

INTELLIGENCE REPORT

ÉVALUATION DE RENSEIGNEMENTS



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Terrorist Attack Methodology and Tactics Against Bridges and Tunnels: January 2002 – December 2008

The subject of this update report falls within the intelligence requirements identified by senior managers in Transport Canada's Security Policy, SIMS, Surface Transportation Policy, as well as stakeholders.

*** An Executive Summary of this report is available on request. This is a declassified version of IR #80-2009.*

Key Findings

- Transport Canada has no information suggesting that a terrorist group is planning an attack on major bridges or tunnels linking Canada and the United States. (U)
- Between January 1, 2002 and December 31, 2008, terrorists attacked bridges/tunnels approximately 190 times¹ – virtually all of these against bridge structures. (U)
- Approximately 86 people died in these attacks, and 172 were injured. (U)
- No terrorist group has demonstrated an ability to destroy a tunnel, during the period reviewed. Only three incidents involved attacks against tunnels;

¹ Attack statistics from Iraq and Afghanistan are not included in this total as these are active combat zones; including them would skew the results. However, the attack methodology and tactics in these areas were studied because al-Qaida and other groups have tested and refined attacks there. (U)

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- one in Pakistan in January 2008, one in December 2006 in India, and one in Colombia in April 2006. None resulted in serious damage. (U)
- The five countries attacked most frequently (Colombia, Pakistan, India, Nepal and Thailand) accounted for 77 percent of all attacks – 147 incidents. (U)
 - Most bridge attacks involved terrorists placing an improvised explosive device on a bridge and detonating it, causing little permanent damage. (U)
 - Terrorists attack bridges for a variety of reasons: destroy or damage the structure, restrict movement, attack troops or some other human target (e.g. a city mayor). (U)
 - Only once in the past seven years have terrorists planted a second IED at a bridge aimed at killing or wounding first responders and rail workers. (U)
 - Since 2007, al-Qaida and/or sympathetic groups have conducted a campaign targeting bridges in Iraq and Afghanistan, and have developed effective methodology and training to carry out an attack. However, few other terrorist groups have demonstrated a capability to destroy large bridges; “softer” (human) targets are more vulnerable to attack. (U)
 - Major bridges spanning the U.S.-Canada border have been subjected to many suspicious incidents, including videotaping, bomb threats and underwater inspections. No information suggests that these suspicious incidents were carried out by terrorist groups. (U)
 - Many Canadian bridges have been subjected to direct and indirect pressure tactics by domestic or single/multi-issue groups – none of which have seriously threatened the structure. (U)

Introduction

Canada has many large bridges and tunnels, including 24 international vehicular bridges and tunnels linking Canada and the United States – specifically to the states of Maine, Vermont, New York, Michigan and Minnesota. Fourteen of these bridges and tunnels are in Ontario, nine are in New Brunswick, and one is in Quebec. As well, there are nine international railway bridges and tunnels – eight in Ontario, with another one in New Brunswick. Damage to one or more of these structures would cause short to medium-term traffic congestion at the border, and would hurt the economy of both countries.² (U)



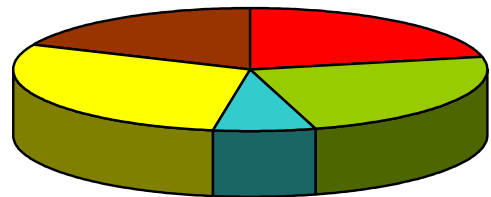
² For example, the Ambassador Bridge linking Detroit and Windsor is the busiest crossing point between Canada and the U.S., while the nearby Detroit-Windsor Tunnel is the second busiest crossing point. (U)

Major bridges spanning the Canada-U.S. border are vital for maintaining Canada’s strategic and commercial interests. Each day approximately \$1.2 billion worth of trade crosses the border – the world’s largest trading partnership – much of it over international bridges and tunnels. (U)

Details

In the seven-year period between January 1, 2002 and December 31, 2008, terrorists have conducted at least 190 attacks on bridges and tunnels worldwide; almost all involved some form of improvised explosive device (IED). Approximately 86 people died and 172 were injured. Most bridge and tunnel attacks were launched by terrorist organizations and insurgents operating in countries undergoing civil war or nation building. A significant percentage of attacks on bridges were carried out to influence military operations in the region, as opposed attack civilians. In a few situations, bombings occurred in the days leading up to special events (e.g. ASEAN summit, or a visit by the U.S. president). In these cases, the bombings (or attempted bombings) did not pose a direct threat to participants but were meant to derail the visit or discussions. (U)

