1</sup>Presidential Inaugural Address, 27 January 1991. *New York Times*, 28 January 1981, p. A14.

<sup>2</sup>According to the most recent RAND Chronology of International Terrorism, between 1968 and 1988 “the United States has annually headed the list of countries whose nationals and property are most frequently attacked by terrorists.” From 1986-88, the proportion peaked at approximately one-third of all attacks. In contrast, in 1988 the

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number two countries on the list were Israel and France, each representing 8% of all international attacks. (See *The RAND Chronology of International Terrorism for 1988*, Santa Monica, CA: RAND, 1982, p. 6.) Although the methodology and criteria used may not necessarily be the same, according to the US Department of State, anti-US international terrorist attacks represented 31-55% of all noted attacks annually between 1989-1993, peaking at 55% in 1992 (because of attacks directly related in reaction to the Gulf War). Anti-US attacks represented 21-23% of all attacks noted annually in 1993-1995. (See annual *Patterns of Global Terrorism* reports, Washington, DC: Department of State, 1989-1996.)

<sup>3</sup>The Posse Comitatus Act (18 U.S.C. S1385) was first passed in 1878, and has been reaffirmed and clarified several times since then, states "...it shall not be lawful to employ any part of the Army of the United States, as a posse comitatus, or otherwise, for the purpose of executing the laws, except in such cases and under such circumstances as such employment of said force may be expressly authorized by the Constitution or by act of Congress..." Before the Air Force was established as a separate service in 1947, it was subject to the Posse Comitatus Act as a part of the Army. Technically it was not brought back under the provisions of the Act until 10 August 1956 when the Act was amended to include the Air Force. It is unclear why the Navy and Marine Corps were never included in the Act and thus are not subject to it, but this was remedied as a matter of policy by SECNAV Instruction 5820.7 (15 May 1974) unilaterally subjecting the two maritime services to its provisions. The Coast Guard is not subject to the Posse Comitatus Act even when subordinated to the Navy during time of war. (See Judge Advocate General School, *Law of Military Installations: Military Aid to Law Enforcement*, US Army War College, Carlisle Barracks, PA, 2 April 1984; Baranzini, *Military Support to Law Enforcement and Posse Comitatus*, Naval War College, Newport, RI, 18 June 1993; Nance, *The Posse Comitatus Act: A Study of Restrictions on Military Enforcement of the Civil Law*, AFIT Masters Thesis; California State University, CA, 1984; and Rice, *New Laws and Insights Encircle the Posse Comitatus Act*, US Army War College, Carlisle Barracks, PA, 26 May 1983.)

<sup>4</sup>Joint Pub 3-07, *Joint Doctrine for Military Operations Other Than War*, 16 June 1995, p. III-2.

<sup>5</sup>Note: the current Air Force Chief of Staff, General Fogleman, has refined this term to "air and space power." Consequently, although these two terms are interchangeable, all further references in this paper will use the current form.

<sup>6</sup>Air Force Manual 1-1, Vol. 1, March 1992, p. 5.

<sup>7</sup>AFM 1-1, Vol. 2, March 1992, p. 72.

## Chapter 2

### US Policies to Combat Terrorism

*The U.S. position on terrorism is unequivocal: firm opposition to terrorism in all its forms and wherever it takes place. . .The U.S. Government is opposed to domestic and international terrorism and is prepared to act in concert with other nations or unilaterally when necessary to prevent or respond to terrorist acts.*

—The Public Report of the Vice President's  
Task Force on Combatting Terrorism<sup>1</sup>

#### National Policy

Current US policy on countering international terrorism was first fully iterated in the Reagan Administration and has been reaffirmed by every president since. It follows three basic rules<sup>2</sup>:

- The US will make no concessions to terrorists<sup>3</sup>
- The US will treat terrorists as criminals and apply the rule of law
- The US will apply maximum pressure on state sponsors of terrorism

The Clinton Administration added a corollary to these rules: helping other governments improve their capabilities to combat terrorism. This is sometimes addressed as an example of US Government cooperation with other governments in an international effort to combat terrorism, while at other times it is included as a fourth rule of policy.<sup>4</sup>

The *Omnibus Antiterrorism Act of 1979* firmly established the lead agency concept for coordinating the US response to terrorism. State and local governments are responsible for terrorist incidents committed in the US if no federal laws are broken. The Department of Justice, specifically the Federal Bureau of Investigation (FBI), is responsible for domestic incidents that fall under Federal jurisdiction. One notable exception to this is that the Department of Transportation has lead agency responsibility under certain circumstances: specifically, the Federal Aviation Administration is responsible for terrorist incidents that take place on aircraft in flight<sup>5</sup> within US jurisdiction and the Coast Guard is the lead agency for terrorist incidents directed against US citizens on passenger or cargo vessels within US waters. (The Navy has responsibility if the incident takes place on a ship moored within a US port.) The Department of State has the lead for all terrorist incidents against US Government-associated facilities, personnel, and material that take place outside the US, its territories, and possessions. Installation commanders are responsible for initially responding to terrorist attacks against bases within the US, but the FBI has jurisdictional authority.<sup>6</sup>

Being the lead agency does not equate to exclusive jurisdiction. During a terrorist incident, the lead agency establishes an interagency working group to coordinate all supporting agency and department activities. “The Assistant to the President for National Security Affairs resolves any uncertainty on the designation of lead agency or responsibilities.”<sup>7</sup>

## Department of Defense Policy

The DOD addresses terrorism from two perspectives: antiterrorism (defensive measures) and counterterrorism (offensive measures). DOD antiterrorism policy and responsibilities are delineated in DOD Directive 2000.12, *DOD Combatting Terrorism Program* (September 15, 1996). Counterterrorist policy is authorized and outlined in various classified Presidential Decision Directives (PDDs), National Security Directives and Decision Directives (NSDs and NSDDs), and Department of Defense Directives (DODDs).

