

Drone Warfare as a Military Instrument of Counterterrorism Strategy

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Abstract*

In this paper, I explore how the drone aircraft fits into military strategy. The United States Air Force and other air forces all over the world are currently evaluating how to incorporate the technology in an arsenal, and this analysis postulates that drones have a place in modern and future warfare. Specifically, the drone is a highly effective instrument of counterterrorism. Terrorism, highly elusive and adaptive, must be smitten down pervasively and aggressively. In order to do so, a nation must (1) identify the threat and (2) eliminate the threat. The drone contributes to the counterterrorism mission by providing pervasive intelligence and aggressive strike capabilities. Both of these capabilities, combined and unified in a single aircraft platform, hinder the operational capacity of the terrorist organization by eliciting fear, fracturing communication, and decimating command and control.

*By "drone", I am referring to what the US Air Force denotes as "remotely piloted aircraft", specifically aircraft like the MQ-1 Predator, MQ-9 Reaper, etc.

Introduction

Since 2008, the United States has increased the number of overseas drone operations.¹ In Pakistan, for example, drone strikes have increased from 38 in 2008 to 375 in 2014. Targeting al Qaeda and Taliban militants, the drone campaign has been responsible for more than 2400 deaths worldwide.² Furthermore, Congress is currently funding the expansion of the drone fleet by a third of its current size within the next decade, a \$40 billion expansion.³ Clearly interested in the aircraft's place in future warfare, Congress tasked the Government Accountability Office with analyzing, assessing, and improving the US Air Force's drone program to ensure its viability in the future.⁴ Likewise, other Air Forces (including French, Italian, and German) are also testing the use of drones in the Middle East and Africa. There is a definite military interest in this technology.

I seek to explore the root of this interest. Specifically, this paper provides an analysis of how an air force may use the drone in one specific area of foreign policy: counterterrorism. I will use historical examples of US Central Intelligence Agency (CIA) and Department of Defense (DoD) drone operations in order to illuminate how the aircraft fits into a nation's military arsenal. I hope that this analysis will pave a purpose for the drone and prescribe focus for future technological development. I claim that the drone is an effective instrument of counterterrorism strategy because of its capabilities to simultaneously collect intelligence and strike targets. Furthermore, by effectively employing both at the same time, the drone significantly disrupts the operational capacity of a terrorist organization.

Counterterrorism Strategy

To understand how drone warfare contributes to effective counterterrorism, it is important to clarify a general distinction between counterterrorism and counterinsurgency. Counterterrorism and counterinsurgency are two different styles of warfare; counterterrorism focuses on the enemy while counterinsurgency focuses on the population.⁵ For example, counterterrorism often involves disrupting terrorists' ability to conduct operations while counterinsurgency often involves building and solidifying domestic institutions and society ('hearts and minds'). But, these two forms of warfare can be counteracting, producing a variety of potential offsetting effects. Some Pakistani civilians living in Waziristan, for example, lash back at the United States' use of counterterrorism drones in the tribal regions, claiming that the civilian casualties are intolerable. As a result, roughly three fourths of Pakistanis conclude that the US is Pakistan's primary antagonist.⁶ Evidently, the topic of drone warfare is vast, and in order to limit the scope of this particular paper, I want to analyze drone warfare solely in the light of counterterrorism strategy, not counterinsurgency strategy. Therefore, I will not elaborate on many of the important offsetting effects, such as civilian casualties, foreign sentiment, or international legality. These are, without a doubt, topics of interest for more comprehensive review on national strategy, as a multitude of other military technology may also produce these offsetting effects. Rather, I will limit this analysis to a hypothetical world in which there only exist two entities: the terrorist organization and the target nation. By doing so, I will be able to analyze how the drone combats terrorist organizations directly.

Counterterrorism involves two phases of disrupting terrorist operations: (1) identifying the threat and (2) eliminating the threat. Firstly, a nation must seek out the enemy combatants through intelligence. Secondly, a nation must take aggressive action against the combatants, forcing the terrorists to disperse deeper into the shadows to avoid being targeting. Thus, the target nation must once again seek out the combatants through intelligence so that it can take aggressive action in the future. In that sense, counterterrorism is cyclical, with intelligence leading to strikes, and strikes leading to the demand for more intelligence.