Top Five Countries Attacked



The five countries attacked most frequently (Colombia, Pakistan, India, Nepal and Thailand) accounted for 77 percent of all attacks – 147 individual incidents. However, many other countries were attacked too, including Russia, Georgia and Turkey. Reasons for attacks range anywhere from attempts to either discredit or bring down the national government and cause political/economic upheaval, to attempts to dramatically alter political policy and cause chaos. Almost no attacks against bridges took place in stable countries.³ (See Appendix A for details.) In many cases, paramilitary groups were “protecting” their operating areas from government interference (e.g. Colombia). (U)

Historically, major Canadian bridges have not sustained attacks from extremist individuals or groups, though police receive periodic bomb threats.⁴ Aboriginal warrior societies and groups sometimes issue blockade threats, but only rarely have they tried to sabotage a bridge – the most recent being during the Oka crisis in 1990; that involved two cases of sabotage to a rail bridge. Disruptions of bridges’ operations by Aboriginal or

³ Worldwide, approximately 85 percent of all significant terrorist acts conducted against transportation targets in recent years have been directed against surface targets, but less than 10 percent of these attacks were directed against bridges. (U)

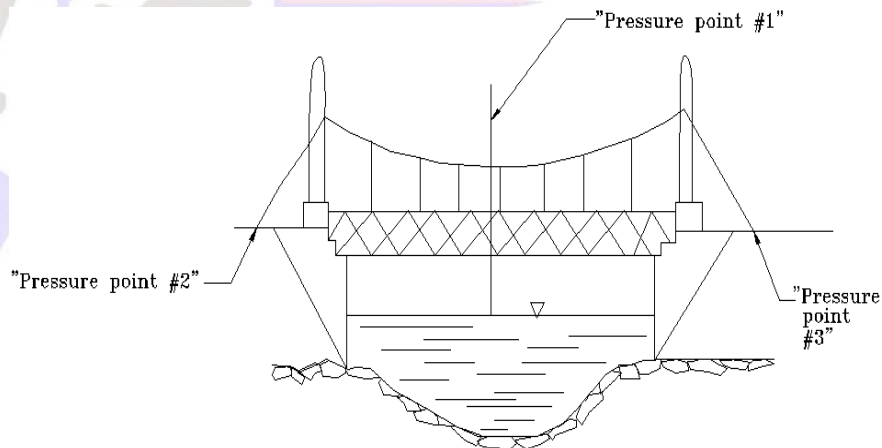
⁴ Although bomb threats are not routine at Canadian bridges, they do occur. For example, Vancouver police received a bomb threat on August 2, 2005 claiming that both the Oak and Knight Street Bridges would blow up at 2 p.m. Security officials conducted a thorough ground and water search before the deadline passed, and did not find any bomb. (U)

single/multi-issue groups are generally in the form of peaceful demonstrations. Over a period of one and a half years from November 2006 to May 2008, an organization called the “Front de Liberation du Quebec (FLQ), Camille Laurin cell” threatened bomb attacks against a number of Montreal targets, including bridges. The group claimed to have planted 38 explosive devices, but no attacks or suspicious incidents materialized. A “lone-wolf” attack (an attack by an individual inspired by terrorist ideology, but working alone) is less likely to occur against a bridge because of the great quantity of explosives needed, as well as the high level of planning, training and reconnaissance necessary to destroy or seriously damage a bridge or tunnel. (U)

Since 9/11, al-Qaida and other Sunni extremists have indicated an interest in attacking bridges – although most of their attacks have occurred in combat areas and had clear military objectives. Not only has al-Qaida actually trained adherents on how to attack bridges, but the organization has even produced videos and printed resources (complete with illustrations) showing precisely where to plant explosives, and pointing out structural weaknesses and stress points in various bridge structures. San Francisco’s Golden Gate Bridge was featured in one of these al-Qaida videotapes. (*The Encyclopedia of Afghan Resistance* has also published this data as it relates to suspension bridges. See illustration.) In 2003, al-Qaida reportedly considered an attack on New York’s Brooklyn Bridge.⁵ Threats have also been made against Baltimore’s harbour tunnel, and in 2006 terror plots were discovered against the Holland Tunnel (linking New York to New Jersey) as well as the Chunnel (linking England to France). (U)

Most bridge attacks today generally result in little permanent damage to the structure. Primarily this is because terrorists use small IEDs that don’t have enough explosive force to destroy or significantly harm a large steel and concrete structure. In many cases, bridges are operating again shortly after a bomb explosion. When terrorists devote more time to the planning process and identify the most critical, high stress points on a bridge (e.g. important support pylons or suspension cables), their chances of destroying it increase dramatically. Luckily, few terrorists take the time or use enough explosive material. However, in 2007 al-Qaida and sympathetic groups conducted a large number of attacks