Counterterrorism (CT) activities generally fall within the realm of special operations and thus within the overall responsibilities of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict (ASD/SOLIC).<sup>8</sup> Planning for CT operations is generally very sensitive and usually handled in highly compartmented, special access channels. US Special Operations Command (USSOCOM) and its four component commands (three service components: the Air Force Special Operations Command—AFSOC; the Naval Special Warfare Command—NAVSPECWARCOM; the US Army Special Operations Command—USASOC; plus the Joint Special Operations Command—JSOC) are responsible for ensuring special operations forces are prepared to carry out their assigned missions.<sup>9</sup> Each geographic unified command (US Atlantic Command, US Central Command, US European Command, US Pacific Command, and US Southern Command) has its own subordinate unified command that serves as a component command for special operations. Actual operations are carried out by forces assigned to or under the operational control of this component command. They can also be performed by units assigned special missions by the NCA.

CT operations can also be performed by conventional forces. Examples of this include the retaliatory airstrikes of Operation Eldorado Canyon conducted against Libya on 14 April 1986 and the cruise missile strikes against the Iraqi Intelligence Service headquarters building on 26 June 1993.

### Notes

<sup>1</sup>*The Public Report of the Vice President's Task Force on Combatting Terrorism*, February 1986, p. 7.

<sup>2</sup>See Department of State annual report, *Patterns of Global Terrorism 1995* (p. iv) and earlier reports.

<sup>3</sup>The no concession policy was first expressed by the Nixon Administration in 1972 after the terrorist attack on Israeli athletes at the 1972 Olympics in Munich. (See Gallis and Wootten, *Combatting State-Supported Terrorism: Differing U.S. and West European Perspectives*, CRS Report for Congress, April 21, 1988.)

<sup>4</sup>For examples of the former, see State Department annual *Patterns of Global Terrorism* reports. For examples of the latter, see President Clinton's *A National Security Strategy of Engagement and Enlargement* (February 1996).

<sup>5</sup>Under U.S.C. 1356, the FAA has exclusive responsibility for the safety and security of aircraft in flight within US jurisdiction. For the purposes of the lead agency concept, "in flight" is defined as when the doors of the aircraft are closed, secured, and the aircraft is no longer dependent on ground service. (See DOD 0-2000.12-H, February 1993, p. 3-6.)

<sup>6</sup>"Military installation commanders are responsible for providing the initial and immediate response to any incident occurring on the installation. . . Unless a service member is a suspect in the incident, the FBI will eventually assume lead investigative responsibility for the incident, and the DOJ will prosecute, if appropriate." (DOD 0-2000.12-H, *Protection of DOD Personnel and Activities Against Acts of Terrorism and Political Turbulence*, February 1993, p. 4-2.)

<sup>7</sup>Joint Pub 3-07, p. III-3.

<sup>8</sup>The Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict was created, along with the US Special Operations Command (USSOCOM), by the Nunn-Cohen Amendment to the Goldwater-Nichols Defense Reorganization Act of 1986, partly in response to the special operations deficiencies noted in Operation Eagle Claw (the Iranian hostage rescue attempt in April 1980) and Operation Urgent Fury (the military intervention in Grenada in October 1983).

<sup>9</sup>USSOCOM Pub 1, *Special Operations in Peace and War*, 25 January 1996, p. 2-19.

## Chapter 3

### Targeting a Terrorist Organization

*From an air power standpoint, it is our job to determine what price (negative or positive) it will take to induce an enemy to accept our conditions. To do so however, we need to understand how our enemies are organized.*

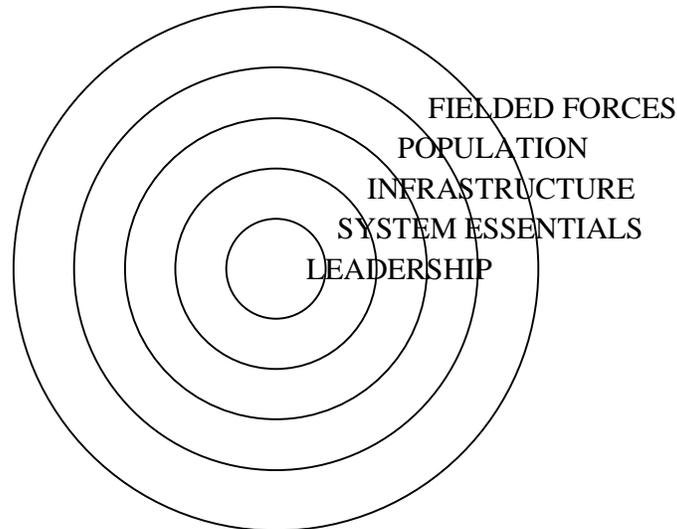
—Colonel John A. Warden, III<sup>1</sup>

For air and space power to be effectively and decisively employed against any targeted system, understanding how the system is organized and identifying its centers of gravity is critical. There are various ways to do this, but an effective method is using Colonel John Warden’s systems analysis model (commonly referred to as the “five rings model”), which was applied with devastating effect during the Gulf War against Iraq.