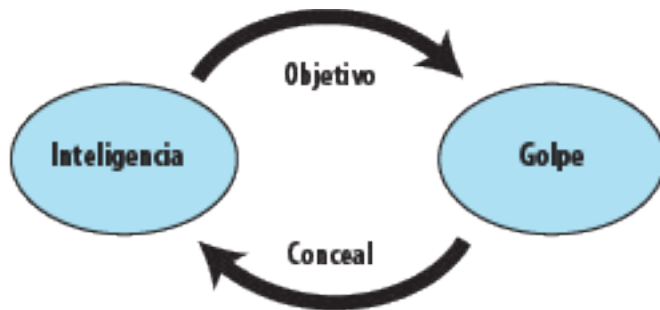


Figure 1: Cyclical Phases of Counterterrorism

The drone is an efficient counterterrorism instrument because it simultaneously and continuously conducts reconnaissance and strikes at the same time. The drone applies pressure in both spheres, saving costs and minimizing coordination between systems and agencies. Gradually, the constantly increasing military pressure in both spheres would suffocate the terrorist organization's operations. In the following sections, I will discuss how a drone collects intelligence and strikes, the impact on terrorism, and the need for a multilateral counterterrorism approach.

Identifying the Threat: Intelligence, Surveillance, and Reconnaissance

The Intelligence Cycle

The nature of a terrorist organization is versatile and adaptive. According to the CIA's strategy for counterterrorism, terrorism often does not originate from a single aggressor or location.⁷ Rather, the threat is often multilateral and international. It is extremely difficult, therefore, to disrupt the operational capacity of a terrorist organization because a nation may not be able to assess from where or whom the next threat will emerge. From the USS Cole attack to the Fort Hood shootings to the Boston Marathon bombing, individuals anywhere in the world - including US citizens - can wage terror against a civilian population. Furthermore, the threat is constantly adapting to counteraction taken by the defending nation.⁸ For example, al Qaeda used covert messaging systems and secret meetings to avoid detection by United States intelligence services.⁹ Terrorism is highly elusive.

For this reason, effective intelligence is necessary to combat this sort of unconventionalism. Intelligence, one of the most "critical tools for counterterrorism," is "knowledge that has been specifically prepared to answer a question, verify a situation, or provide understanding" to a particular circumstance.¹⁰ Targeted intelligence is gathered from any number of sources and refined through synthesis and analysis before dissemination to the appropriate sources for subsequent action.¹¹ This process is known as the intelligence cycle and is essential for identifying the terrorist network.

Aerial Reconnaissance

The drone is a highly effective intelligence asset. In fact, USAF testimonials indicate that around 97% of mission time is dedicated purely to reconnaissance.¹² The aircraft contributes to the intelligence cycle because it continuously and simultaneously collects and distributes information. Specifically, it collects intelligence efficiently via advanced visual equipment and long

loiter capabilities. Both the Predator and the Reaper drones are equipped with high definition and thermal cameras on the undersides of their fuselages. These cameras are powerful enough to zoom and read the license number on a driver's ID card.¹³ Pilots use the cameras' high-powered capabilities when searching for and following potential targets.¹⁴ In this way, the aircraft collects useful intelligence about the behavioral patterns of the enemy (ie: family ties, associations, daily activities) while flying at a high altitude, unseen to the target on the ground. Furthermore, aerial imagery technology is vastly improving. For example, the US Air Force is experimenting with a high-tech camera system known as the Gorgon Stare.¹⁵ The Gorgon Stare essentially combines the visual capacity of multiple advanced cameras, allowing the aircraft to observe areas that are 4 kilometers in diameter. Some US Air Force Reaper drones have already been equipped with this new system, allowing pilots and intelligence analysts to observe parts of entire cities at one time. In this way, the drone is highly effective for gathering a large amount of visual data.