Terrorist Planning Sketch



“When you destroy large bridges by explosives, loading the middle part will destroy the netted area (the roadway), the explosives should be combined with others placed at the two pressure points. This will destroy the bridge.” *

Encyclopedia of Afghan Resistance

⁵ Prior to 9/11, security officials foiled a plan worked out by Islamic extremists who intended to bomb a number of New York City landmarks in 1993, including the George Washington Bridge. (U)

in Iraq and Afghanistan using a variety of methods to ascertain the best methodology for attacking bridges – from small IEDs to large VBIEDs driven by suicide bombers.⁶ The campaign resulted in many destroyed bridges, and demonstrated a new sophistication in planning and execution of operations by Sunni Islamists extremists. However, al-Qaida has not translated this new capability into a bombing campaign in Europe or North America, and most other terrorist groups not affiliated with al-Qaida continue to use small IEDs relatively ineffectively against bridge structures.⁷ (U)

Sometimes terrorists use a bridge to channel their target into a narrow area before detonating an explosive. In this case the bridge itself is not the target, but is only being used to force the target into a narrow killing zone – to increase the chances of death. For example, on July 12, 2007 unidentified attackers detonated a remote-control IED placed on a bridge in Kabbal, Pakistan, as a military convoy was crossing the structure. A security vehicle was damaged, as well as the bridge. (U)

VBIED Attacks Against Bridges

Excluding attacks in Iraq and Afghanistan, only very rarely have terrorists used a VBIED to attack a bridge, and most have occurred in Colombia over a period of several months. The attacks occurred once in 2008 in Pakistan, and six times in 2002 in Colombia during a four-month surge of bridge attacks. Details include: (U)

- On August 28, 2008 in Pakistan, unidentified probable Islamist attackers detonated a remote controlled VBIED on a bridge in northwestern Pakistan as a police bus was crossing it. Eleven people died. The vehicle was blown into the river by the force of the explosion. (U)
- On May 24, 2002 in Colombia a VBIED belonging to the Revolutionary Armed Forces of Colombia



⁶ In 2007 alone, al-Qaida and sympathetic groups attacked well over 30 bridges in Iraq – many with devastating effect – testing out a variety of methodologies. (U)

⁷ At least two events in Afghanistan over a period of one month in 2008 demonstrate that the Taliban has the expertise and training to destroy bridges. On May 17, 2008 a Taliban bomber planted a large IED on a bridge in Andar. While he was setting the explosive, it blew up, killing him and destroying the bridge. One month later on June 16, 2008 in Arghandab, hundreds of probable Taliban armed attackers attacked the city and detonated several IEDs, destroying several bridges. (U)

- (FARC) detonated on the Molino Viejo Bridge. (U)
- On May 23, 2002 in Columbia possibly the National Liberation Army (ELN) was responsible for destroying the El Guanabano Bridge with a VBIED. Four people were injured. (U)
 - On May 10, 2002 in Colombia, FARC members detonated a truck bomb on the El Tacare Bridge. (U)
 - On March 18, 2002 in Colombia, FARC guerrillas exploded a car bomb on the Guaitara Bridge, linking Colombia with Ecuador, causing damage to the roadway. (U)
 - On January 18, 2002 in Colombia, FARC guerrillas used a remote-control car bomb to blow up a bridge connecting Villavicencio to the demilitarized zone. (U)
 - On January 17, 2002 in Colombia, FARC members used a car bomb to destroy the Alcaravan Bridge at midnight. This bridge linked the demilitarized zone with the centre of the country. (U)

In Iraq, extremists particularly use suicide bombers to deliver a VBIED to the most vulnerable place in the bridge. Frequently, their attacks are devastatingly effective and result in a destroyed structure. (U)

Collapsing a Bridge Over Another Transportation Artery

A bridge may present a tempting target not just for its individual value, but because it can be collapsed over a secondary transportation system (e.g. a canal or major road), causing a double-barreled effect. *Except for Iraq and Afghanistan, this type of attack has not been noted during the period under review.* Probably in an effort to test and refine various methods and tactics, in 2007 terrorists in Iraq conducted many attacks of this type, demonstrating that al-Qaida and al-Qaida sympathetic groups have a great deal of training and capabilities in this form of bridge attack. Examples include: (U)



- On August 14, 2007 in At Taji, Iraq, a suicide bomber detonated a VBIED on Highway One Bridge over the Grand Canal, killing 10 civilians and injuring six others. The bridge was damaged. It is unknown if terrorists hoped to drop the bridge into the canal, thereby cutting two means of transportation. (U)
- On June 12, 2007 at 7:30 a.m. north of al-Hillah, Iraq, unidentified attackers detonated a VBIED on an overpass over the main north-south highway from

