An Unexpected Threat: How a Short Stretch of the Northern New York Border with Canada Could Provide a New Avenue for Terrorist Attacks

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Abstract

Al Qaeda and many other terrorist groups have openly stated their intentions to acquire and use some form of nuclear device in an attack on the United States. As many recent terrorist attacks have demonstrated, terrorists will attempt to exploit any weakness in the line of defense in order to execute their stated intentions. The northern border area on and around the Saint Regis Mohawk Reservation in Northeastern New York and Canada has been an ongoing smuggling conduit and national security vulnerability. This paper will examine how this area could be exploited in order to smuggle a type of nuclear device known as a Radiological Dispersal Device (RDD) or "dirty bomb" into the United States and how despite increases in security along the border and within major cities in the United States, terrorists might successfully be able to overcome these security measures and launch an attack.

An Unlikely Threat: How a Short Stretch of the Northern New York Border with Canada Could Provide a New Avenue for Terrorist Attacks

Since the September 11, 2001 attacks on the United States homeland, the threat of terrorism has become a major focus of the United States government, military, and law enforcement. Hundreds of government agencies, thousands of individuals, and billions of dollars are spent every year in the attempt to counter the threat of terrorism, both domestically and around the world. Advances in technology and communication have allowed terrorism as a tactic to become a transnational threat capable of being used by any group which desires to advance its political or ideological objectives and strike fear in the hearts of a populace. Even small, minimally funded terrorist groups have the ability to cause substantial physical and psychological damage. Many of the recent terrorist attacks involve coordination across multiple countries and even various groups, from planning to logistics to execution, and the results of terrorist attacks always have global reverberations. One of the growing concerns relating to terrorism is the possibility that a terrorist group may acquire a form of radiological dispersal device (RDD), often known as a "dirty bomb," and use this weapon in an attack against a major city in the United States. Al Qaeda and other terrorist groups have openly stated intentions to acquire and use such a weapon against the United States and are constantly exploring ways in which they could convert these intentions into reality. Not only could an attack with this type of weapon cause substantial loss of life, which is always tragic no matter how many individuals are affected, use of such a weapon would also bring with it tremendous economic and psychological affects that would threaten an already unstable American economy and fragile international diplomatic relations. Despite the billions of dollars

spent every year by the conglomeration of government agencies whose purpose to neutralize the threat of terrorism and the many programs and security measures that have already been put into place with the specific purpose to prevent this type of attack from occurring, there are still weaknesses in the system of defense that leave the United States vulnerable to attack.

One such weakness exists along the porous and difficult to control Northern New York border with Canada, and most specifically within this area, on and around the Saint Regis Mohawk Reservation, which occupies land on both sides of the border. This area is already a well-documented conduit for the illicit trafficking of drugs, cigarettes, and other contraband as well as a popular entry point for suspected terrorists. The reservation is an attractive smuggling center and entry point for terrorists due to its unique jurisdictional and geographical positioning. The semi-autonomous nature of the reservation due to its tribal status provides limited legal jurisdiction for government law enforcement and intelligence agencies to counter the threats emanating from the area and for improving the security vulnerabilities. In addition, its location in a remote rural area within fairly close proximity to major transportation and crime hubs namely Montreal and Toronto, and the relative ease in which contraband can be moved across the border through the reservation provides an efficacious location for terrorist and organized crime networks who already utilize this area with frequency. Recent government estimates state that as much as twenty percent of all the high-potency marijuana grown in Canada each year is smuggled through the Saint Regis Mohawk Reservation.[1] Regarding terrorism,

1. Federal Bureau of Investigation, "2011 National Gang Threat Assessment," *FBI.gov*, https://www.fbi.gov/stats-services/publications/2011-national-gang-threat-assessment (accessed November 3, 2013).

Representative Candice Miller, a member of the House Committee on Homeland Security, said in 2011, "We have four to five times the hits on the TIDEs [Terrorist Identities Datamart Environment] list on the northern border than the southern border."[2] The TIDEs list is a federal government central repository of information on international terrorists and serves as a "watchlist" for counterterrorism efforts. Whether it is drugs, other contraband, or terrorism, the Saint Regis Mohawk Reservation is a documented hub of illegal activity and this paper will examine how the area represents a critical vulnerability which could be used by terrorists to smuggle an RDD into the United States and why, despite increases in security, the country remains vulnerable to this type of attack.

A Complex Border Security Challenge: The Saint Regis Mohawk Reservation

The Saint Regis Mohawk Reservation presents a jurisdictional nightmare for law enforcement and intelligence capabilities while at the same time furnishing a prime location for smugglers. The Saint Regis Mohawk Tribe, also known as the Akwesasne (the Mohawk name for the tribe) is a federally recognized tribe whose reservation area encompasses about twenty miles along the border in northeastern New York and parts of the Canadian provinces of Quebec and Ontario. As a result, multiple governments and jurisdictions have an interest in the reservation, including the United States and Canada, the state of New York, the provinces Ontario and Quebec, as well as the Mohawk tribal government, which is also part of the Haudenosaunee Confederacy, a federation which includes multiple Native American nations. Since the reservation straddles the United

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2. U.S.-Canada Border Could Get Security Upgrades, Lanham: Federal Information & News Dispatch, Inc., 2011, http://search.proquest.com/docview/877562767?accountid=12085 (accessed November 3, 2013).

States-Canadian border and is lightly populated, travel from country to country through the reservation is expeditious and in many areas relatively unmonitored. In addition, the St. Lawrence River runs along much of the northern border conterminous with the United States-Canadian border.[3] The St. Lawrence River is fairly narrow through this area and provides a variety of non-traditional transportation opportunities for smugglers, in the warmer months via boats and Jet Skis and during winter months when the river is frozen over, unofficial "ice roads" are created which allow cars, trucks, and snowmobiles to quickly move between borders[4] over the forty-nine acre swath which the river encompasses.[5] The area around the reservation on both sides of the border is mostly wooded and lightly populated, making undetected movement easier. However, a straight drive south leads to the heavily populated southern New York and New York City area where the demand for much of the smuggled material, especially illegal drugs, originates. A report released by the Government Accountability Office in 2011 showed that "less than 2 percent of the Canadian border was under operational control."[6] Since the

3. Office of National Drug Control Policy, "National Northern Border Counternarcotics Strategy, January 2012," January, 2012, http://www.whitehouse.gov/sites/default/files/page/files/national_northern_border_counternarcotics_strategy_.pdf (accessed November 11, 2013), 30.

4. Ibid.

5. Bree Spencer, "Akwesasne: A Complex Challenge to U.S. Northern Border Security," *The National Strategy Forum Review* 20, no. 3 (Summer 2011): 1, http://www.nationalstrategy.com/Portals/0/documents/Summer%202011%20NSFR/Akwesasne.pdf (accessed November 2, 2013).