Additionally, the drone loiters in the air longer than a conventional manned aircraft, maximizing reconnaissance time. Because it has no pilot or a cockpit, the weight of the aircraft is significantly minimized.¹⁶ The operator, therefore, can cut down the its size and increase its capacity to store more fuel, resulting in a leaner, more efficient aircraft. The Predator drone, as a result, can fly an average of 24 hours.¹⁷ Furthermore, drones operate in combat air patrols in order to ensure constant surveillance.¹⁸ Each combat air patrol consists of four alternating aircraft. Typically, one aircraft acquires intelligence, one flies back to base for refueling, one refuels at the base, and one flies to relieve the operational drone. In this way, drone operators can ensure that the aircraft loiters as long as possible over a given area, increasing the chance that intelligence analysts will identify a target.

Not only can a drone collect intelligence, but also it can easily distribute it to other entities. The images collected from 'eyes in the sky' aircraft are transmitted via satellite to pilots at Air Force bases in the United States, like Creech AFB.¹⁹ Because the entire process is electronic, intelligence feeds can be stopped, played, rewind, and fast-forwarded from virtually anywhere in the world that has a connection to the satellite link. Joint Special Operations Command (JSOC) or the CIA may also view the drone feed and provide guidance through networked chatting channels. A drone, therefore, not only surveys the battlefield, but it also distributes intelligence to other counterterrorists.

Two specific counterterrorism operations highlight the intelligence-gathering capabilities of drones. These case studies were chosen because they are high-profile examples of identifying the location of top leaders of prominent terrorist organizations (al Qaeda in Iraq and al Qaeda). Abu Musab al-Zarqawi, a "raw psychopathic killer born for a war without moral limits on brutality", terrorized Fallujah, Iraq.²⁰ From beheadings to abductions, Zarqawi tested the tolerance of the United States. Consequently, the US Air Force deployed dozens of Predator aircraft to visually, aerially comb the streets and alleyways of the city in search of Zarqawi. Eventually, a Predator drone helped to identify the building in which Zarqawi was hiding, relaying that information to nearby F-16C aircraft, which obliterated the target.

Probably the most publicized case study is the raid on Osama bin Laden's compound in Abbottabad, Pakistan in 2011. Before the actual raid, the CIA had allegedly flown the bat-like RQ-170 stealth drone over the suspected compound, using thermal imaging to identify the possibility that Osama bin Laden resided in the building.²¹ The imagery may have helped intelligence analysts confirm a possible profile of the terrorist leader. Additionally, during the raid on Osama bin Laden's compound, President Obama and his national security team were allegedly able to directly watch the events unfold via a live RQ-170 drone feed.²² The RQ-170 helped to locate the target and updated command and control on the progression of the special operations raid. Because the aircraft was unmanned, it minimized responsibility and lives in the case that the aircraft was discovered during the operation. In this way, the aircraft efficiently contributed to the vital intelligence effort surrounding Osama bin Laden's identification and capture.

Eliminating the Threat: Aerial Strikes

Offensive Counterterrorism

The second phase of disrupting terrorism is eliminating the threat from the battlefield. According to Boyle, terrorism is a dynamic, asymmetric form of warfare that requires aggressive, precise action against the organization.²³ In President Obama's words, "battlefields have evolved and changed", and therefore, it is necessary to take preemptive action in order to eliminate the possibility of a terrorist attack.²⁴ "We must disrupt al Qaeda's terrorist planning before it gets anywhere near our homeland or our citizens". Aggressive, preemptive action, therefore, must be taken in order to eliminate the threat before it does any harm. Action may include everything from freezing financial assets, detention, and lethal strikes. As I will show, drones have been particularly effective at lethally eliminating top terrorist leadership.

Eliminating leadership is highly effective at disorganizing the terrorist organization. 'Decapitation' of the terrorist organization depends on two factors: (1) the terrorist leaders' importance and (2) difficult succession.²⁵ Terrorist leaders "wield enormous power and influence over all aspects of their organizations"; this creates a situation in which the organization is highly dependent on the vision and motivation of a few key leaders. Because terrorist organizations do not follow any set of established moral or social norms, the leaders have significant influence over the creation of norms within the organization. Thus, according to Price, removing these leaders from a position of authority is the most significant variable in the downfall of a terrorist organization.