#### Systems Analysis Model

Colonel Warden states every life-based system—whether it be a state, a criminal or military organization, business, or even the human body—is organized about the same. There is a leader or leadership entity controlling the organization. There are certain system essentials required by the organization to function or exist, and these essentials are moved through a supporting infrastructure. The organization has a population enabling it to function, and it has fielded forces to defend it from attack. This hierarchical

relationship can be graphically outlined in a diagram of five concentric rings. (See Figure 1.) Besides displaying the interdependence of the entities represented by each ring, the diagram also illustrates the relative importance of each with leadership as the central, overarching element.<sup>2</sup>



**Figure 1. System Model**

The next analytical step is to identify key subsets of each of the five rings. (These can be collectively displayed by converting the ring diagram into a table.) Then, to identify centers of gravity for each subset, another five ring analysis can be performed. This process is continued until key components or nodes that must be paralyzed or negated to achieve the objective are identified and there is sufficient information to act.

Ideally, to impact an enemy and convince them do what is wanted, efforts should be directed against the center, most important ring. But as Warden points out, the leadership cannot always be located, or it may be too heavily defended or impervious to the weapons available. In that case, one works from the center ring outward, attacking the next most important element that can be effectively impacted. In other words, if the leadership ring

is not vulnerable to existing capabilities, attack the system essentials or infrastructure and prevent the leadership from exercising its power and influence. The outer rings will likely have more targets to attack and require more effort to achieve the desired effects.

### **Application to Terrorist Organization**

Warden’s five-ring model can help to analyze and better understand a terrorist organization. The results of the model applied to an international terrorist organization are shown in Table 1.<sup>3</sup>

All terrorist organizations have a leadership entity, whether it be a charismatic individual or a group of individuals serving in concert to guide the group’s decisions and actions. Some terrorist organizations such as the Irish Republican Army have an overt political arm with its own leadership structure (the Sinn Fein), while others have overt military or paramilitary arms such as the Palestine Liberation Army of the Palestine Liberation Organization. Religiously-motivated groups such as Hezbollah have influential religious leaders, while some organizations have overt leaders who interact with the media while maintaining a covert leadership outside public view. Of particular importance to this paper is the leadership contained within a state that either sponsors or directs international terrorism.

**Table 1. International Terrorist Organization Structure**

LEADERSHIP	SYSTEM ESSENTIALS	INFRA-STRUCTURE	POPULATION	FIELDER FORCES
Terrorist leaders	Command and control	Transportation network	Support - Family - Co-religionists	Terrorist cells/ units

LEADERSHIP	SYSTEM ESSENTIALS	INFRA-STRUCTURE	POPULATION	FIELDDED FORCES
Overt political arm	Weapons development/ procurement	Training camps Safe areas/safe havens	- “Anti-population” Trainers	
Overt military/ paramilitary arm	Financial network		Engineers	
Religious leaders	Supply network		Financiers	
Media leaders	Documentation			
State Sponsor *	Publicity Intelligence			
* Or “state” if state-directed				

All terrorist organizations require certain system essentials to exist and conduct their acts. They must have a command and control system to communicate their leadership’s decisions and directives. They require money and a financial network to move funds in order to meet operating costs and fund activities. They need to procure some weapons (firearms, explosives, etc.) and develop others (bombs and a variety of detonating devices). Terrorist organizations also require non-lethal supplies, documentation for identification and travel, and intelligence to plan and execute attacks. In particular, most terrorists need the publicity their activities generate to draw support or attention to their cause. It is not the actual casualties that have the desired impact, but the terror and subsequent media attention caused by the attack; without publicity and public awareness, terror is contained and causes ignored.<sup>4</sup>

Infrastructures are necessary to transport individuals, weapons, and in some cases hostages. (Public transportation systems may be utilized, but in other cases, secure, covert

transportation is needed.) Training camps are needed to indoctrinate members and train them on the ways and weapons of terror. Additionally, safe havens are needed where terrorists can plan, prepare, and, after attacking, seek sanctuary.

The population ring consists of the internal and external support elements that allow a terrorist organization to function. Internally, the organization has trainers, weapon developers/engineers, financiers, etc. Externally, there are family members who do not actively participate in the group but can provide basic necessities of food and shelter for individual members to survive. For terrorist groups motivated by religious ideals, co-religionists, although not active participants, may provide financial or moral and ideological support. Also, within the general populace there is an element that can be referred to as the “anti-population.” This element does not actively participate in or support the terrorist group, but embraces its desired goals or end state, and tolerates its methods and presence.