6. U.S.-Canada Border could Get Security Upgrades, Lanham, United States, Lanham: Federal Information & News Dispatch, Inc., 2011, http://www.liberty.edu:2048/login?url=http://search.proquest.com/docview/877562767?accountid=12085 (accessed 6 October 2012).

reservation is under tribal sovereignty and lightly traveled, there is no border control or customs in many areas of the reservation. According to Franklin County District Attorney Derek Champagne, this means that criminals can drive across unimpeded from Canada into the United States and the "nebulous border area where jurisdiction overlaps with native self-government 'creates this absolute nightmare' for law enforcement on both sides of the border."[7] Law enforcement on either side of the United States-Canadian border have jurisdiction solely on their respective sides, and even a May 2009 agreement for "Integrated Cross-Border Maritime Law Enforcement Operations (ShipRider) which formalizes integrated joint law enforcement teams along the maritime border" in order to "reduce the ability of criminal organizations to take advantage of jurisdictional limits"[8] does not solve many of the jurisdictional issues relating to the reservation, because the reservation still maintains tribal sovereignty. The Mohawk police forces are undermanned, underfunded and do not even have jails, limiting their enforcement ability.[9] Federally recognized tribes such as the Mohawks are considered sovereign governments within the boundaries of the United States, as recognized by the United States Constitution in Article 1 Section 8, and the Supreme Court has also declared these tribes "domestic dependent nations.[10] The federal government has some law enforcement jurisdiction over tribal lands in regards to major crimes if a non-Indian is involved, but

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7. Brian Kemp, "Akwesasne Area an Ecstasy Smuggling Hotbed," September 28, 2011, *CBC News*, http://www.cbc.ca/news/canada/akwesasne-area-an-ecstasy-smuggling-hotbed-1.1053124 (accessed November 2, 2013).

8. "National Northern Border Counternarcotics Strategy," 8.

9. Kemp.

10. "National Northern Border Counternarcotics Strategy," 9.

smuggling is not currently considered a major crime and much of the smuggling is carried out by tribal members. Former Representative William Owens, D-NY, who represented Franklin County, where the reservation is located, sponsored legislation known as the Cross Border Reservation Drug Trafficking Sentence Enhancement Act of 2010, which was designed to increase penalties for smuggling in an effort to counter the reservation trafficking.[11] A similar legislation was introduced by Senator Charles Schumer in the Senate, but neither bill was passed.

Due to the geographical, structural, and jurisdictional benefits offered by the Saint Regis Mohawk Reservation, smugglers have used this area as a highly successful conduit for illicit trafficking for a number of years. According to the Justice Department, although the Saint Regis Mohawk Reservation "accounts for less than half a per cent of the U.S.-Canada border" as much as twenty per cent of all high-potency marijuana produced in Canada each year is smuggled through the area[12] as well as a variety of other illegal drugs such as cocaine, heroin, and methamphetamines. This is cause for concern as the smuggling operations would not focus so much effort on so small an area unless they were achieving consistent success. Illegal drugs are not the only item smuggled through the border. The list also includes cigarettes, bulk cash, weapons, humans, various consumer goods, and a wide mix of other black market items. Since the smuggling efforts

11. House Energy and Commerce Committee and House Judiciary Committee, *Cross Border Reservation Drug Trafficking Sentence Enhancement Act of 2010*, 111th Cong., 2d sess., 2010, H.R. 4747, http://www.govtrack.us/congress/bills/111/hr4747 (accessed November 11, 2013).

12. Kemp.

are so large, there are well developed supply, logistical, and operational networks which can service almost any item for which there is a demand and a profit potential.

The smugglers themselves are often members of the Akwesasne Mohawk community who are hired by organized crime groups.[13] Organized crime has found a lucrative haven in the northeastern part of Canada. These groups include Vietnamese-Canadian, Indo-Canadian, Irish-Canadian, Italian-Canadian, and other organized crime groups, the Hell's Angels Motorcycle Club, and independent transnational criminal organizations[14] including the Russian and Italian mafia. In his 2009 work, *Iced: the Story of Organized Crime in Canada*, author Stephen Schneider says:

> Perhaps no other country in the world has as many conditions in place that are conducive to a vibrant smuggling trade: Canada has thousands of miles of poorly enforced coastline; thousands of miles of unguarded border with the United States of America, the largest consumer of drugs and contraband in the world, and, most uniquely, a large concentration of people living within a short distance of that border (thereby providing a convenient market for the contraband as well as a sympathetic and skilled labour pool from which to draw smugglers and distributors).[15]

Though Canada has many laws that are similar to those in the United States which fall under the Racketeer Influenced and Corrupt Organizations Act, otherwise known as RICO, these laws are not as easily or strongly enforced in Canada which makes it more of a haven for organized crime. Many of these criminal groups were often first drawn to smuggling through the reservation because of the potential profits available from cigarette smuggling. The Mohawks are not required to pay or collect taxes on tobacco

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13. Spencer, 2.

14. "National Northern Border Counternarcotics Strategy," 4.

15. Stephen Schneider, *Iced: The Story of Organized Crime in Canada* (Toronto: John Wiley and Sons, 2009), 554.

sales on the reservation. They took advantage of this benefit by smuggling the cigarettes into Canada or the United States, where they could undercut the legitimate prices in both countries by a substantial margin. Cal Broeker, a former undercover informant for the Royal Canadian Mounted Police, said the price difference was so great that the profit on a truckload of cigarettes could be around half a million dollars.[16] The Mohawk smugglers used ambulances, manure spreaders, school buses, and milk tankers for the smuggling activities as well as a "fleet of cars and a truckload of stolen license plates that were switched from vehicle to vehicle five or six times a day."[17] The high profits and ease of smuggling through the border naturally attracted crime groups from all over the world that wanted to share in the wealth. According to Broeker,

> The Russians, reportedly, could scarcely believe their luck – or our stupidity – when they first found these autonomous, virtually cop-free zones right in North America, and right on the U.S.-Canada border, in some cases. You could stash one hundred kilos of cocaine, or one hundred cases of automatic weapons, or hundreds of millions in counterfeit money – anything, in fact – on these reservations, and the law of the land virtually guaranteed it would be protected from the nuisance of police investigation.[18]

Both the Canadian and U.S. authorities had to go through the slow and challenging bureaucratic red tape in order to conduct investigations and busts on the reservation, which made it difficult to counter the illicit activities. The smugglers established warehouses, front companies, and even bribed U.S. and Canadian customs officials. Broeker claims the smugglers are "experts at setting up front companies and working

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16. Paul William Roberts and Norman Snider, *Smokescreen: One Man Against the Underworld*, (Toronto: Stoddart Publishing Co. Limited, 2001), 42.

17. Ibid., 8.

18. Ibid., 40.

through legal parameters and using illegal operations both to accomplish their objectives" and have complex systems of transports, storage, fax stamps and seals, letters of credit, end user certificates, etc. to aid in their smuggling activities.[19] The size and complexity of many of these organizations is evident in some of the recent law enforcement operations. A presidential report in 2012 stated that "In the past three years, the U .S. Attorney's Office for the Northern District of New York has indicted over 100 individuals in a series of investigations which demonstrate the St. Regis Reservation is being used by a number of large-scale trafficking organizations to facilitate smuggling activities."[20] A contributing factor to the large scale smuggling efforts are the nearby cities of Toronto and Montreal. Groups such as the Hell's Angels, the Italian Mafia, and the Colombian drug cartels have connections in Montreal and Toronto with networks that extend all over the world. A Statistics Canada survey of law enforcement agencies referencing organized crime found that "93 percent of the criminal organizations they investigated in this country had links with other crime groups."[21] In the spring of 2013, Alessandro Taloni, who was an alleged associate of the Montreal-based Rizzuto organized crime family, was charged with narcotics and money laundering offenses as part of an indictment in which "ten members of a Montreal-based drug distribution organization affiliated with the Rizzuto and Bonanno crime families, the Hells Angels, and the Sinaloa Cartel" were

19. Ibid., 196-197.

20. "National Northern Border Counternarcotics Strategy," 7.