Additionally, leadership succession is difficult within a terrorist organization. These organizations are (1) violent, (2) clandestine, and (3) value-based. Therefore, authority is less likely to be institutionalized and legitimate.²⁶ Rather, leadership is dependent on the charisma of the leader; "charisma is the warrior's basis of authority". No two leaders are the same, so eliminating one leader significantly changes the strategy of the organization as a whole. Consider, for example, the effect of Osama bin Laden's death on al Qaeda. Jenkins describes it as a "serious blow" to its capacity because of his inspirational, organizational, and financial advice.²⁷ Even though bin Laden was more of a figurehead than an active terrorist operative, he symbolized the unification of al Qaeda and set strategic direction for the organization as a whole. His death delegitimized the organization. As I will show with the case studies below, lethal drone strikes have also disrupted terrorist organizations because they create a leadership void and change of command issue.

Aerial Elimination of Terrorist Leadership

Counterterrorism drones are equipped to eliminate targets. The Predator, for example, holds AIM-92 Stinger air-to-air and AGM-114 Hellfire air-to-ground missiles.²⁸ The AGM-114 Hellfire missile is a precise, laser-guided armament designed to eliminate an individual militant or a group of militants.²⁹ Drone pilots learn not only how to deploy these weapon systems, but also learn how to utilize each weapon effectively.³⁰ The angle of attack, airspeed, and nature of the threat are all factors that lead to the decision of how to deploy the drone's capabilities effectively. The camera on the Predator drone has a complementary laser system that can be deployed remotely by a sensor operator. This camera can "paint" the target with the laser and the pilot can either chose to fire laser-guided Hellfire missiles or cooperate with another aircraft that will launch a similar attack. The F-16C aircraft that bombed Zarqawi's compound 'cooperated' its laser-guided bomb with the laser that had been engaged from the loitering Predator drone. The drone employs and enables strikes.

There are several examples of how drones are effective at eliminating terrorists. Anwar al Awlaki, an American-born jihadist who led an aggressive rhetorical jihad campaign was a casualty

of a drone counterterrorism operation. Awlaki grew up in New Mexico, studied civil engineering at Colorado State University, and began preaching jihadi violence shortly after 9/11.³¹ Awlaki moved to Yemen to revamp his online rhetorical campaign. Because of his extensive familiarity with American culture, Awlaki's usefulness centered around his ability to attract and appeal to domestic terrorists within the US. His sermons inspired terrorists like those responsible for the Fort Hood Shooting (2009), the Christmas Day Bombing (2009), and the Times Square Bombing (2010). In September of 2011, two Predator drones spotted Awlaki in his vehicle, and the CIA ordered the aircraft to fire Hellfire missiles at it, killing the American jihadist. In President Obama's words, the "death of Awlaki is a major blow to al Qaeda's most active operational affiliate... [he] took the lead in planning and directing efforts to murder innocent Americans."³² By killing Awlaki, the US eliminated a serious threat that could have continued to inspire others with growing online rhetoric. No al Qaeda leader has since held as much moral influence over homegrown terrorists as Awlaki.

As a result, it seems that al Qaeda struggles to replace decimated leaders. Although leaders like Awlaki are hard to replace influentially, it can be even more difficult for the organization to physically replace dead leaders quickly enough to ensure operations run smoothly. Baitullah Mehsud was "Pakistan's most feared militant" in Wazirista.³³ Orchestrating guerilla terrorist plots since 2005, he subsequently gained international attention with the Red Mosque siege in Islamabad (2007).³⁴ In August 2009, however, it was reported that Mehsud had succumbed to fatal injuries caused by a CIA Predator strike earlier that month. Predator drones had been targeting the leadership of his Taliban cell for some time, so his death was especially impactful because of an already fractured chain of command. Following his death, there were claims that a violent struggle for power took place between the legitimate successor, Hakimullah Mehsud, and Wali-ur-Rehman. Hakimullah Mehsud emerged as the successor, with Rehman as his deputy in command. Both individuals, however, were subsequently killed in two separate instances by Predator drones in 2013, severely crippling al Qaeda's chain of command and organizational stability once again.³⁵ Osama bin Laden's close advisor, several years earlier, commented on the drone war obliterating al Qaeda's chain of command when he warned that because of aggressive action against leaders in Waziristan, "fighters were being killed faster than they could be replaced".³⁶ Aggressively and constantly disrupting leadership results in uncoordinated terrorist strategy. By targeting leaders, therefore, drones not only eliminate rhetorical fuel for terrorist fire, but also disrupt strategic focus and operations.

