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IEDs: A Major Threat for a Struggling Society

The use of improvised explosive devices by guerrillas, drug cartels and paramilitary groups has threatened Colombian society for the past 30 years. This article examines the types of IEDs found in Colombia, and the extent and history of its IED problem. Also outlined are the Colombian government's efforts to counter IEDs, and possible solutions to the challenges ahead, such as enhanced intelligence and community security.

by Pablo Esteban Parra Gallego [PAICMA]

Colombia, located in the northern tip of South America, is the country in the Western Hemisphere most affected by improvised explosive devices. Its level of contamination is comparable to countries like war-torn Iraq and Afghanistan, where international forces deem IEDs a major threat to their plans and to the security of their personnel.



Improvised landmine, pressure activated.

ALL PHOTOS COURTESY OF EJÉRCITO DE COLOMBIA—ESCUELA DE INGENIEROS MILITARES

Types of IEDs Found in Colombia

There are few conventional landmines found in Colombia. Instead, landmines are generally improvised explosive devices used as anti-personnel landmines (that is, victim-activated). An IED¹ is a bomb fabricated in an

improvised manner that incorporates destructive, lethal, noxious, pyrotechnic or incendiary chemicals. IEDs are designed to destroy or incapacitate personnel or vehicles. In Colombia, these devices were used recently to counter the advance of the Colombian Armed Forces during their struggle to eliminate illegal groups in the country. These groups also use IEDs to protect coca crops, and to frighten the population that may collaborate with the government forces.²

Most of the IEDs produced in Colombia fall into one of the following categories:

- 1. House-borne IEDs:** Devices in any kind of building, rigged to detonate and cause collapse shortly after a military unit enters. These IEDs have become very popular to attack bomb/explosives clearance squads and specialized anti-terrorism teams.
- 2. Vehicle-borne IEDs:** Devices that use a vehicle as the package or container of the IED. They come in all shapes, colors and sizes, depending on the type of vehicles available. Donkey-drawn carts, bicycles, motorcycles and ambulances have also been used in attacks on Colombian Armed Forces. Their destructive power relies on the quantity of explosives and the amount of shrapnel generated during the detonation.
- 3. Booby traps:** IEDs contained in a variety of objects like cell phones, radios, balls, cooking pots and even corpses. They are

designed to detonate when an unsuspecting victim touches or disturbs the seemingly harmless object. They can also be activated by a remote control or a timing mechanism.

4. Anti-personnel mines: IEDs using plastic, glass or metallic containers, with different amounts of explosives, different kinds of shrapnel-generating objects, and concurrent activation systems. Designed to detonate with contact by or proximity to its victim, they are concealed in the ground or in vegetation. The most sophisticated anti-personnel mines are undetectable by metal detectors and have chemical-activation systems that can last for many years. Since a single victim can activate most roadside IEDs, they are classified as AP mines and known as victim-activated IEDs—unless they have a remote-controlled activation system.

5. Improvised land-service ammunition: The pressure Colombian Armed Forces exerted on illegal armed groups closed most of these organizations' access to weapons markets, forcing them to forge most of their land-service ammunition.



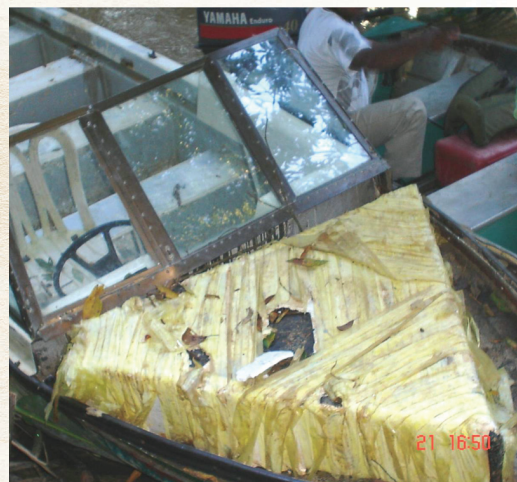
Numerous explosive devices found by the Colombian Army.

Improvised projectiles, mortars, rockets, grenades and remote-controlled roadside charges were devised; many have serious reliability and aiming problems.

Materials Used and How IEDs Work

IEDs typically consist of a main charge, a booster, a detonator and an initiation system. Depending on their objective, IEDs in Colombia

are built in different shapes and sizes, with varied materials and activation devices. IEDs can act just by the power of the detonation (blast), but most of the time they contain multiple kinds



IED found on a boat that was planned to be used in a river attack.

of shrapnel, and evidence suggests that chemical or biological toxic elements are sometimes added to enhance the damage to victims. Depending on the IED's purpose, sometimes the builder adds a shaped charge to defeat armor, but most of the time, IEDs in Colombia are designed as anti-personnel landmines. IEDs that are meant to destroy armored vehicles or buildings are shaped to focus the effect of the explosive's energy, mainly to create more damage to a highly resistant object. When an IED is built in a shape-charge manner, it is most likely anti-vehicle and not AP. Each IED found in Colombia is unique because its producer uses only locally available materials. Since they are tailored for a specific objective, IEDs are usually more difficult to prevent, detect and neutralize than regular ammunition.