21. Presidia Security Consulting, *Economic Sectors Vulnerable to Organized Crime: Marine Port Operations*, Public Safety Canada, January 2011, http://publications .gc.ca/collections/collection_2012/sp-ps/PS4-122-2012-eng.pdf (accessed November 23, 2013), 18.

charged with trafficking over $1 billion worth of marijuana, cocaine, and ecstasy into the United States between 1998 and 2012.[22] The crime organization smuggled drugs from British Columbia to Montreal where the drugs "were smuggled into the United States using transportation networks run by the Hells Angels and Native American co-conspirators from the Akwesasne Mohawk Reservation along the U.S./Canadian border."[23]

Many crime organizations are not formally structured groups but rather "a network of individuals and groups, each of which specializes in one or more aspects of the trade, such as supplying the raw material or processed product; arranging financing; brokering the purchase, transportation, or distribution; physically transporting the goods; or storing, wholesaling, and retailing the product."[24] A smuggling shipment may involve multiple groups each with their own specialty who take part in the process, but these groups will often know very little specific information about the other groups or even about the shipment itself. This type of organizational structure is often referred to as a cell network, a web of closely knit groups (the cells) loosely linked together in a much larger organizational structure. Many terrorist organizations are also structured this way. Limited knowledge about the other "cells" helps prevent the whole organizational structure from being compromised, while still allowing them to coordinate together for

22. U.S. Attorney's Office, Eastern District of New York, "Alleged Rizzuto Organized Crime Family Associate Pleads Guilty To Narcotics Trafficking Crimes Carrying Sentence Of 10 Years To Life," *United States Department of Justice*, May 23, 2013, http://www.justice.gov/usao/nye/pr/2013/2013may23.html (accessed February 20, 2014).

23. Ibid.

24. Schneider, 345.

mutual benefit. With a structure and operating method similar to that of many terrorist groups, terrorists find it easy to mesh with organized crime and smugglers on the reservation.

In fact, according to Ward Elock, director of the Canadian Security and Intelligence Service (CSIS), a variety of terrorist organizations such as Hezbollah and other Shiite terrorist groups as well as Sunni extremist groups such as Hamas and others with ties to Egypt, Libya, Algeria, Lebanon, and Iran, the Tamil Tigers, the Kurdistan Worker's Party (PKK), and several major Sikh terrorist groups are active in Canada.[25] Although the United States has improved its efforts over the last decade or so to improve the identification of possible terrorists entering the country, in Canada, it is easier for possible terrorists to gain entry. According to Warner, over 30,000 refugees enter Canada each year[26] and many believe that sufficient precautions and investigations are not followed to ensure that individuals entering the country are not connected to terrorist organizations. In addition, there are several groups in upstate New York that have existed for many years with possible terrorist connections and could potentially operate as sleeper cells to coordinate with similar groups in Canada and provide support for a smuggling operation. The terrorist group Jamaat al-Fuqra, which was linked to the 1993 World Trade Center bombing and other terrorist attacks throughout the United States, established a private community known as "Islamberg" in an isolated area near Hancock, New York, which is about a five hour drive from the Saint Regis Mohawk Reservation

25. Judith A. Warner, *U.S. Border Security: A Reference Handbook* (Santa Barbara, California: ABC-CLIO, 2010), 53.

26. Ibid.

and only about a two and a half hours away from New York City. Islamberg's founder, a Pakistani cleric named Sheikh Mubarak Ali Gilani who is a well-known international terrorist, is also suspected to be behind the founding of several other Islamic compounds throughout the United States, including one in Red House Virginia.[27] Even if there are not any specific, looming threats currently posed by terrorist groups in either Canada or the United States, their existence in close proximity to a border weakness means they are poised to carry out an attack on short notice if they so desire. Profits from cigarette smuggling have been a recognized source of terrorist funding for some time, and the reservation also offered the opportunity to smuggle a variety of other profitable items of interest, such as hashish, opium, AK-47s, Semtex, rocket launchers, and other weapons. With recent technological developments in digital communications combined with already existing smuggling and organized crime networks, coordination among various groups in order to find and purchase an RDD in East Europe or elsewhere and arrange for it to be transported to Canada and smuggled through the border will be easier than ever. The smugglers often transport all types of illicit goods referred to only by code names, and only a few individuals involved in the transaction would even have to know what was being smuggled. The terrorists do not have to conduct the smuggling themselves and risk being caught or identified due to their travel records, nationality, or other suspicious connections. There are plenty of professional smugglers on the reservation who are willing carry out smuggling activities with very few questions asked in return for

27. Regional Organized Crime Information Center (ROCIC), "Jamaat ul-Fuqra: Gilani Followers Conducting Paramilitary Training in U.S.," ROCIC Publications Unit, 2006, https://info.publicintelligence.net/ROCICjamaatulfuqra.pdf (accessed 15 November 2013).

substantial monetary compensation and who already transport drugs and other contraband on a regular basis.

United States and Canadian government authorities have recognized this threat to some extent and have taken steps to try to increase the border protection. In border areas under their control they have tightened security checkpoints and patrol the border using a variety of methods, including vehicle patrols, aerial patrols with infrared cameras, ground sensors, and other safeguards. In 2009 a new border protection complex was built outside of the reservation in an effort to increase security in the area. Nearby Army base Fort Drum utilizes Predator Drones to monitor the border and the Saint Regis Mohawk Reservation.[28] Federal and state law enforcement agencies in the United States and Canada have formed integrated task forces and other strategic partnerships to focus on countering smuggling operations. The reservation authorities have partnered with these groups as well. Law enforcement on both sides of the border conduct multiple smuggling busts every year, mostly relating to drugs. However, the lure of profitability and the demand for smuggled goods, especially drugs, remains high and smugglers continue their activities. The jurisdictional issues remain as well and law enforcement is still restricted to working mostly outside of the reservation. To conduct their drug smuggling busts law enforcement has to gather intelligence, use undercover agents, and prepare evidence over a period of time as the drug groups and their hired couriers make their often weekly or monthly drug deliveries. In a scenario regarding a smuggled radiological dispersal device, the window of operation will be much shorter and by the time the device leaves

28. "U.S. launches another drone plane to patrol Canadian border," June 22, 2009, *CBC News*, http://www.cbc.ca/news/world/u-s-launches-another-drone-plane-to-patrol-canadian-border-1.777926 (accessed November 15, 2013).

the reservation, there will be little time or opportunity to intercept the device before it reaches the intended destination.

Moving from Theory to Threat: Obtaining a Radiological Dispersal Device

Although many terrorist groups aspire to obtain full-scale nuclear weapons, these types of devices are very difficult to obtain and require extensive technical knowledge and operational capability in order to utilize them properly. While radiological dispersal devices cause much less damage than nuclear weapons, they are significantly easier to obtain or build since the necessary materials are available from a variety of sources worldwide and the construction of the device is much less complex. The broad definition of a radiological dispersal device is simply something that disperses radioactive material, usually delivered through an explosion. One of the most common forms of radiological dispersal devices and the one most likely to be used in a terrorist attack is known as a "dirty bomb," which combines conventional explosives, such as dynamite or TNT, with radioactive material.[29] There are other ways to disperse radioactive material, but dirty bombs are more effective and more easily concealable than many other methods. Although a dirty bomb would likely cause relatively few short term casualties, it would also cause other severe impacts such as "widespread panic, economic disruption, high decontamination costs, and long-term health effects."[30] Government estimates place the

29. United States Nuclear Regulatory Commission, "Fact Sheet on Dirty Bombs," December 27, 2012, http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-dirty-bombs.html (accessed November 17, 2013).

30. Congressional Research Service, "'Dirty Bombs': Technical Background, Attack Prevention and Response, Issues for Congress," (July 24, 2011): 10-11, by Jonathan Medalia, CRS report R41890, http://www.gwu.edu/~nsarchiv/nukevault/ebb388/docs/EBB031.pdf (accessed October 17, 2012).

cleanup costs of a dirty bomb attack anywhere from several hundred million dollars to tens of billions of dollars, "depending on area contaminated, decontamination technologies used, and level of cleanup required."[31] The most severe effects of the dirty bomb would be concentrated in the immediate area of the detonation, since the amounts of radiation diminish as it disperses and therefore the effects of radiation will steadily decrease as the distance from the attack increases. However, possible long-term health and cancer risks resulting from exposure to radiation still exist and the economic and emotional damage are incalculable. If several dirty bombs are launched in the same attack, which is quite feasible, the possible damage will exponentially increase.