Disrupting Terrorist Operations

The drone's capability to collect intelligence and strike enemy combatants engenders fear in the ranks of al Qaeda. A 48-page memorandum, discovered in Osama bin Laden's compound in Abbottabad, Pakistan during the raid in 2011 revealed that the leader himself was fearful of the US drone program.³⁷ "During his final days, bin Laden's world was filled with paranoia". He advised his followers not to travel around Waziristan except on cloudy days, for fear of aerial assassination. He also advised his key leadership to depart and head toward Ghanzi, Zabul, and Kunar in Afghanistan, because high mountains and dense forests provide better coverage against aerial imagery and attacks. He even feared for his son, whom he neurotically advised to flee the drone-ridden tribal regions in Pakistan. In an international organization that already suffers because of lack of communication, organization, and leadership, these effects severely cripple operational capacity.

Although airstrikes alone have not led to the decline of al Qaeda, it is important to note how constant deployment drones pervasively pounds the terrorist organization. With constant aerial counterterrorism, the United States has "pounded on al Qaeda's operational capabilities", des-

troying sponsored insurgencies, eliminating leaders, and creating difficulty for terrorists to communicate.³⁸ Al Qaeda is more decentralized and reliant on peripheral command than ever before; its central command has been obliterated. Aggressive counterterrorism operations have kept the organization on its toes, more preoccupied with its own survival than coordinating a coordinated attack. Because of this, al Qaeda now must focus its limited resources on protecting personnel, facilities, and other assets. As long as nations continually eliminate leaders and maintain an intelligence advantage, the threat of terrorism may be more contained. Without unified inspiration, rhetoric, leadership, or strategy, a terrorist organization is simply a collection of individuals with weak or no motive.

A Multilateral Counterterrorism Strategy

Drones, however, should not be the only form of pressure that the target nation employs to combat terrorism – counterterrorism strategy needs to be a multilateral approach with varying sources of pressure. While the drone is effective, a nation should consider other complementary nonmilitary approaches to combating terrorism. “To be effective, counterterrorism must itself respond with a coherent strategy.”³⁹ Military tactics, therefore, must not cloud counterterrorism policy, for there are other diplomatic, political, and economic pressures a target nation should likewise apply. Like in the United States in Kosovo, a nation should couple coercive airpower with a variety of other outlets, including, but not limited to, discrediting propaganda, political pressure, and foreign aid.⁴⁰ By employing a multilateral approach, the nation can aggressively aggravate terrorist operational capacity on a multitude from a variety of directions.

Furthermore, other military tactics should operate in conjunction with drone warfare. In terms of intelligence, drones should be used with other assets in order to gauge a holistic view of the battlefield. The target nation should still employ human and signals intelligence, because they also produce vital intelligence.⁴¹ For example, even though an RQ-170 drone identified bin Laden’s compound from the air, tapped phone calls helped intelligence analysts locate his compound via his courier.⁴² In the intelligence community, analysts should utilize all leads from every source of intelligence; the more sources, the clearer the overall picture.

In terms of air strikes, drones should be used with others means of aggressive action. It is true that drones are politically convenient in countries, like Pakistan, which retain strong international claims to sovereignty; drones give the perception to an American audience that the US is noninterventionist but still hard-line against terrorism. Considering that the US population has grown war-wearier with boots-on-the-ground interventionist tactics, drones may appear to be an American politician’s ideal military instrument – strike terrorism without directly intervening.⁴³ However, special operations raids, cyber attacks, and funding of foreign counterterrorist operations may all be other complementary tactics in the overall strategy. For example, in terms of special operations raids, the US has successfully eliminated top terrorist leaders with small-team invasions, like the attack on Osama bin Laden and a recent rescue of hostages in Yemen.⁴⁴ In both situations, it could have been impractical and improbable to deploy unmanned aerial vehicles to accomplish the mission. Therefore, there are limitations to drone warfare.