In the outermost ring are the terrorist organization’s fielded forces: its individual cells or units. Due to their number and dispersion, these are the least efficient and possibly the most difficult components to target. Except to temporarily impede terrorist operations or preempt a specific attack, attacking fielded forces is also probably the least productive option unless the near impossible can be achieved, and the entire organization is captured or annihilated.

### **Cautionary Note**

The system model helps better understand a terrorist organization and, consequently, better target it for military operations. However, due to the fanatical nature of most

terrorists, applying military force is unlikely to change their commitment to their organization or cause.<sup>5</sup> Like effective antiterrorism measures that seek to deter a terrorist attack by making it too difficult or costly (in terms of physical and human resources), military counterterrorist actions may only temporarily disrupt or delay terrorist actions or cause the terrorists to seek easier targets or more effective weapons. Military force may also provoke further, retaliatory attacks.

In instances where states sponsor terrorist actions to wage a form of undeclared war against another state, effective use of the military instrument of power can cause the sponsoring state to curtail or cease its action. As Colonel Warden points out, an “enemy leadership acts on some cost/risk basis...”<sup>6</sup> Unless the sponsor state is willing to escalate to war, it will keep the level of terrorist violence below the threshold which prompts a response. More effective employment of air and space power will enable the US to lower that threshold while increasing the penalty of the sponsoring state.

### Notes

<sup>1</sup>Warden, Col John A. III. *Air Theory for the Twenty-first Century, Challenge and Response: Anticipating US Military Security Concerns* (Maxwell AFB, AL: Air University Press, August 1994), p. 314.

<sup>2</sup>Ibid., pp. 314-317.

<sup>3</sup>Special thanks to Col John Warden for expanding on a list proposed by the author and for clarifying the application of his model to analyze a terrorist organization.

<sup>4</sup>As a Defense Intelligence Agency analytical paper points out, this is not necessarily true with religiously motivated terrorists who may use terrorism as a form of punishment. “As a consequence, they seem not just more willing to cause large numbers of casualties but intent on doing so. (DIA White Paper on Weapons of Mass Destruction produced for USSOCOM, Fall 1996, p. 4.)

<sup>5</sup>Several authors have written about the fanaticism of contemporary terrorists and the “sociology” of terrorism. In particular, see Walter Laqueur’s seminal work, *The Age of Terrorism*.

<sup>6</sup>Warden, p. 319.

## Chapter 4

# Current Roles of Air and Space Power in Combatting Terrorism

*When peaceful means fail and the use of military force is feasible, we need the world's best specialized military expertise to rescue victims of terrorism, apprehend terrorists, or deter acts of terrorism...*

—Ambassador Philip C. Wilcox, Jr.  
Coordinator for Counterterrorism<sup>1</sup>

Air and space power plays a role in every counterterrorism operation. Sometimes its contribution is in a support role such as intelligence collection or mobility, other times it is in an operational role such as striking a terrorist-associated facility, but all its contributions are critical. This chapter reviews the traditional or current air and space power roles in the battle against international terrorism. They can be grouped into six broad categories.

### Airlift

For CT forces to be effective, it is vital they respond to terrorist incidents in a timely manner, and airpower provides the airlift necessary for CT forces to be responsive. This includes the global mobility strategic airlift provides to move CT forces, equipment, and weapons to anywhere in the world. Also, insertion and extraction capability for special operations forces (SOF) is provided by fixed- and rotary-wing aircraft.

## **Air Superiority**

Although terrorist groups do not have their own air forces<sup>2</sup>, air superiority has occasionally been a factor in counterterrorism actions. Probably the most notable was the intercept of an Egyptian civil airliner by US Navy F-14/Tomcat fighters on 11 October 1985. The aircraft was carrying four Palestinian terrorists (plus their leader, Abu Abbas) who had hijacked the cruise ship Achille Lauro on 7 October and subsequently killed Leon Klinghoffer, a 69-year-old, wheelchair-bound, American citizen. The terrorists had surrendered to Palestinian Liberation Organization officials in Port Said, Egypt, and been granted safe passage to Tunisia by the Egyptian Government. The airliner was destined for Tunisia, but was intercepted by four F-14s from the aircraft carrier Saratoga and forced to divert to Sigonella, Sicily, where the terrorists were to be taken into American custody.<sup>3</sup>

Some analysts equate the US Navy shootdown of two Libyan fighters over the Gulf of Sidra on 19 August 1981 as a CT response.<sup>4</sup> Although the shootdown was not in direct response to a specific terrorist incident, the continued sponsorship of terrorist activities by Muammar Qaddafi and the Libyan government certainly contributed to the Reagan Administration's aggressive demonstrations in the 1980's asserting the US position on the international status of the Gulf's waters.<sup>5</sup>

Air superiority may also be used to protect CT forces engaged in a mission by providing them air defense from a state-sponsor's air forces. Air superiority coverage may be overhead or on-call, reacting only if something goes wrong with the operation or to cover extraction of forces.