The radioactive materials that might be used in the construction of a dirty bomb are routinely used in the United States and throughout the world. While in the United States these materials are fairly tightly restricted, in many parts of the world they are more easily obtainable. According to a January 2014 report by the Nuclear Threat Initiative (NTI), "nearly 2,000 metric tons of weapons-usable nuclear materials remain spread across hundreds of sites around the globe—some of it poorly secured."[32] One source of these materials is waste by-products from nuclear reactors or medical waste.[33]

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31. Ibid., Summary.

32. Nuclear Threat Initiative, "Nuclear Materials Security Index: Building a Framework for Assurance, Accountability, and Action," 2nd ed., January 2014, http://ntiindex.org/wp-content/uploads/2014/01/2014-NTI-Index-Report.pdf (accessed January 24, 2014), 3.

33. Nick Jones, "Nuclear and Radiological Security in a Global Context," (Cornell University Library, 2010): 5, http://arxiv.org/abs/1005.2268 (accessed November 17, 2013).

Another possible source of radiological material is described by Major General Bruce Lawlor (Ret.):

> The real threat of nuclear terrorism stems from the world's growing stockpiles of plutonium and HEU [highly enriched uranium], both of which can be used to make crude atomic bombs. A recent US - Russian report catalogs nearly 2,000 metric tons of these materials, which are stored in hundreds of buildings in 30 countries under security conditions that range from "excellent to appalling." The combination of fissile material and poor security greatly increases the probability that some of it will end up in terrorist hands.[34]

Researcher Nick Jones claims that up until now most discovered nuclear material has been seized "primarily in Russia and Eastern Europe" and trafficking in weapons grade nuclear material through the Caucasus (Georgia), Central Asia (Kyrgyzstan), Greece and Turkey appears to be increasing.[35] Maj. General Lawlor says that a combination of expert smuggling tactics utilized by organized crime groups in these areas and poor coordination and lack of action taken by the local law enforcement agencies make it likely that "unless the United States significantly steps up its law enforcement efforts in the region - terrorists will eventually be able to buy enough fissile material to make at least a crude atomic device."[36] In fact, it would be prudent to assume that some terrorist groups may already possess enough radiological material to produce small RDDs, given the wide availability of such material.

Many of the same organized crime groups that operate on the Saint Regis

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34. Maj. Gen. Bruce Lawlor, "The Black Sea: Center of the Nuclear Black Market," *Bulletin of the Atomic Scientists* 67, no. 6 (November 2011), http://www.thebulletin.org/2011/november/black-sea-center-nuclear-black-market (accessed November 17, 2013).

35. Jones, 2.

36. Lawlor.

Mohawk reservation also have connections in the Black Sea region. Former undercover informant Cal Broeker described traveling to former Soviet-bloc countries working on deals for the crime bosses, operating as a liaison for smuggling weapons, clothing, military equipment, and other items in addition to working on negotiations for casino and military contracts. He says the smuggling process encompasses a wide range of items that are sold to the highest bidder in Canada.[37] As long as there is a buyer willing to offer the funds, smugglers will find a way to procure the item that they desire. Terrorist groups are well aware of this simple fact. Al-Qaeda leader Ayman al-Zawahiri told a Pakistani journalist several years ago "[i]f you have $30 million, you can go to the black market in Central Asia, make contact with a disgruntled Russian scientist, and get from him suitcase nuclear weapons."[38] Whether or not Al-Qaeda could potentially access a functional suitcase nuclear weapon is up for debate, but that is not the main takeaway. The focus point is that Al-Qaeda and likely many other terrorist groups are aware of the availability of radiological sources and are without a doubt considering ways to obtain and utilize these sources. Pakistan and India are both nuclear armed countries and are likely contributing to the black market availability of radiological materials. Pakistan and India ranked almost last on a list compiled by the NTI measuring nuclear security conditions for countries with weapons-usable materials.[39] With the United States reducing its military presence in Afghanistan, Al Qaeda and other terrorist groups in the region will likely view this as an opportunity to rebuild their strongholds in Afghanistan and

37. Roberts and Snider, 196-197.

38. Lawlor.

39. Nuclear Threat Initiative, 20.

Pakistan. Pakistan's Inter-Services Intelligence (ISI) is known to have connections with the Taliban, Al Qaeda, and the Haqqani network as a supporter, albeit perhaps indirectly, of terrorism. As the United States moves out the region, terrorists may see their opportunity to collaborate with or take advantage of the security vulnerabilities in Pakistan and India in order to obtain nuclear materials.

According to Alex Schmid and Charlotte Spencer-Smith, "it takes less than 25 kilograms of highly enriched uranium (HEU) and less than eight kilograms of plutonium (Pu) for constructing a viable atomic bomb" and there are "between 1.300 and nearly 1.600 tons of highly enriched uranium and nearly 500 tons of plutonium stored in Russia and the United States and, to a lesser extent, in some 30 more countries."[40] Although in the United States sources of HEU and Pu are fairly well protected, in other countries, they are more accessible. Recent seizures of HEU in countries such as Georgia (2010) and Moldova (2011) indicate that the "problem continues to be most acute in the regions of the former Soviet Union and, in particular, in the greater Black Sea region."[41] There are likely to be several other smuggling incidents that were intercepted but not reported in the open source media. In 1995, former military and government officials from Russia and Lithuania with ties to the Russian mafia and a Bulgarian company called Armimex offered to sell missiles and "small nuclear devices" to undercover United States Customs

40. Alex P. Schmid and Charlotte Spencer-Smith, "Illicit Radiological and Nuclear Trafficking, Smuggling and Security Incidents in the Black Sea Region since the Fall of the Iron Curtain – an Open Source Inventory," *Perspectives on Terrorism* 6, no. 2 (2012), http://www.terrorismanalysts.com/pt/index.php/pot/article/view/schmid-illicit-radiological/html (accessed November 25, 2013).

41. Ibid.

agents posing as members of a Colombian cartel.[42] The United States Customs established a front company called Phoenix International while the Lithuanians set up off-shore companies and "managed to get an authentic end-user certificate from the Lithuanian minister of defense saying that the missiles were intended for the military forces of the Republic of Lithuania" (Armimex was only allowed to sell weapons of this kind to governments).[43] Although the Customs sting eventually shut down the deal and resulted in several arrests, had the undercover agents been real customers, it is likely that the deal would have gone through. A British police operation in 2004 led to the arrest of British national, Salahuddin Amin and six others on terrorism-related charges.[44] Amin was accused of making inquiries about buying a "radioisotope bomb" from the Russian mafia in Belgium, who is alleged to have links to al-Qaeda.[45] These are just a few examples among others of various individuals and groups attempting to obtain radiological materials in order to conduct terrorist attacks. While these attempts were not successful this does not mean that future attempts might succeed. As recently as December of 2013, individuals in Mexico were able to hijack a truck carrying cobalt-60,

42. "A Nuclear Smuggling Scenario," Russian Roulette: A Report on the Safety and Security of Russia's Nuclear Arsenal, *Frontline PBS*, February 1999, http://www.pbs.org/wgbh/pages/frontline/shows/russia/scenario/ (accessed November 3, 2013).

43. Ibid.

44. United States Nuclear Regulatory Commission, "Fact Sheet on Dirty Bombs," December 27, 2012, http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-dirty-bombs.html (accessed November 17, 2013).