Conclusion

As I have shown, the drone is a particularly effective military instrument of counterterrorism strategy because of its unique capabilities to employ pervasive reconnaissance and aggressive airstrikes simultaneously. From Anwar al Awlaki to Osama bin Laden, the drone has historically disrupted the operational capacity of al Qaeda. However, it must not constitute the only centerpiece of counterterrorism strategy. Human intelligence, special operation raids, and other non-

military approaches are all complementary tactics that contribute to combatting a terrorist organization. Any counterterrorist nation should employ a multilateral approach, applying constant pressure to ensure terrorism can no longer breathe. □

Notes

1. United States of America Central Intelligence Agency. National Strategy for Combatting Terrorism. N.p.: n.p., 2003. Print.
2. Carabin, David. *AN INTELLIGENCE-SHARING CONTINUUM: NEXT GENERATION REQUIREMENTS FOR U.S. COUNTERTERRORISM EFFORTS*. *Www.nps.edu*. Naval Postgraduate School, n.d. Web. 3 Dec. 2014, pp. 13.
3. Gardner, F. (2013, November 2). How do terrorists communicate? Retrieved from <http://www.bbc.com/news/world-24784756>
4. Carabin, David. *AN INTELLIGENCE-SHARING CONTINUUM: NEXT GENERATION REQUIREMENTS FOR U.S. COUNTERTERRORISM EFFORTS*. *Www.nps.edu*. Naval Postgraduate School, n.d. Web. 3 Dec. 2014, pp. 18.
5. Masse, O'Neil, and Rollins, Fusion Centers, pp. 89
6. Mead, Corey. "A Rare Look Inside the Air Force's Drone Training Classroom." *The Atlantic*. Atlantic Media Company, 04 June 2014. Web. 02 Dec. 2014. <<http://www.theatlantic.com/technology/archive/2014/06/a-rare-look-inside-the-air-forces-drone-training-classroom/372094/>>.
7. Valdes, Robert. *HowStuffWorks*. HowStuffWorks.com, n.d. Web. 03 Dec. 2014. <<http://science.howstuffworks.com/predator.htm>>.
8. Martin, Matt J. *Predator: The Remote-Control Air War Over Iraq and Afghanistan: A Pilot's Story*. Minneapolis: Zenith, 2010.
9. Malenic, Marina. "USAF Declares Gorgon Stare Follow-on Operationally Deployable." - *IHS Jane's 360*. N.p., 2 July 2014. Web. 02 Dec. 2014. <<http://www.janes.com/article/40290/usaf-declares-gorgon-stare-follow-on-operationally-deployable>>.
- Jennings, Gareth. "USAF Image Appears to Show Gorgon Stare Increment II in Afghanistan." - *IHS Jane's 360*. N.p., 10 Sept. 2014. Web. 02 Dec. 2014. <<http://www.janes.com/article/42971/usaf-image-appears-to-show-gorgon-stare-increment-ii-in-afghanistan>>.
10. Valdes, Robert. *HowStuffWorks*. HowStuffWorks.com, n.d. Web. 03 Dec. 2014. <<http://science.howstuffworks.com/predator.htm>>.