## **Strike**

Probably the most visible CT airpower role is strikes against terrorism-associated facilities. These strikes can be conducted by fixed- or rotary-wing aircraft or by cruise missiles. An example of the former is Operation Eldorado Canyon, the 14 April 1986 airstrikes against Libya in response for the 5 April bombing of the La Belle discotheque in West Berlin in which an American serviceman and a Turkish woman were killed and over 150 wounded.<sup>6</sup> An example of the latter is the Tomahawk cruise missile strike against the Iraqi Intelligence Service headquarters in June 1993 in response to the uncovered plot to assassinate former President Bush.<sup>7</sup>

CT strikes can be preemptive or reactive in nature, and involve important considerations. While abstaining from argument about the legality of a preemptive strike, other considerations include the need for meticulous targeting to avoid collateral damage and furnishing sufficient evidence to justify the strike to the American people and international community. Strikes in reaction to a terrorist attack can be conducted to punish the perpetrators or sponsors and to send a message that such action will not go unpunished.<sup>8</sup> However, retaliatory strikes must not be conducted purely for revenge, but should be motivated by clearly defined goals and objectives.

## **Intelligence, Surveillance, and Reconnaissance**

Probably the most important contribution of air and space power to CT is providing intelligence for planning and execution of operations and monitoring of terrorist associated facilities. CT planning and operations require timely, responsive, and accurate intelligence

to succeed, and much of this intelligence gathering can be performed by manned or unmanned aerial vehicles, or overhead national assets (satellites).

Although human intelligence (HUMINT) is the most important intelligence discipline for providing information on terrorist organization and intent, imagery intelligence (IMINT) and signals intelligence (SIGINT) from air and space platforms also provide valuable information for analysis, planning, and execution. Further, space communication platforms also provide the means for rapidly and securely disseminating this information.

### **Psychological Operations**

Psychological operations (PSYOP) can be used to deter or disrupt planned terrorist actions, and to erode their base of support within the local or general population. Air and space power can play an effective role in these areas by deterring state-sponsors of terrorism through physical presence or shows of force. If there is concern a state may sponsor or direct terrorist attacks against a high level meeting of political leaders or a highly visible international event such as the Olympic Games (as North Korea implied with veiled threats against the 1988 Summer Olympics in Seoul<sup>9</sup>), aerospace forces can be overtly deployed within striking distance of the sponsoring state as a visible reminder of the consequences for a hostile act.<sup>10</sup>

Manned or unmanned aerial vehicles can also deliver PSYOP leaflets or conduct PSYOP radio or television broadcasts. These can be directed at the terrorists themselves (as a warning of the consequences for their intended actions) or the local or general population to erode the support base for terrorists and their cause. (PSYOP can be used to counter terrorist propaganda, explain a recent CT terrorist strike or operation in the

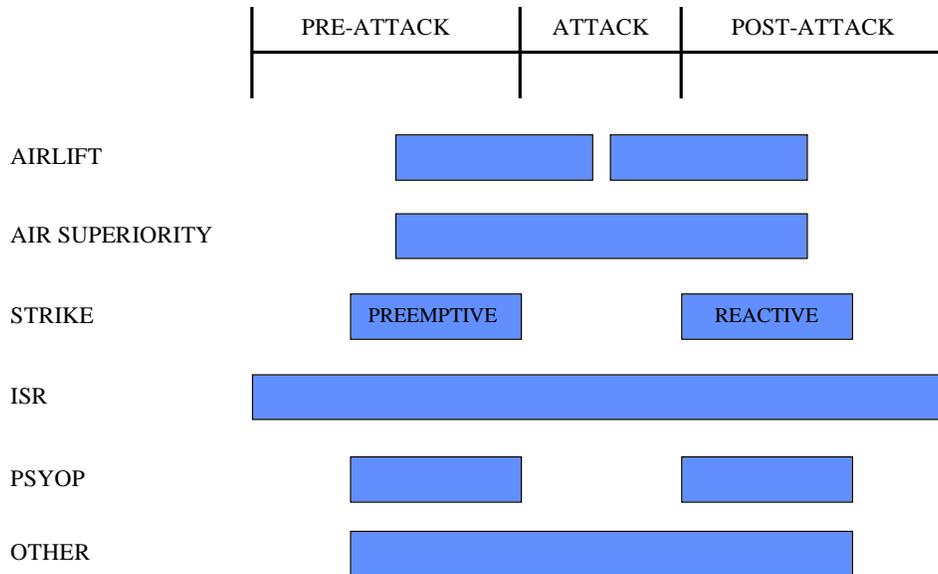
area, explain care taken to avoid civilian casualties and collateral damage in such a strike, etc.) Aircraft overflights can also be used as a form of PSYOP.<sup>11</sup> (For example, the mere overflight of Manila by USAF F-4/Phantom fighters was instrumental in thwarting a coup attempt against the Corazon Aquino government in the Philippines in December 1989.<sup>12</sup>) Of course the possible benefits of PSYOP in a pre-hostilities phase must be weighed against the tradeoff of compromising knowledge of terrorist locations or plans.

### **Other Support**

Air and space forces also provide other support to CT operations and forces. Aircraft can provide logistics support through resupply and provision of CT ground forces in the field. Fighter aircraft, bombers, and gunships can provide overhead or on-call fire support to CT hostage rescue attempts or equipment recovery missions. They can also conduct diversionary operations to focus attention away from the area CT forces are conducting or planning to conduct a mission.