45. Ibid.

a highly radioactive substance that could be used to make a dirty bomb.[46] Although the material was recovered, it demonstrates the continued vulnerabilities that exist regarding radiological materials, especially in countries that do not have strong regulatory controls. Ukraine, famous for the Chernobyl nuclear power plant disaster, is heavily reliant on nuclear power and has fifteen nuclear power plants.[47] Recent unrest in the country and the stability of the government is cause for concern regarding the integrity of nuclear waste safeguards. Iran is another country with potential nuclear materials that actively funds terrorist activity around the world. Any country which has significant nuclear resources should be continually monitored based on government stability and regulatory controls to determine the current likelihood of radiological materials falling into the wrong hands. If terrorist groups do not already have enough radiological materials to construct one or several dirty bombs, it must be assumed that it will only be a matter of time before they are able to procure the materials necessary to do so.

Transporting the RDD

A key aspect of attempting an attack involves transporting the device from its source to its destination. The Government Accountability Office stated in a 2009 report that terrorists could attempt to smuggle nuclear materials into the United States in a variety of ways, including "hiding them in a car, train, private aircraft or small vessel; sending them through the mail; carrying them in personal luggage through an airport;

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46. Associated Press, "6 Detained in Mexico Theft of Radioactive Material," December 6, 2013, *The Washington Post*, http://www.washingtonpost.com/world/the_americas/mexico-plans-how-to-safely-box-up-recovered-cobalt/2013/12/05/a9d6e56e-5e10-11e3-8d24-31c016b976b2_story.html (accessed December 15, 2013).

47. "Nuclear Power in Ukraine," *World Nuclear Association*, January 2014, http://www.world-nuclear.org/info/Country-Profiles/Countries-T-Z/Ukraine/ (accessed March 17, 2014).

walking them across the border; or concealing them in maritime cargo containers in the global supply chain."[48] As discussed above, the source of the RDD might originate from a variety of locations around the world, but is likely to come from Eastern Europe, Russia, or the Black Sea region. The device would mostly likely be transported to Canada from one of these areas via a private or chartered boat or plane in order to avoid travel documentation and radiological scanning. The Port of Montreal is located on the Saint Lawrence River approximately eighty miles from the Saint Regis Mohawk Reservation. According to the Montreal Port Authority, it is the leading container port in Eastern Canada, servicing over 2,200 ships each year and accounting for eighty percent of Canada's trade each year.[49] The port does have radiation detectors, but these are only used to scan commercial containers, not private vessels. Private vessels present a very difficult challenge for law enforcement, especially in a port the size of the one in Montreal, due to the fact that thousands of commercial and private vessels enter the port each year, and most of these vessels do not pose a threat. It is very challenging to determine if one vessel among all of these presents a threat, and it is impossible to thoroughly inspect all of these vessels, especially the small, private boats. RDDs are typically not very large, and multiple devices could be smuggled on a small boat.

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48. U.S. Government Accountability Office, *Combating Nuclear Smuggling: Inadequate Communication and Oversight Hampered DHS Efforts to Develop an Advanced Radiography System to Detect Nuclear Materials* (September, 2010), by Gene Aloise and Stephen L. Caldwell, Publication No. GAO-10-1041T, Statement for the Record To the Committee on Homeland Security and Governmental Affairs, U.S. Senate, http://www.gwu.edu/~nsarchiv/nukevault/ebb388/docs/EBB025.pdf (accessed October 12, 2012), 1.

49. Montreal Port Authority, "The Port of Montreal: In Brief," https://www.port-montreal.com/files/PDF/port-en-chiffres/APM_FichesTechnique_HR_MOD_HM_ANG.pdf (accessed November 23, 2013).

Mexican marijuana smugglers are increasingly using small boats known as "pangas" to smuggle marijuana into California. Small and fast, these boats are difficult to detect and hard to apprehend. A similar type of small craft could easily move undetected along the Saint Lawrence River and on to the Saint Regis Mohawk Reservation. While the device could not be transported from another country entirely on one of these small boats, it could be easily transferred from a larger vessel to a small boat prior to entering a port.

Even container ships can be used to smuggle contraband. Although they are routinely scanned and processed by customs officials, this does not mean that they are one hundred percent effective at intercepting all smuggling attempts. As stated in the Government Accountability Office cited above, "RPMs [radiation portable monitors] are capable of detecting certain nuclear materials only when these materials are unshielded or lightly shielded."[50] A secondary inspection with a more detailed examination of a container may reveal the presence of a radiological device, but "only a small percentage of vehicles or cargo containers are subjected to secondary inspections."[51] Research and development has been conducted to provide equipment and software that can detect even heavily shielded radiological devices within shipping containers, but based on this author's research, there is no evidence that these have been put into use at major United States or Canadian ports. Dr. Stephen Flynn, a professor at Northeastern University and former president of the Center for National Policy, said that smuggling through shipping containers already occurs on a regular basis, and the possibility of a nuclear device being smuggled undetected in a container is not unlikely. "You name the contraband, and it is

50. GAO, *Inadequate Communication and Oversight* 2.

51. Ibid., 3.

[already] flowing through the system, whether it's knockoff products on the low end, to the movement of large sums of cash, to narcotics, to every form of weapons short of nuclear weapons, in terms of what we've found there," he said.[52] Much of this is due to the nature of the system, which because of its enormous size, often operates under the framework of if something appears to be legitimate, it is accepted, and only those things which invite suspicion are more carefully investigated. Private vessels are very unlikely to be investigated and therefore are the most likely to be used for smuggling. Devices transported on a private vessel would not necessarily have to be shielded, but for reasons explained later in this paper, the device would likely be shielded anyway to prevent detection throughout any stage of its transportation.

Another vulnerability that exists at the Port of Montreal is the consequence of Canada's organized crime. A 2011 report prepared for the Organized Crime Division of Public Safety Canada claims that there is "considerable evidence that all three of Canada's largest containerized marine ports are vulnerable to corruption and internal conspiracies" from criminal groups such as Hells Angels, the West End Gang, and the Rizzuto crime family in Montreal, often involving employees who work on the docks or in clerical positions.[53] In 2002, it was estimated that fifteen percent of longshoremen and

52. Holly Gilbert, "Risk of Nuclear Materials Being Smuggled Through Ports Should Be Taken Seriously, Say Experts" May 29, 2013, *Security Management*, http://www.securitymanagement.com/news/risk-nuclear-materials-being-smuggled-through-ports-should-be-taken-seriously-say-experts-00125?page=0%2C0 (accessed November 23, 2013).

53. Presidia Security Consulting, 19.

thirty six percent of checkers at the Port of Montreal had criminal records.[54] Often, employees with inside information will alert smugglers of a law enforcement sting or investigation. The report also details the connections between the mafia and organized crime groups in Montreal and New York, who currently operate a lucrative cooperation smuggling illicit drugs across the border into New York.[55] The example cited earlier in this paper about the massive drug operations conducted by the Rizzuto crime family in collaboration with other organized crime groups illustrates the efficiency and relative ease with which these operations are carried out, and the difficulty with which they are apprehended by law enforcement. With the proper monetary incentive, these organized crime groups would probably be very willing to smuggle, likely unaware of the exact nature of the contents, an RDD.

Montreal is also the site of a large international airport and there are several smaller airports in the area. Although it is highly unlikely that an RDD would be successfully smuggled on a commercial airline, it could be transported on a chartered or private aircraft. Department of Homeland Security (DHS) officials say that the experience of scanning air cargo at major international airports in the United States "has led them to conclude that the deployment of radiation portal monitors is not feasible at many locations due to the lack of natural choke points, where scanning would take place" and "scanning 100 percent of air cargo would be technically and logistically challenging

54. *Canadian Security Guide Book: Seaports*, Standing Senate Committee on National Security and Defence, March 2007, http://www.parl.gc.ca/Content/SEN/Committee/391/defe/rep/Seaports-e.pdf (accessed November 23, 2013), 4.