IEDs built by inexperienced people or with defective materials can fail to accomplish their task. Illegal groups in Colombia, however, have developed advanced techniques, employing sophisticated elements of conventional ammunition that make IEDs more reliable and lethal, including electronic components, cell phones, remote controls, and magnetic and optical fuzes. The complexity of IEDs is only limited by the training and creativity of the designer and by the availability of specific materials.

IED builders usually rely on the container of the device for fragmentation purposes. A detonated car bomb will have a devastating effect resulting from the pieces of the car itself flying at high speed. Nevertheless, IEDs have been found with added shrapnel, like nails and bolts, to inflict worse damage. To avoid metal-detector discovery of improvised landmines, illegal groups in Colombia avoid metallic materials, instead adding glass and plastic for fragmentation effect. At first, landmine victims suffer wounds from the explosion, and later develop infections from fragments that weren't detected by X-rays.

Due to logistical constraints of illegal groups, their IEDs seldom contain military explosives. They are more often built with ammonium nitrate and fuel oil (ANFO) or other types of improvised explosives, which widely affect their destruction capability. Allegedly, several products, like coffee or paint, are added to those explosives to avoid canine detection. Most components of IEDs are relatively easy to find in rural markets. IEDs in Colombia commonly have a powerful



Gas cylinder filled with explosives, used to booby-trap a building.

main charge, causing significant damage and terrorizing the population. This scenario is particularly true with improvised landmines because these devices use containers, including bottles or boxes, that can hold more explosives than regular mine casings. AP landmines in Colombia usually hold 250 grams (0.5 pound) to 4,000 grams (nearly 9

pounds) of explosives, but some have been found to hold more than 20 kilograms (44 pounds) of explosives.

The most common type of detonator found in Colombia is the electrical detonator, although non-electrical and chemical detonators have also been found. The latter are commonly used in landmines to avoid detection by metal detectors and weathering of the batteries. Further studies are needed, but evidence indicates that battery-initiated landmines decay after just months in the open. Similarly, the hygroscopic nature of ammonium nitrate and defects in the waterproofing of IEDs generally render ANFO ineffective after being abandoned for several months.

Activation mechanisms vary widely, depending on the type of IED. Car bombs and house bombs usually have a mixture of timers, remote controls and victim-activated fuzes. The nature of the objective, the amount of resources spent and the risk inherent to the activity oblige the designers to use more sophisticated and reliable activation systems. Booby traps generally have a victim-activated system, but some are also activated by a simple remote-control device. IED landmines are all victim-activated with pressure-release, tension, or tension-release systems. Depending on their strategic purpose, these landmines can have several initiation systems, including magnetic and photosensitive fuzes.

How did Colombia Become so Affected?

After Colombia won its independence from Spain in the beginning of the 19th century, rural violence became widespread throughout the country, the result of unfair land distribution, frail property rights and obscure political interests. From the second half of the 20th century until today, leftist guerrillas—mainly the *Fuerzas Armadas Revolucionarias de Colombia* (Revolutionary Armed Forces of Colombia or FARC) and the *Ejército de Liberación Nacional* (National Liberation Army or ELN)³—have ravaged the country; and since the 1980s, drug cartels and paramilitary self-defense groups have only added to the level of violence in this already complicated setting.

Most of the drug cartels, guerrillas and paramilitary groups began using IEDs in Colombia during the 1980s and 1990s. During that time period, *Euskadi Ta Askatasuna* (known as ETA or Basque Homeland and Freedom),⁴ Irish Republican Army⁵ and other terrorist groups came to Colombia to train FARC and ELN members in the construction and use of IEDs. But over the years, FARC and ELN had already developed a state-of-the-art technique that allows them to build and utilize an ever-expanding number of IEDs to disrupt Colombian State Forces and intimidate the population.