### **Planning Matrix**

To aid planners, a matrix is provided below to graphically illustrate when traditional air and space power roles are normally employed in CT situations. The timeline extends from the entire pre- to post-terrorist attack period.



**Figure 2. Counterterrorism Planning Matrix**

**Notes**

<sup>1</sup>Testimony before the House of Representatives, Permanent Select Committee on Intelligence, Washington, DC, 5 March 1996.

<sup>2</sup>Some do own or operate aircraft though. Palestinian groups have used ultralight aircraft, hang gliders, and balloons in the past to infiltrate across the border into Israel from Lebanon. (See Department of State report, *Terrorist Group Profiles*, Washington, DC, November 1988, pp. 22-23 and 26-27.) The Palestine Liberation Organization operated a Boeing airliner to transport PLO Chairman Yassir Arafat on overt, official trips.

<sup>3</sup>Although the aircraft intercept and diversion was a success, Italian authorities faced off with US special operations forces and refused to allow the apprehension of the terrorists. After a tense standoff between the US forces on one hand and Italian special forces on the ground and Egyptian special forces on the aircraft, the terrorists were eventually handed over to Italian authorities, although they subsequently allowed Abu Abbas to flee Italy. (See Simon, *U.S. Countermeasures Against International Terrorism*, RAND Report R-3840-C3I, March 1990.)

<sup>4</sup>In *Terrorism and the American Response*, Alvin Buckelew offers the incident as an example of the tougher new counterterrorism policy of the Reagan administration. (See pp. 55-56)

<sup>5</sup>Freedom of navigation exercises in the Gulf of Sidra by the USN also resulted in Navy aircraft being fired upon by Libyan surface-to-air missiles on 23 March 1986 and retaliatory airstrikes against several Libyan naval vessels and a radar site early the next morning. (See *U.S. News and World Reports*, 7 April 1986, p. 22.)

<sup>6</sup>Another example would be the 1 October 1985 Israeli airstrikes against the Palestinian Liberation Organization headquarters in Tunis.

<sup>7</sup>*New York Times*, 27 June 1993, p. A1.

## Notes

<sup>8</sup>There is some debate whether reactive strikes have a lasting deterrent impact on terrorist activity. Those on the affirmative side offer as supporting evidence statistics showing the reduction of Libyan-sponsored terrorist acts over the next several years after the 1986 ELDORADO CANYON operation. Those who disagree warn that reactive strikes can lead to escalation in the number or severity of attacks and offer the tit-for-tat example of Israeli reactions to Hezbollah attacks from Lebanon.

<sup>9</sup>See *New York Times*, 7 February 1988, p. A21; 18 March 1988, pp. A1 and A33; and 6 July 1988 pp. A1 and A8. As these references cite, fears of North Korean sponsored terrorist attacks were exacerbated by memories of the 1986 terrorist bomb, believed to have been placed by North Korean agents, that killed five people at Kimpo Airport in Seoul a week before the 1986 Asian games opened and the more recent explosion of a Korea Air airliner over the Thai-Burmese border on 29 November 1987, killing 115, destroyed by a bomb placed by a confessed North Korean agent.

<sup>10</sup>Fighter squadrons and/or a carrier battle group or cruise missile platform can be deployed to the region under the auspices of a training exercise or, in other cases, even openly deployed for possible retaliation without any pretension otherwise.

<sup>11</sup>Some have even suggested the use of a venerable old bird like the B-52/Stratofortress to drop leaflets or conduct overflights in a PSYOP role. (See Herrington, *Use of the B-52 in an Antiterrorist Role*, pp. 10-11.)

<sup>12</sup>See *U.S. News and World Reports*, 11 December 1989, pp. 14-15, and *New York Times*, 2 December 1989, pp. A1 and A6.

## Chapter 5

### **Future Roles of Air and Space Power in Combatting Terrorism**

*Successful adaptation of new and improved technologies may provide great increases in specific capabilities. Conversely, failure to understand and adapt could lead today's militaries into premature obsolescence and greatly increase the risks that such forces will be incapable of effective operations....*

—Joint Vision 2010<sup>1</sup>

Although new CT roles may develop for air and space power in the future, technological advancements will refine and enhance traditional role capabilities. Exploitation of these improved capabilities will expand the range of CT options available to decisionmakers.

#### **Airlift - Insertion and Extraction of SOF**

Current air and space global mobility capabilities are sufficient to meet CT requirements, but shortfalls lie in the ability to insert special operations forces into hostile territory to conduct missions and extract them afterward. With longer range and greater speed capabilities, the V-22/Osprey tilt-rotor aircraft acquisition for AFSOC should largely alleviate current, special operations rotary-wing aircraft limitations. However, with greatly improved air defense equipment for the detection, engagement, and

destruction of aircraft readily available commercially to state-sponsors of terrorism, development of a stealthy air platform for SOF insertion and extraction would increase force survivability and chances of mission success. Optimally, this platform would have at least the same range, speed, payload, and vertical takeoff and landing capabilities of the V-22, and have the capability to fly all-weather, nap-of-the-earth mission profiles.