55. Ibid., 21.

and would require significant investment in equipment, staffing, and maintenance resources."[56] An RDD could easily fit inside a suitcase and would raise no particular suspicion being unloaded from a chartered plane into a vehicle. International chartered or private flights and their cargo typically undergo an inspection by customs and security officials after landing, but the extent of these examinations is usually determined by the officials as to whether they feel the passengers or cargo warrant detailed inspection. Small airports usually have very minimal inspection requirements or capabilities.

Once the RDD arrived at the Saint Regis Mohawk Reservation via a vehicle pickup at the airport or seaport or directly on a small boat, it would likely continue its journey to its destination in a passenger vehicle. An RDD or even multiple RDDs in suitcases would easily fit in any passenger car. According to the Congressional Research Report written by Jonathan Medalia, the United States Custom and Border Protection Agency has deployed radiation monitors at ports and border crossings in an effort to "detect and identify radioactive material entering the United States."[57] However, although these systems are in place and offer some protection, "terrorists intent on an RDD attack would try to evade detection" and "[i]t would be difficult for technical means to detect radioactive material smuggled across unguarded stretches of the U.S. border."[58] Since

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56. U.S. Government Accountability Office, *Combating Nuclear Smuggling: DHS has Developed Plans for Its Global Nuclear Detection Architecture, but Challenges Remain in Deploying Equipment* (July 2012), by David C. Maurer and Gene Aloise, Publication No. GAO-12-941T, Testimony Before the Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies, Committee on Homeland Security, House of Representatives, http://www.gwu.edu/~nsarchiv/nukevault/ebb388/docs/EBB037.pdf (accessed October 13, 2012), 6.

57. Congressional Research Service, 28.

58. Ibid., 29.

these technical detection measures are not in place at the Saint Regis Mohawk Reservation, this would likely be a key area that terrorists would identify as a viable option for transporting such a device into the United States.

A terrorist group would likely hire a smuggler to transport the device to a location somewhere in upstate New York or outside of New York City. Hired drivers routinely make runs from the reservation and elsewhere along the border to New York City or other locations carrying illicit drugs or other contraband. A passenger vehicle registered to a resident in New York would be unlikely to arouse suspicion even during a traffic stop. In August of 2013, five individuals pleaded guilty to smuggling 3,4 - methylenedioxymethamphetamine hydrochloride, also known as MDMA or Ecstasy, through the Saint Regis Mohawk Reservation. This group of individuals was smuggling Ecstasy from Canada to New York City, receiving cash and cocaine in payment for the drugs, and then smuggling this back into Canada. The group received $1000 to $1500 for every trip, plus bonuses.[59] In September of 2013, a Canadian citizen was arrested by United States Border Patrol Agents after he was observed entering New York through the reservation. His SUV was searched and 58,183 grams of Ecstasy were found in his vehicle, which he was planning to transport to New York City for distribution.[60] These individuals are just some of many arrested every year transporting drugs and other contraband across the border through the reservation. These individuals often have little

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59. Brian Kelly, "Five Admit Roles in Cocaine, Ecstasy Smuggling Ring Through Reservation," August 20, 2013, http://www.watertowndailytimes.com/article/20130820/NEWS07/708209853 (accessed November 24, 2013).

60. Bob Beckstead, "Ottawa Man Pleads Guilty in Drug Smuggling Case," September 25, 2013, *Watertown Daily Times*, http://www.watertowndailytimes.com/article/20130925/NEWS07/709259825 (accessed November 24, 2013).

or no connection to organized crime or terrorist groups but are simply in it for the money. They often have very little knowledge about what they are smuggling or where it came from. They might be told the suitcases were full of drugs or drug making equipment or some other form of contraband when it actually contained an RDD, and they would likely not even be aware of the difference. Law enforcement, who are used to searching for drugs and other contraband themselves may not even recognize a well-disguised RDD, nor will drug dogs help in this situation. Lightly traveled state and county roads near the reservation lead to nearby U.S. Routes 11 or 30, which provide access to Interstate 81 to the west and Interstate 87 in the southeast. These routes would provide easy access to remote areas in upstate New York where there is a known terrorist presence in very little travel time. Although this area is monitored by law enforcement, the arrival of a small passenger car would likely rouse very little suspicion, and the smugglers could arrange for an off-site or neutral area exchange. Although it is quite likely that they might be monitored exiting the border, a well-planned operation would likely utilize some techniques which would make detection and detention less likely, but these techniques will not be discussed in this paper. However, many smugglers are successful at routinely transporting smuggled goods across the border and most of those who are caught have already completed multiple trips. Unlike drug smugglers who are motivated by profit and will try to make as many attempts as possible to move drugs across the border, law enforcement need only miss one instance of an RDD being smuggled across the border for it to result in great tragedy.

When a Threat Becomes Reality: Likelihood of Detection

Even if the RDD is successfully smuggled through the Saint Regis Mohawk Reservation into the United States, in order for the attack to be successful, the device has to be positioned at its target. Once the device is in the United States, it could theoretically be placed anywhere in the country, but a terrorist group would most likely target an East Coast city, both because reduced travel distances decreases the likelihood of detection and due to the symbolic and shock value associated with many of these cities. Washington, D.C. and New York City are obviously major targets, but they also have the most advanced technologies for radiation detection and the largest law enforcement presence. Cities such as Boston or Philadelphia might be considered "softer" targets which would still result in mass casualties and national consternation. A joint special assessment written by the Department of Homeland Security and the Federal Bureau of Investigation states that terrorists would likely focus on "prominent economic, infrastructure, and political targets with the goal of producing mass casualties, visually dramatic destruction, significant economic aftershocks, and fear among the U.S. Population" and such an attack would likely occur "at population centers situated along the periphery of the United States, since an attack at such locations would limit the logistics and risk of detection in transporting the weapon."[61]

As discussed earlier in this paper, RDDs are used more for their psychological effects rather than physical damage, although the cleanup costs and long-term effects can

61. U.S. Department of Homeland Security and Federal Bureau of Investigation, "Potential Terrorist Attack Methods: Joint Special Assessment," April 23, 2008, http://www2.gwu.edu/~nsarchiv/nukevault/ebb388/docs/EBB015.pdf (accessed December 2, 2013), 40.

be substantial. For terrorists, however, the psychological effects are just as or even more important than physical damage so a RDD strike on any major city in the United States would be considered a success. It is also not out of the question that terrorists would be able to build or acquire a more powerful crude atomic device or a suitcase nuclear weapon, which would vastly increase the amount of physical damage. Whatever weapon terrorists are able to acquire, their main focus will be on placing the device in the desired location for detonation without being detected. Although nuclear detection technology has greatly improved over the last decade, nuclear protection programs in even the largest cities are still imperfect and expensive to maintain, and these exploitable flaws leave these cities vulnerable to attack.

In 2002, ABC News successfully smuggled a fifteen pound cylinder of depleted uranium metal, which was loaned to them by the Natural Resources Defense Council, a non-profit environmental advocacy group, into the United States through the Staten Island dock in New York City, which supposedly has a state-of-the-art radiation detection system designed to detect even small amounts of radiation.[62] The cylinder was packaged in a lead-lined steel container to reduce the amount of detectable radiation, using easily accessible plumbing pipe and end caps from a plumbing supply store.[63] The cylinder was placed inside an unsuspicious looking container, and even though x-ray scanning equipment was used on the container, customs officials did not detect radiation and

62. Brian Ross, Rhonda Schwartz, and David Scott, "Customs Fails to Detect Depleted Uranium," September 11, 2002, *ABC News*, http://abcnews.go.com/WNT/story?id=129321&page=1 (accessed November 25, 2013).