11. "MQ-1 Predator." *Deagel: Military Aviation*. N.p., n.d. Web. 02 Dec. 2014. <http://www.deagel.com/Unmanned-Combat-Air-Vehicles/MQ-1-Predator_a000517002.aspx>.
12. "Drones: What Are They and How Do They Work?" *BBC News*. N.p., n.d. Web. 02 Dec. 2014. <<http://www.bbc.com/news/world-south-asia-10713898>>.
13. Martin, Matt J. *Predator: The Remote-Control Air War Over Iraq and Afghanistan: A Pilot's Story*. Minneapolis: Zenith, 2010, pp. 51.
14. Martin, Matt J. *Predator: The Remote-Control Air War Over Iraq and Afghanistan: A Pilot's Story*. Minneapolis: Zenith, 2010, pp. 71.
15. Miller, Greg. "CIA Flew Stealth Drones into Pakistan to Monitor Bin Laden House." *Washington Post*. The Washington Post, n.d. Web. 02 Dec. 2014. <http://www.washingtonpost.com/world/national-security/cia-flew-stealth-drones-into-pakistan-to-monitor-bin-laden-house/2011/05/13/AF5dW55G_story.html>.
16. "Death of Osama Bin Laden Fast Facts." *CNN*. Cable News Network, 10 Nov. 2014. Web. 01 Dec. 2014. <<http://www.cnn.com/2013/09/09/world/death-of-osama-bin-laden-fast-facts/>>.
17. Michael J. Boyle, "Do counterterrorism and counterinsurgency go together?" *International Affairs* Vol.86, No.2, 2010: 346.
18. "Remarks by the President at the National Defense University." *The White House*. The White House, n.d. Web. 02 Dec. 2014. <<http://www.whitehouse.gov/the-press-office/2013/05/23/remarks-president-national-defense-university>>.
19. Bryan C. Price, "Targeting Top Terrorists: How Leadership Decapitation Contributes to Counterterrorism", *International Security* Vol. 36, No. 4, 2012: 14.
20. Bryan C. Price, "Targeting Top Terrorists: How Leadership Decapitation Contributes to Counterterrorism", *International Security* Vol. 36, No. 4, 2012: 18.
21. Jenkins, Brian. in Its Third Decade." *The Rand Corporation* (n.d.): n. pag. *The Rand Corporation*. Web. 3 Dec. 2014. <http://www.rand.org/content/dam/rand/pubs/occasional_papers/2012/RAND_OP362.pdf>.
22. Valdes, Robert. *HowStuffWorks*. HowStuffWorks.com, n.d. Web. 03 Dec. 2014. <<http://science.howstuffworks.com/predator.htm>>.
23. "AGM-114B/K/M HELLFIRE MISSILE Fact File." *The US Navy*. N.p., n.d. Web. 02 Dec. 2014. <http://www.navy.mil/navydata/fact_display.asp?cid=2200&tid=400&ct=2<http://science.howstuffworks.com/predator.htm>>.
24. Mead, Corey. "A Rare Look Inside the Air Force's Drone Training Classroom." *The Atlantic*. Atlantic Media Company, 04 June 2014. Web. 02 Dec. 2014. <<http://www.theatlantic.com/technology/archive/2014/06/a-rare-look-inside-the-air-forces-drone-training-classroom/372094/>>.