## **Strike**

The Gulf War with Iraq in 1991 dramatically demonstrated vast improvements in targeting made possible by the advancement in precision guided munitions (PGMs). What is needed to expand the CT options available to the military and NCA are similar improvements in effect, what Colonel Warden and others have referred to as “precision effect” or “precision lethality.”

Knowing the US will respond under severely constrained rules of engagement (ROE) because of concern for avoiding civilian casualties and limiting collateral damage, terrorists often locate their headquarters, offices, and safe houses in heavily populated areas; within buildings which have other primary purposes such as schools; or adjacent to religious or culturally significant structures to avoid retaliatory strikes.<sup>2</sup> An air-to-surface weapon that could be placed through the specific window of a building (entirely possible with PGMs available today), but whose destructive power would be confined to a very limited area (one small room) would give decisionmakers the option of striking targets previously off limits due to collateral damage considerations. Precision lethality would increase the envelope for the discriminate use of force.

Equally valuable would be PGMs with non-lethal effects. These could be used to temporarily disable or disorient terrorists, while reducing threat of injury to hostages, so SOF teams could capture the terrorists for legal prosecution. Non-lethal PGMs also would further reduce collateral damage considerations in situations where even minimal physical destruction is not permissible.

### **Intelligence, Surveillance, and Reconnaissance**

Use of unmanned aerial vehicles (UAVs) for collection of conventional intelligence has increased significantly in recent years<sup>3</sup> and their role in ISR will continue to expand. One of the greatest concerns is possible use of a weapon of massed destruction (WMD)—a nuclear, chemical, or biological (NBC) weapon—by a terrorist group<sup>4</sup>, and here air and space power can play a preventative role.

The USAF has long had aircraft and sensors to “sniff” and detect evidence of nuclear explosions and monitor nuclear testing. But these platforms were designed to operate in international airspace and detect significant quantities of radioactive particles that would be present in the atmosphere after the detonation of a nuclear device or after a nuclear accident. What is needed for CT considerations is a platform capable of operating in a non-permissive environment (within another country’s sovereign airspace) and with sensors capable of detecting the minute quantities of NBC material a terrorist group is likely to possess.

This platform could be a UAV with hypersensitive NBC sensors<sup>5</sup> onboard, or manned or unmanned platforms could be used to emplace remote ground sensors in areas terrorists are suspected of storing or transporting NBC material. These sensors could be fixed in

position and disguised as something innocuous like a rock, or could be sophisticated microbots (tiny robots), conceivably disguised as insects, and capable of propelling themselves into restricted facilities and buildings.<sup>6</sup> Either of these sensors could then transmit detection, identification, and location information back to US intelligence agencies via satellite communications, or to surveillance teams, stations, or aircraft.

UAVs could also provide support to SOF teams during the execution of a CT mission. An overhead UAV could provide real-time IMINT or SIGINT via secure downlink directly to a SOF team engaged in a hostage rescue or a sensitive material recovery mission. Similarly, an armed UAV overhead could provide timely, on-scene fire support to a SOF team without endangering an aircrew.

### **Psychological Operations**

Air and space power can be used to more effectively and efficiently conduct PSYOP against terrorists and their supporters or sponsors. Deterrent show of force operations could be conducted by overtly flying UAVs overhead. Information warfare operations could be conducted against key infrastructure systems (such as air defense command and control systems or electrical networks) of state sponsors or directors as not-so-subtle signals of capabilities and repercussions.

Space-based assets could direct PSYOP radio or television broadcasts at a larger audience than air-breathing platforms and without being exposed to local air defense threats. They can also instantaneously reach interior areas that might otherwise be inaccessible to aircraft, without the need for overflight rights or local operating facilities.

Perhaps the most effective PSYOP weapon is conducting successful CT operations. Although, as discussed earlier in this paper, there is some disagreement as to the effectiveness of CT operations as a deterrent to future terrorist attacks, failure to respond to significant terrorist acts will be interpreted as a sign of weakness and invite additional or more spectacular attacks. Success in CT operations is critical to eliminate or reduce terrorist capabilities and communicate that there is a penalty for unlawful conduct.

### Notes

<sup>1</sup>Joint Vision 2010, p. 7.

<sup>2</sup>For example, Hezbollah's headquarters Lebanon is located on a middle floor of an a high-rise building in Beirut, with apartments located directly above. (See newspaper articles and television coverage about the April 1996 Israeli airstrikes against this headquarters and other Hezbollah targets in Lebanon. In particular, see *New York Times*, 12 April 1996, pp. A1 and A6, and 13 April 1986, pp. A1 and A6.)

<sup>3</sup>Note the USAF's 3 September 1996 formation at Nellis AFB of the 11th Reconnaissance Squadron equipped with Predator UAVs. (Air Force Magazine, November 1996, p. 20.)