63. Natural Resources Defense Council (NRDC), "The ABC News Nuclear Smuggling Experiment: The Sequel," September 11, 2003, *NRDC.org*, http://www.nrdc.org/nuclear/furanium.asp (accessed November 25, 2013).

therefore did not open up the container for closer inspection. According to the researchers who worked on this project, if the fifteen pound cylinder had contained weapon-grade highly enriched uranium (HEU) instead of depleted uranium, fifteen pounds of HEU would be enough to create a one-kiloton nuclear device, equivalent to 1,000 tons of trinitrotoluene (TNT), which would be "four times more powerful than the explosive energy of the two jets striking the World Trade Center and the collapse of the twin towers."[64] Although HEU would emit more radiation than the uranium used in the test case, the additional radiation emitted by the HEU could be easily shielded to avoid detection. If properly shielded and transported in a passenger vehicle, it is very unlikely that such a device would be identified by vehicle scanning radiation detectors. The depleted uranium cylinder used by ABC was quite small and fit into a twelve ounce soda can.[65] Several of these small devices could be transported in a small vehicle within close proximity to a multitude of targets and be detonated without any warning. The design of the bomb that the United States dropped on Hiroshima during World War II, known as the "Little Boy," used about 141 pounds of HEU and produced a fifteen kiloton yield.[66] Even an explosion half this size is cause for considerable concern, and if terrorist were able to acquire enough HEU, they could construct several devices or one larger device equivalent to a several kiloton yield.

The Government Accountability Office's Forensic Audits and Special Investigations Team (FSI) also tested the scenario of smuggling a nuclear device into the

64. Ibid.

65. Ibid.

66. Ibid.

United States. Their goal was to use red team operations to identify vulnerabilities that pose a "significant and contiguous threat to national security and public safety."[67] Using counterfeit documents created with hardware, software, and materials available to the general public, the FSI team was able to create counterfeit documents to obtain a genuine license from the Nuclear Regulatory Commission and even create a fictitious company and have radioactive material shipped to this front company in the Washington D.C. area.[68] This test was designed to show that it is possible for even those with unsophisticated and readily available equipment, to "purchase small amounts of radioactive material for stockpiling."[69] The smugglers who conduct operations at the Saint Regis Mohawk Casino already have the demonstrated capability and expertise to create documents such as those produced by the FSI team, including obtaining authentic licenses, creating front companies, and official looking bills of lading, purchase orders, and import/export documents. With modern technology, it is relatively easy and inexpensive to counterfeit such documents. The FSI team was also able to successfully cross the northern border at "locations that were unmanned and unmonitored" posing as individuals with simulated radioactive material.[70] Even when they were questioned by

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67. U.S. Government Accountability Office, *Use of Covert Testing to Identify Security Vulnerabilities and Fraud, Waste, and Abuse*, (November 14, 2007), Statement of Gregory D. Kutz, Managing Director, Forensic Audits and Special Investigations. Publication No. GAO-08-286T. Testimony before the House Committee on Homeland Security, House of Representatives, http://www.gpo.gov/fdsys/pkg/GAOREPORTS-GAO-08-286T/pdf/GAOREPORTS-GAO-08-286T.pdf (accessed November 25, 2013), 1.

68. Ibid., 5.

69. Ibid., 5-6.

70. Ibid., 6.

authorities about obtaining or transporting nuclear material, the FSI team was able to easily convince the authorities that their activities were legitimate using very little documentation. Smugglers could create or obtain documentation claiming they were a licensed company or transporter that dealt with radioactive materials so even if they were stopped and inspected by law enforcement, they would have a cover story for their activity. As the FSI team discovered, in regards to radioactive materials, sometimes the best disguise is no disguise at all. Unlike illicit drugs, radioactive materials do have legitimate uses, so it would be easier for smugglers to pass off their activity as lawful using counterfeited or false documentation to back up their claim.

The United States is not completely defenseless against this threat. Efforts have been put in place to significantly improve the detection capabilities regarding radioactive materials. The Department of Homeland Security currently utilizes equipment such as static portals and imaging systems, mobile systems, and hand-held radiological detectors at border entry points, at major transportation hubs and shipping ports, alongside highways and roads, in cities, and at special events.[71] United States Customs and Border Protection has devices such as Radiation Portable Monitors (RPMs) which can detect nuclear material, even with very low levels of radiation, in vehicles during the normal flow of traffic, and identifies the "location of the radioactive source in the vehicle."[72] Another type of radiation detector that has been developed is known as the Stand Off

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71. Domestic Nuclear Detection Office, "Revolution in Nuclear Detection Affairs," April 25, 2012, US Department of Homeland Security, PowerPoint Presentation, http://blogs.fas.org/blog/wp-content/uploads/2012/06/2012-June-05-Gowadia-FAS-no_animations.pdf (accessed November 25, 2013).

72. Ibid.

Radiation Detections System or SORDS. This system is designed to detect radiological sources being transported on moving objects such as a passenger vehicle or commercial truck. This system is capable of detecting lightly shielded sources at distances greater than 100 meters.[73] This device is important because it is able to identify specific types of radioactive isotopes, allowing it to distinguish between common and legal radioactive materials such as bananas and kitty litter and potentially threatening radioactive materials[74] such as HEU or plutonium.

If devices such as these are regularly deployed along major highways, access points to cities, and at special national security events, this increases the chance that an attempted terrorist attack using an RDD might be detected and neutralized. Additional use and deployment of these devices is recommended and is an important aspect of responding to the threat described in this paper. However, the likelihood of this equipment to adequately protect against the threat is questionable. First of all, these systems have to be in the right places and functioning properly in order to be effective. If terrorists were able to gain information about the locations and times of deployment of this equipment, they would likely develop a travel route to bypass these detection systems, or the detection systems may simply not be in place at all on the route they choose to take. These systems are expensive to purchase and operate. It costs about $250,000 over a five year period to purchase, install, and maintain a radiation portable

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73. Bernard Harris, Raytheon, and Kanai Shah, Radiation Monitoring Devices Inc., "Detection and Identification of Radiological Sources," *Technology Toda*y, no. 1 (2012): 28, http://www.raytheon.com/newsroom/technology_today/2012_i1/radiological.html (accessed November 1, 2013).

74. Ibid.

monitor.[75] In order to be effective, there must be several layers of sensors and detectors surrounding a city to allow an interdiction team time to respond. If the sensors and detection systems are in place, they are ineffective unless there is an interdiction team in place that can respond to and neutralize the threat in a timely manner. The reason suicide bombers are often very successful is because even if they are detected, they are usually not detected soon enough to permit an effective response. Interdiction teams require around the clock shifts of specially trained individuals in addition to vehicles and equipment, which can cost several millions of dollars per year.[76] The total cost of a multi-layer detection system and interdiction teams would be in the tens of millions per year per city, and engineers at the Institute of Electrical and Electronics Engineers claim that with current technology, this would only mitigate the threat from an unshielded or lightly shielded plutonium weapon, not a uranium or radiological dispersal device.[77] Deploying additional and specialized radiation detectors would help increase the ability to detect an RDD, but this would also come with additional expenses. Most cities do not have much money in their budgets to cover the costs of a layered radiological defense system. The Domestic Nuclear Detection Office (DNDO) has provided over 8,500 nuclear detection devices to cities around the nation,[78] and cities such as New York City and Los Angeles

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75. L.M. Wein and M.P. Atkinson, "The Last Line of Defense: Designing Radiation Detection-Interdiction Systems to Protect Cities From a Nuclear Terrorist Attack," *IEEE Transactions on Nuclear Science* 54, no. 3 (June 2007): 660, doi: 10.1109/TNS.2007.897829 (accessed December 1, 2013).