Over the past 30 years, illegal groups acting in Colombia have used all kinds of IEDs, from the car bombs commonly used in the past by the Medellín Cartel led by Pablo Escobar, to improvised rockets, grenades, mortars, explosive-filled gas cylinders, booby traps, roadside explosives and even donkey-bombs. Victim-activated IEDs have killed or maimed over 8,000 civilian and military Colombians, both (victims of other IEDs are still being counted), and the national economy has suffered enormous losses in trade and infrastructure. The abundant use of IEDs and other indiscriminate weapons by FARC and ELN contributed to the decision by the United States, the European Union and several other countries to classify the two organizations as terrorists groups.^{6,7}

Scope of the Problem

Between 2002 and 2007, 5,200 terrorist acts involving various IEDs took place in Colombia. Though the number of bombings saw an 81-percent reduction during that period, the use of IEDs is still relevant. Despite the efforts of Colombian Armed Forces, illegal groups successfully executed 347 terrorist acts involving IEDs in 2008, and 178 during the first six months of 2009.⁸

Most of these IEDs were used against the Colombian Armed Forces by means of roadside charges, car bombs and booby-trapped buildings. Some were used against key infrastructure throughout the country, like pipe-

lines (734 bombings) and power lines (1,713 bombings),⁸ affecting the national economy. Others were used against civilian targets, or affected the civilian population due to their indiscriminate nature, similar to the attack with gas cylinders on the church of *Bojayá* (2 May 2002), where 119 civilians lost their lives, or the bombing of the social club *El Nogal* (7 February 2003), where 36 died and more than 200 were wounded.

Additionally, FARC and ELN also use victim-activated IEDs, effectively making them landmines. Between 1990 and 1 July 2009, there were 4,289 landmine accidents in Colombia, causing death or injury to 7,428 people, 34 percent of which were civilians.⁹

During this same period, 471 municipalities of Colombia (43 percent) reported at least one landmine victim to the *Programa Presidencial para la Acción Integral contra Minas Antipersonal* (Presidential Program for Mine Action or PAICMA).⁹

Due to the intensive use of improvised anti-personnel mines by FARC and ELN in rural areas of the country, landmine accidents increased almost 900 percent between 2000 and 2006. Even though the number of landmine casualties started to diminish in 2007, the current number of victims killed or injured by these devices in Colombia is still one of the highest in the world. The use of landmines in Colombia by FARC and ELN poses a huge threat to people, hinders social and economic development, impedes the use of natural resources and causes displacement of communities.

National Measures Against IEDs

The social and economic losses due to the extended use of IEDs by illegal groups in Colombia are so large they are nearly incomprehensible. Colombia's legislation contemplates strong penalties against IED producers, but the economic incentives from the drug business run by the illegal armed groups are too high, spurring their use against the Colombian Forces.

Colombian Armed Forces have increased their training, along with research-and-

development efforts on new detection, neutralization and destruction techniques. Special teams have been formed and trained in the techniques to counter IEDs, but the race between new production technologies and countermeasures is never-ending.

The National Army of Colombia alone has more than 1,200 rapid-response teams trained for breaching operations during combat. This capacity is often used to counter IEDs and mitigate the risk for affected communities. Seven other teams have received training in IED neutralization and deal with more complex threats in urban areas. The Colombian National Police and Colombia's security agencies have also developed similar teams, providing the country with a substantial counter-IED capacity.

Better security conditions in several parts of the country facilitate the return of internally displaced people who were forced to leave their homes by the illegal groups when the groups emplaced landmines. To support these communities calling for a definitive solution to their problem with IEDs, special humanitarian-demining teams from the National Army have been trained and equipped. Using International Mine Action Standards, mine clearance is taking place, making many areas safe again. In coordination with the national mine-action authority, the government is considering allowing experienced landmine-clearance organizations to implement clearance programs in Colombia.

As a result of these efforts in 2008, the following were detected and destroyed:

- 17,353 IEDs
- Six car bombs
- 1,431 gas cylinders filled with explosives
- 108,197 kilograms (238,534 pounds) of explosives
- 97,174 detonators
- 105,306 meters (65 miles) of detonating cord
- 22,736 meters (14 miles) of safety fuze.¹⁰

During this same year, the humanitarian-demining teams cleared 174,752 square meters (43 acres) and destroyed 447 landmines and 21 pieces of unexploded ordnance.

More Work to be Done

More and better intelligence must supplement the national capacity to counter IEDs. Information is the key issue in the fight against terrorist attacks and minefields. It is as important for the prevention of the use of new IEDs as it is for finding, neutralizing and destroying the ones already in the ground. The government is already working on this issue, with the cooperation and technical assistance of several allied countries.

An international advocacy campaign against the use of indiscriminate weapons by illegal armed groups in Colombia will soon be implemented. Regardless of its size, technology and budget, no national counter-IED capacity is enough to stop the losses caused by these weapons. Iraq and Afghanistan are clear examples of this statement. Perhaps the Second Review Conference of the Ottawa Convention, to be held 30 November–4 December 2009 in Cartagena, Colombia, will send a clear message to FARC and ELN to stop using landmines, and to reduce the use of IEDs against the people of Colombia. ↓

See Endnotes, Page 78



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