Baghdad, damaging 60 percent of the bridge, and blocking the main highway with debris. No injuries were reported. (U)

- On June 10, 2007 on a major overpass near al-Iskandariyah, Iraq, a suicide bomber detonated a VBIED near an American checkpoint on a bridge. The bridge collapsed, blocking the road below, and killing three soldiers. (U)
- On May 29, 2007 near al-Amiriyah, an unidentified suicide bomber detonated a VBIED on a bridge over the Majarrah Canal, causing the western end of the bridge to collapse, and blocking the canal – a choke point between two important lakes. No-one was injured. (U)

Tunnel Attacks⁸

Terrorist attacks against tunnels are extremely rare events, and no group has demonstrated an ability to attack and destroy a tunnel effectively – even al-Qaida. Worldwide, at least three attacks against tunnels were carried out – all causing very limited damage – during the period under review: one in 2008 in Pakistan, and two in 2006 (India and Colombia).⁹ A successful attack against a tunnel would not necessarily result in destruction of the structure. The goal might involve making the infrastructure unusable for many days or weeks due to a toxic chemical spill, or killing large numbers of people inside the tunnel. One possible scenario might involve causing large fires at both ends of a tunnel in an attempt to trap people inside, and suffocate them. (U)

An unsuccessful attack occurred on April 30, 2006 in Colombia when suspected FARC guerrillas camouflaged 200 kg (441 lbs) of explosives under some fruit in a truck parked inside the Penaliza Tunnel on the Panamericana Highway – the region’s most important thoroughfare. Police were able to deactivate the bomb before it exploded. The incident closed the tunnel for 10 hours. In another instance, in Russia on May 30, 2005 terrorists attempted to blow up the Gimry Tunnel in Chechnya; security forces stopped the terrorists who were planting mines at the entranceway. (U)

A Taliban Threat to Bridges?

On March 31, 2009, a senior Taliban commander (Baitullah Mehsud) who has carried out a number of daring attacks in Pakistan issued a threat against the United States, claiming that the Taliban was planning a major attack in Washington.¹⁰ Although he didn’t

⁸ This section does not include subway/commuter rail tunnels. (U)

⁹ On January 26, 2008 in Pakistan Taliban forces in Kohat opened fire on a tunnel with firearms, damaging the structure but causing no injuries. On December 26, 2006 in India, National Liberation Front of Tripura elements detonated two IEDS at a railway tunnel under construction in West Tripura, causing light damage. On April 19, 2006 in Colombia unknown attackers exploded a bomb near a tunnel on the Bogota-Villavicencio highway causing unknown damage. (U)

¹⁰ Baitullah Mehsud has had a \$5 million bounty on his head for some time, and has close links to al-Qaida. He is considered a “rising star” in terrorist ranks, and is linked to the December 2007 killing of former Pakistani Prime Minister Benazir Bhutto. In addition he carried out the March 2009 attack on a Pakistani police station that resulted in many dead, and the September 2007 bombing on the Marriott hotel in Islamabad that killed 54 people. (U)

specifically mention bridges or tunnels, at least two events in Afghanistan over a period of one month in 2008 demonstrate that the Taliban has the expertise and training to destroy bridges. On May 17, 2008 a Taliban bomber planted a large IED on a bridge in Andar. While he was setting the explosive, it blew up killing him and destroying the bridge. One month later on June 16, 2008 in Arghandab, hundreds of probable Taliban armed attackers assaulted the city and detonated several IEDs, destroying several bridges. (U)

Suspicious Incidents and Other Threats

Terrorists are not the only threats to bridges and tunnels. Criminal organizations, single/multi-issue groups (e.g. environmental or anti-globalization) and Aboriginal warrior societies make bomb threats or organize demonstrations resulting in bridge closures and lost business. Aboriginal groups have organized protests relating to unresolved land claims and natural resource usage. Sometimes these have resulted in blockages and threats against bridges. Even possibly harmless suspicious incidents can close a bridge.¹¹ However, some suspicious incidents warrant closer examination. In recent years a number of suspicious incidents have occurred at important bridges that might represent reconnaissance and/or pre-attack planning by one or more terrorist groups. These include: (U)