76. Ibid.

77. Ibid., 663.

78. Dan Verton, "Boston Bombings Raise Concerns About Chemical, Biological, Nuclear Terrorism," April 26, 2013, *HSToday.us*, http://www.hstoday.us/briefings/

have spent millions of dollars in equipment and training in an effort to respond to the threat of radiological terrorism, but most other cities lack adequate protection. Richard Daddario, the NYPD's Deputy Commissioner for Counterterrorism, said the city is working with the DNDO to "put in place a permanent radiological defensive ring of sensors around the city to monitor traffic at all bridges and tunnels."[79] As these layered systems are put into place, they will provide increased warning time and protection against an RDD attack; however, it is unlikely that even these systems will be completely effective at detecting all nuclear devices, especially those that are shielded.

Despite an increase in security efforts, vulnerabilities remain. If the sensors are in place, law enforcement or radiological interdiction teams still have to be able to respond to the threat quickly. A small passenger vehicle carrying one or multiple RDDs will be difficult to detect and difficult to stop before it reaches its intended destination, or the driver may decide to detonate the device prematurely if it believes it is about to be apprehended. Even New York City, Washington D.C., or Los Angeles would likely have difficulty responding quickly enough to the threat, and very few cities have the detection and response capabilities of these cities. The device that was detonated during the April 2013 Boston Marathon was placed in a very crowded area undetected. If that device had been an RDD, it would have caused substantially more physical, economic, and psychological damage than the simple mechanical device that was used. RDDs are small enough that they could be easily placed in a backpack or suitcase and carried on foot into

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industry-news/single-article/boston-bombings-raise-concerns-about-chemical-biological-nuclear-terrorism/c3f4021a9390bc3c6d750f17f8 58a018.html (accessed December 2, 2013).

79. Ibid.

heavily crowded areas and buildings, including subways, office buildings, and shopping malls. According to retired Air Force Colonel Randall Larsen, director of the non-profit organization The Institute for Homeland Security and the former Executive Director of the Congressional Commission of the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, law enforcement in New York City, which has some of the best nuclear detection capabilities of any city in the United States, is "overly reliant on the rare instances when investigators receive a tip of trouble."[80] A 2008 New York City training exercise using helicopters with ultra-sensitive radiation detectors failed to detect unshielded radioactive cesium-137 that had been deliberately placed in an SUV on the streets of Lower Manhattan.[81] Since most radioactive materials that might potentially be used to construct an RDD such as cesium-137, strontium-90, or plutonium can be shielded with lead, steel, or other materials to make them much more difficult to detect, an RDD used for an attack would likely be shielded. If current technology for radiological detection has difficulty detecting deliberately placed, unshielded radioactive material, it is less likely that they will be able to detect shielded material being transported in an unknown vehicle at an unknown time. Hundreds of thousands of vehicles travel in and out of major cities on a daily basis. An RDD could be transported up the Saint Lawrence River via boat or from Montreal or Toronto in a vehicle to the Saint Regis Mohawk Reservation in a matter of hours. A passenger vehicle can travel

80. Bill King, "NYC Dirty Bomb Drill Enters Fourth Day," April 8, 2011, *ABC Eyewitness News*, http://abclocal.go.com/wabc/story?section=news/local/new_york&id=8060540 (accessed December 2, 2013).

81. Spencer Hsu, "Securing the Cities No Easy Task," February 3, 2008, *The Washington Post*, http://articles.washingtonpost.com/2008-02-03/news/36828188_1_model-for-other-cities-nuclear-threats-homeland (accessed December 2, 2013).

from the northern New York border to multiple cities on the East Coast in less than a day. Theoretically, within a twenty-four hour time period, the device could enter Canada, be transported into the United States, and arrive at its target, providing very little time or notice that would allow the attack to be neutralized. If border security and radiological detection measures fail to identify the threat, the result is a devastating attack.

The U.S. Department of State describes the weapons of mass destruction (WMD) terrorism risk by identifying several factors. First, the openly stated intentions of terrorist groups to acquire such weapons, second, the existence of weakened or failed states and the fall of the Soviet Union which may provide access to materials or weapons, and finally, technological and communication advantages that have "enabled terrorist groups to acquire quickly the expertise and coordinate the delivery of WMD through extended, transnational networks."[82] Using this line of reasoning as a model, it is easy to see how the potential threat described in this thesis fits within the Department of State's framework. Terrorist groups all over the world and in the United States have openly expressed their desire to acquire and utilize weapons of mass destruction against the United States in order to further their radical agendas. Nuclear weapons are viewed as the most powerful weapons available and the most powerful nations in the world use nuclear weapons as a safeguard of their status. Many terrorists believe that if they can use any type of nuclear weapon, even a dirty bomb, the resulting fear, confusion, and destruction will elevate them to a position of power and control. Terrorists are not the only ones who desire power and control, and nuclear weapons and radiological materials are viewed as a bargaining chip or a lucrative saleable item, and are very difficult to control, especially in

82. U.S. Department of State, "WMD Terrorism Risk," http://www.state.gov/t/isn/wmd/c28393.htm (accessed December 2, 2013).

failed states or corrupt governments. Terrorists searching for nuclear weapons or materials will find willing partners throughout the world. The massive growth and widespread availability of the Internet and cell phones makes it ever easier for terrorist groups to collaborate and find what they need and how to get it to where they want it.

Starting with the assumption that terrorist groups are actively trying to acquire radiological weapons of some kind and use these weapons to launch an attack on the United States, the Akwesasne Mohawk Reservation becomes the perfect linchpin for them to accomplish their objective. The reservation's extensive transnational organized crime and terrorist connections, including the East European states that are the most likely sources of nuclear materials, as well as the Middle East, Africa, and South America, home to various branches of Al-Qaeda and other well-known terrorist organizations, brings together both the motive and means to launch such an attack. The availability of transportation routes and the law enforcement jurisdictional quagmire, already frequently exploited by smugglers, demonstrates there is an opportunity and methodology already in place for moving a weapon to its desired location. Current technological limitations, delayed implementation of more advanced detection technology, and funding shortages for security countermeasures increase the likelihood of success. Such operations are never guaranteed to succeed of course, but based on an analysis of currently available open-source material, there is no reason to believe that such an operation could or would not succeed. All of the pieces of the puzzle exist; all it takes is someone with the ability to put them all together. Broadly defined, the components such as who (terrorists or terrorist groups), what (a radiological attack), why (terrorist's openly stated motivations) and how (the process described in this thesis) are

all known information. The unknown information is where and when. Although an attack may not be imminent, under the current system, the where and when may not be known until it is too late. One of the only ways to be truly effective in countering this threat may be targeted intelligence collection and an increased border enforcement focus in this area in order to disrupt the organized crime and smuggling networks and remove the opportunity for terrorists to use the Saint Regis Mohawk Reservation as a conduit for moving an RDD into the United States. Such an approach should not focus solely on the reservation itself, but also on the surrounding rings of drug networks, terrorism, and organized crime that feed through the area. Given this is only a small section of the border and securing it will not prevent terrorists from using other means to launch an RDD attack, it would reduce a critical vulnerability that leaves the United States open to attack. With all of the known information about this weakness, it would be prudent to use this knowledge to continue to implement and refine the proper safeguards and develop policy and operational strategies to prevent this vulnerability from ever being exploited.

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