<sup>4</sup>As stated in the April 1996 OSD report, *Proliferation: Threat and Response*, "Most terrorist groups do not have the financial and technical resources to acquire nuclear weapons, but could gather materials to make radiological dispersion devices and some biological and chemical agents. Some groups have state sponsors that possess or can obtain NBC weapons. . . Terrorist acts involving NBC weapons represent a particularly dangerous threat that must be countered." (p. 43) As the report explains, some state sponsors of terrorism such as Iran and Libya possess or can obtain NBC weapons, but so far have not provided such weapons to terrorists groups, probably at least partially due to the threat of retaliation should they be identified as the supplier. (ibid.) However, the 20 March 1995 chemical attacks (sarin nerve agent) in Japan by the Aum Shinrikyu cult that resulted in the deaths of 5 people and injury of 5,500 others moved the specter of WMD use by terrorists from the hypothetical to the factual. (Japanese police subsequently charged the cult with an earlier sarin gas attack in Matsumoto in June 1994 that killed 7 and injured 500. See *Patterns of Global Terrorism - 1995*, p. 5.)

<sup>5</sup>Properly defined, these would be measurement and signature intelligence (MASINT) collectors designed to detect specified NBC particles.

<sup>6</sup>"Tiny troops may combat chemical agents", *Air Force Times*, 9 December 1996, p. 42.

## Chapter 6

### Conclusion

*...we must move strongly against new threats to our security...We are working with other nations, with renewed intensity, to stop terrorists... before they act, and to hold them fully accountable if they do.*

—President William J. Clinton<sup>1</sup>

This research project was begun to identify future, unique and un contemplated roles for air and space power in combatting terrorism. Unfortunately, there are no “silver bullets.” Terrorists operate with most of the advantages in this battle, particularly when their targets are within a free and democratic society.

With proper documentation for international travel, terrorists can move about freely in open societies. They choose the time, place, and target of their attack. Even in the aftermath of their carnage, they are afforded all the legal and human rights considerations valued and adhered to by the very societies they attack. They claim to conduct war, but are not bound by the laws of armed conflict and have no concern for noncombatants.

Similar statements can be made about states that sponsor or direct terrorists. These states are either military incapable of waging war against the targeted state(s) or unwilling to risk the consequences. Instead, they use terrorism as “a strategic weapon perhaps as a substitute for ‘conventional warfare’...”<sup>2</sup> They operate in contempt of international law, but are the first to demand its protection.

States may enact all the antiterrorist precautions they can afford, but determined individual terrorists cannot be stopped. They will simply shift their attack to a “softer” target, and even if they could afford it, free societies cannot barricade and protect everything. It requires an unacceptable sacrifice of their freedoms.

There is an effective response to terrorism: a coherent national strategy integrating all the instruments of power to combat terrorists and their sponsors. The US has this, but its effectiveness can be improved and the options available to the NCA expanded.

As a component of the military instrument, air and space power already contributes to our nation’s current counterterrorism capabilities by providing global mobility for special operations counterterrorist forces, air superiority to protect those forces, and precision strike capability to target terrorist infrastructures. Air and space power provides intelligence critical to deterring, preempting, and answering terrorist attacks, and can provide support to psychological operations to help erode terrorist will and popular support.

Future air and space power improvements will enhance the effectiveness of CT capabilities and provide expanded options. Stealth airlift for insertion and extraction of special operations forces could extend the range of feasible ground operations. Precision lethality could broaden the range of target options by narrowing collateral damage considerations. Improved intelligence collection capability could allow detection (and eventual recovery) of nuclear, biological, and chemical weapons materials in the minute quantities likely possessed by terrorists.

There may be no silver bullet to use against terrorists, however future air and space power can improve the lethality and range of conventional capabilities and help reduce the threat.

#### Notes

<sup>1</sup>Second inaugural address, Washington, DC, 4 February 1997. (Text in *New York Times*, 5 February 1997, pp. A14-15.)

<sup>2</sup>Berrong and Gerard, *Combatting the Terrorist Threat*, US Army War College, Carlisle Barracks, PA, 22 May 1985, p. 36.

## *Glossary*

AFB	Air Force Base
AFM	Air Force Manual
AFSOC	Air Force Special Operations Command
ASD/SOLIC	Assistant Secretary of Defense for Special Operations and Low Intensity Conflict
AT	Antiterrorism
CT	Counterterrorism
DIA	Defense Intelligence Agency
DOD	Department of Defense
DODD	Department of Defense Directive
DOJ	Department of Justice
FBI	Federal Bureau of Investigation
HUMINT	Human intelligence
IMINT	Imagery intelligence
ISR	Intelligence, surveillance, and reconnaissance
JSOC	Joint Special Operations Command
MASINT	Measurement and signature intelligence
NAVSPECWARCOM	Naval Special Warfare Command
NBC	Nuclear, biological, and chemical
NCA	National Command Authorities
NSD	National Security Directive
NSDD	National Security Decision Directive
OSD	Office of the Secretary of Defense
PDD	Presidential Decision Directive
PGM	Precision guided munition
PLO	Palestine Liberation Organization

PSYOP	Psychological Operations
ROE	Rules of engagement
SIGINT	Signals intelligence
SOF	Special operations forces
USACOM	US Atlantic Command
USAF	United States Air Force
USN	United States Navy
USASOC	US Army Special Operations Command
USCENTCOM	US Central Command
USEUCOM	US European Command
USPACOM	US Pacific Command
USSOCOM	US Special Operations Command
USSOUTHCOM	US Southern Command
WMD	Weapons of mass destruction

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