Improvised Grenades And Their Use By Mexican Cartels
Improvised Grenades and Their Use by Mexican Cartels

Over the last few years, it has become more commonplace to see military-type weaponry such as grenades and assault rifles utilized by Mexican drug trafficking organizations (DTOs). Increasingly, many of the reported hand grenade seizures in United States are illegal, improvised grenades destined for Mexico and the DTOs. These devices have become a weapon of choice for Mexican DTOs because they are cheap, the components are relatively easy to obtain and manufacture, are easily concealable, and can kill or injure large numbers of people indiscriminately. Reports have indicated that grenade attacks originated mostly in southern Mexico around the beginning of President Felipe Calderon’s presidency in 2006, and have steadily spread northward as the conflicts between rival DTO cartels, and Mexican government’s enforcement efforts have intensified in the northern Mexican Border States.
**M67 grenade** - Steel body

- Killing radius: 16 feet
- Casualty-producing radius: 50 feet
- Still in use by the U.S. military

**M69 grenade** - Steel body

- Unfuzed and inert
- Used by US Military to resemble and simulate the functioning of service grenade

**MK II grenade** (commonly referred as pineapple grenade) - Cast Iron body

- Killing radius: 16 feet
- Casualty-producing radius: 50 feet
- No longer used by US Military
Hand grenades are composed of three main components:

1. **BODY.** This contains the filler and in some grenades, provides fragmentation. Improvised grenade hulls can have either a soldered or patched bottom, as all inert empty hulls are supposed to be drilled out at the bottom.

2. **FILLER.** The filler is the chemical or explosive substance in the grenade body which gives the grenade its characteristics and determines its use. The explosive powders inside an improvised grenade are usually a low explosive, primarily black powder. The improvised grenades can use commercial flash bang fuses, pyrotechnic fireworks fuse, shotgun primers, matchheads, etc. to initiate a detonation.

3. **FUSE ASSEMBLY.** This is the heart of the hand grenade and causes the grenade to function by means of a chain reaction of pyrotechnic, mechanical, or electrical actions. The most important part of the hand grenade is the fuse. The fuse must be 100% dependable.
How a hand grenade is designed to function:

1. When safety pin is withdrawn, the safety lever is free to release from the grenade body.
2. When safety lever is released, striker rotates on axis to strike primer.
3. When primer is struck, flash of heat ignites delay element.
4. Delay element burns down to the detonator or igniter.
5. Detonator or igniter sets off burster or main charge (filler).

The average time delay of a fragmentation grenade fuse (training or live) is 4-5 seconds. Time delays on remanufactured grenades will vary or may have no delay at all. This is true of remanufactured grenades utilizing flash bang fuzes. Grenades with less than one second time delay (taken from smoke grenades, etc) are primarily used to booby trap contraband.

The fragmentation grenade is designed to spew shrapnel in all directions. To add a more damaging impact, DTOs have added BB pellets or buckshot to the explosive in the grenade.

Recovered McAllen, TX

Mexican grenade attack utilizing a short-delayed flash bang fuze.

Flash bang fuze stock photo

Black powder found inside a improvised MKII pineapple grenade
Improvised Grenades and Their Use by Mexican Cartels

The most common modified grenades seized are the M69 practice grenades, M67/M33 grenades, the MKII pineapple-type grenade and novelty grenades. Novelty grenades (spent training grenades) can be cheaply bought at army-navy surplus stores, gun shows, and online. M69 military training grenades are identifiable by blue coloring, generally on the safety lever (“spoon”), but can be found anywhere on the device. Inert military practice grenades can be remanufactured to be used as a weapon. Caution in handling must be taken after they are remanufactured because the blue markings no longer have any significance, particularly if the officer notes that the bottom has been welded or sealed shut.
Improvised Grenades and Their Use by Mexican Cartels

There are numerous books and websites that describe in detail how a hand grenade functions, how to rebuild the fuze assembly and igniter, as well as chemical formulas needed to make the time delay fuse, blasting cap, and explosive filler. A person with a moderate amount of mechanical/chemical expertise can remanufacture an improvised grenade.

Examples courtesy of ATF
According to ATF, improvised hand grenades can sell from anywhere between $100-$500 per grenade along the Texas-Mexico border. In contrast, military grade grenades from Central American countries can be purchased for as little as $10 per grenade. The major DTOs make grenade purchases through various sources. Reports indicate that Los Zetas historically try to seek grenades from sources in Guatemala, due to their control of many areas in that country. The Gulf Cartel has historically attempted to acquire their grenades from Mexican military sources, whereas the Sinaloa Cartel has sought to acquire improvised grenades. Regarding military grade-grenades, many countries, including the United States and the Soviet Union, have historically supplied weapons to Central America to support government forces and various guerrilla groups. When the insurrections in Central America ended, weapons stockpiles slipped into the black market. According to investigations by the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives and their Mexican counterparts, the majority of military grenades have been traced to El Salvador, Guatemala, Honduras, Belize, and Nicaragua. ATF also found that almost 90% of the grenades traced in Mexico are more than 20 years old.

One of the most common hand grenades found in Mexico is the M67 fragmentation grenade.

M69 practice grenade
Indicated by blue safety lever, sealed and improvised with black powder.
On 2 APR 2009, a Police Officer with the 81st District Attorney’s Office Narcotics Unit stopped a vehicle southbound on I-35 in Pearsall, TX.

Following a consent to search the vehicle, the Officer discovered $123,000 USD and 10 improvised hand grenades wrapped in shrink wrap, secreted in a hidden void in the vehicle’s dashboard.

The grenades had been improvised with blue colored M228 practice grenade fuzes and had plugs welded at the bottom of the hulls.

1 JUL 2010: Unexploded homemade grenade constructed of steel pipe fittings and civilian grenade fuse (likely CTS brand) recovered from a gun battle between cartel members and Mexican military forces in Tubutama, Mexico.
On 15 JUNE 2010, USBP seized 114 MKII grenades and M69 fragmentation grenades in addition to various types of ammunition at the San Luis Point of Entry headed southbound into Mexico.

Mexican cartels continually resupply these weapons to be used against their rivals as well as law enforcement and the Mexican military.
On 16 DEC 2010, Zapata Co. SO initiated a traffic stop on a Latin King member driving a vehicle traveling northbound on US-83/FM-2687, near Chihuahua, TX. The subject was transporting a quantity of assault rifles and 30 modified MKII grenades from McAllen to Del Rio, TX. The hole at the base of the grenade was welded shut and contained gunpowder (black powder has higher yield) and BB pellets for additional shrapnel.
ATF has been investigating and collecting information on explosives and military grenades recoveries in Mexico. ATF has an extensive database on the types of grenades and explosive materials being used by Mexican DTOs. ATF also documents instances of grenades that have been recovered in the United States that have been linked to Mexico. Improvised grenades continue to be sought by DTOs. ATF is exploiting this by the use of DNA trace evidence technologies. Through DNA tracing, it is hoped that a link to improvised grenades between Mexico DTOs and the US manufacturers/suppliers will be able to be made. The collection of this information will benefit in linking grenades recovered in both the US and Mexico to the same builder, and identify common components such as grenade fuzes. This information will allow the possible tracking of shipping routes and identification of the source of the materials.

Photos courtesy of El Paso PD Bomb Squad
Anyone with comments or questions regarding this bulletin, or with additional information regarding hand grenades, should please contact the Border Security Operations Center at 512-424-7561 or by e-mail at TBSOC@txdps.state.tx.us.