- On November 7, 2008 an inert training grenade was found in the water under the Ambassador Bridge during a routine dive in the Detroit River. The grenade had been in the water for some months as it was covered in algae and zebra mussels. (U)
- An unidentified person made a bomb threat on the morning of October 22, 2008 against the Pitt River Bridge in New Westminster, BC. There are two Pitt Bridges – one for the highway and one for rail. The New Westminster police investigated both bridges but found nothing. Rail traffic was cleared approximately three and a half hours after the call was received. (U)
- On June 22, 2008 an unidentified person called the Blue Water Bridge in Sarnia Ontario and claimed that a truck containing a bomb would be crossing the bridge the next day (June 23). Police took the call seriously partly because the name of the transport company was given. In the end, nothing occurred. (U)
- On August 7, 2008 the Blue Water Bridge spanning the St. Clair River between Ontario and Michigan was closed for about 90 minutes after unidentified assailants phoned in a bomb threat to the Canadian Coast Guard. All commercial shipping and recreational boating traffic was halted. (U)
- On July 7, 2006, security investigators discovered an Islamic terrorist plot to detonate a large vehicle bomb in the New York City Holland Tunnel. The

¹¹ For example, on May 6, 2005 maintenance staff of Seaway International Bridge (Cornwall-Massena) found a blasting cap on the bridge. Security staff responded by closing the south channel span for 30 minutes until they had completed an inspection with police dogs. (U)

- terrorists hoped to breach the tunnel walls and flood Lower Manhattan's financial district with a deluge of water from the Hudson River.¹² (U)
- On October 3, 2005 Arabic graffiti was discovered on support columns under twin rail bridges in Calgary. Also depicted was a person aiming an assault rifle, five cruise missiles, a woman with a bomb, a grenade, and the words "Death is peace." (U)
 - On August 18, 2005, two individuals stopped their vehicle under a major bridge in the Halifax-Dartmouth area, and began photographing the underside of the bridge as well as the tower legs, cables and towers. Five hours later, a different vehicle stopped near the MacKay Bridge, and an individual with scuba tanks entered the water. The truck then moved to a different area of the bridge and picked the diver up. (U)
 - On August 4, 2005, four males of Middle Eastern appearance were observed with a possible global positioning system near a major bridge in Windsor, Ontario. (U)
 - On September 2004, three Spanish-speaking men were overheard discussing plans to use scuba gear to objects at the abutment of a major bridge in the Buffalo-Fort Erie area. (U)
 - In July 2004, U.S. security officials received a non-specific, threatening letter claiming that bombs would be exploded in sequence on American bridges on August 11. (U)

Can Terrorists Learn from Accidents and Natural Disasters?

Early in the morning of April 27, 2007, a gasoline tanker holding about 24,000 litres (8,000 gallons) hit a highway guard rail in San Francisco, and caught fire. Flames rose 60 metres (190 feet) into the air, melted the steel underbelly of the highway overpass/bridge, and within 25 minutes the structure collapsed onto the roadway below. Five months later in Iraq on September 28, 2007, a tanker truck detonated in Mosul underneath the al-Seha Bridge, destroying it. Over 20 people died in the blast. It is unknown if the tanker truck contained just a very large IED or if terrorists used fuel in the truck to maximize the blast effect, but it may represent the first time terrorists have used a loaded fuel truck to attack a bridge. (U)



Chronicle / Mark Costantini

¹² Over the past several years, some operators (including those with underwater subway tunnels) have "hardened" their tunnels to terrorist attack by covering them with an additional layer of concrete, large boulders and/or gravel. (U)

Canadian Implications

Although there is evidence that al-Qaida has trained operatives to destroy bridges, and has considered such operations in North America, there is no evidence indicating a specific threat to international bridges linking either Canada and the United States, or even smaller bridges. Up to 50 terrorist groups operate in Canada, according to the Canadian Security Intelligence Service; although some groups may have the capability to attack bridges and tunnels it is unknown if they have intent at this time. These groups use Canada primarily for fundraising, and would probably only consider an attack if some catalyst event occurred that dramatically changed the group's operating strategy. However, international developments can change very rapidly, and Osama bin Laden has repeatedly named Canada a target. The main threats against our bridges and tunnels in the foreseeable future will likely involve disruptive tactics by domestic and single/multi-issue groups. (U)

*** An Executive Summary of this report is available.*

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APPENDIX A

Bridges Attacked by Terrorists


Colombia	43
Pakistan	35
India	32
Nepal	27
Thailand	10
Georgia	6
Kenya	5
Turkey	4
Laos	4
Russia	4
Burma/Myanmar	4
Algeria	2
Sri Lanka	2
South Africa	2
Philippines	1
Ecuador	1
Indonesia	1
Angola	1
Ethiopia	1
Serbia/Montenegro	1
Egypt	1
Greece	1
Kosovo	1
United States	1

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