25. Gardner, Lloyd C. Killing Machine: The American Presidency in the Age of Drone Warfare. "Al-Awlaki Killed in Yemen." *Washington Post*. The Washington Post, 30 Sept. 2011. Web. 02 Dec. 2014. <<http://www.washingtonpost.com/wp-srv/special/world/al-aulaqi-killed-by-drone-strike/>>.
26. Griffin, Jennifer. "Two U.S.-Born Terrorists Killed in CIA-Led Drone Strike." *Fox News*. FOX News Network, 30 Sept. 2011. Web. 02 Dec. 2014. <<http://www.foxnews.com/politics/2011/09/30/us-born-terror-boss-anwar-al-awlaki-killed/>>.
27. "Taliban Confirm Commander's Death." *BBC News*. BBC, 25 Aug. 2009. Web. 02 Dec. 2014. <http://news.bbc.co.uk/2/hi/south_asia/8220762.stm>.
28. "Obituary: Baitullah Mehsud." *BBC News*. BBC, 25 Aug. 2009. Web. 02 Dec. 2014. <http://news.bbc.co.uk/2/hi/south_asia/7163626.stm>.
29. "Drone Strike in Pakistan Kills Head of Pakistan Taliban." *Fox News*. FOX News Network, 01 Nov. 2013. Web. 02 Dec. 2014. <<http://www.foxnews.com/world/2013/11/01/drone-strike-in-pakistan-kills-head-pakistan-taliban-security-sources-say/>>.
- Sherazi, Zahir. "US Drone Strike Kills TTP Number Two Waliur Rehman, Six Others." - *Pakistan*. Dawn.com, n.d. Web. 02 Dec. 2014. <<http://www.dawn.com/news/1014506/us-drone-strike-kills-four-in-north-waziristan>>.
30. Stevens for the Daily Mail, John. "Al Qaeda Hit by Credit Crunch: Bin Laden Emails Reveal Terror Group Is Running out of Cash." *Daily Mail*. Associated Newspapers, 2 July 2011. Web. 02 Dec. 2014. <<http://www.dailymail.co.uk/news/article-2010617/Bin-Ladens-fears-Al-Qaedas-future-revealed-emails.html>>.
31. Stevens for the Daily Mail, John. "Al Qaeda Hit by Credit Crunch: Bin Laden Emails Reveal Terror Group Is Running out of Cash." *Daily Mail*. Associated Newspapers, 2 July 2011. Web. 02 Dec. 2014. <<http://www.dailymail.co.uk/news/article-2010617/Bin-Ladens-fears-Al-Qaedas-future-revealed-emails.html>>.
32. Jenkins, Brian. In Its Third Decade." *The Rand Corporation* (n.d.): n. pag. *The Rand Corporation*. Web. 3 Dec. 2014, pp. 2. <http://www.rand.org/content/dam/rand/pubs/occasional_papers/2012/RAND_OP362.pdf>.
33. Audrey Kurth Cronin, "Why Drones Fail," *Foreign Affairs* 92:4 (July/August 2013): 44-54
34. Daniel R. Lake, "The Limits of Coercive Airpower", *International Security*, Summer 2009, Vol. 34 No. 1, pp. 83-112.
35. (18, 84) Carabin, David. AN INTELLIGENCE-SHARING CONTINUUM: NEXT GENERATION REQUIREMENTS FOR U.S. COUNTERTERRORISM EFFORTS. *Www.nps.edu*. Naval Postgraduate School, n.d. Web. 3 Dec. 2014.
36. Goldman, Adam, and Matt Apuzzo. "Phone Call by Kuwaiti Courier Led to Bin Laden." *PilotOnline.com*. N.p., 3 May 2011. Web. 02 Dec. 2014. <<http://hamptonroads.com/2011/05/phone-call-kuwaiti-courier-led-bin-laden>>.
37. "Afghanistan." *Gallup.Com*. N.p., n.d. Web. 03 Dec. 2014. <<http://www.gallup.com/poll/116233/afghanistan.aspx>>.
38. Onyanga-Omara, Jane. "Report: SEALs Led Raid to Find U.S. Hostage in Yemen." *Military Times*. N.p., 28 Nov. 2014. Web. 02 Dec. 2014. <<http://www.militarytimes.com/story/military/2014/11/28/seals-raid-yemen-journalist-hostage/19629089/>>.
39. Audrey Kurth Cronin, "Why Drones Fail," *Foreign Affairs* 92:4 (July/August 2013): 44-54
40. Daniel R. Lake, "The Limits of Coercive Airpower", *International Security*, Summer 2009, Vol. 34 No. 1, pp. 83-112.
41. (18, 84) Carabin, David. AN INTELLIGENCE-SHARING CONTINUUM: NEXT GENERATION REQUIREMENTS FOR U.S. COUNTERTERRORISM EFFORTS. *Www.nps.edu*. Naval Postgraduate School, n.d. Web. 3 Dec. 2014.
42. Goldman, Adam, and Matt Apuzzo. "Phone Call by Kuwaiti Courier Led to Bin Laden." *PilotOnline.com*. N.p., 3 May 2011. Web. 02 Dec. 2014. <<http://hamptonroads.com/2011/05/phone-call-kuwaiti-courier-led-bin-laden>>.
43. "Afghanistan." *Gallup.Com*. N.p., n.d. Web. 03 Dec. 2014. <<http://www.gallup.com/poll/116233/afghanistan.aspx>>.
44. Onyanga-Omara, Jane. "Report: SEALs Led Raid to Find U.S. Hostage in Yemen." *Military Times*. N.p., 28 Nov. 2014. Web. 02 Dec. 2014. <<http://www.militarytimes.com/story/military/2014/11/28/seals-raid-yemen-journalist-hostage/19629089/>>.



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