



ACTIVE SHOOTER IN THE PRESSURIZED VESSEL HUMAN OCCUPANCY ENVIRONMENT

ACTIONS – CONSIDERATIONS – RECOMMENDATIONS

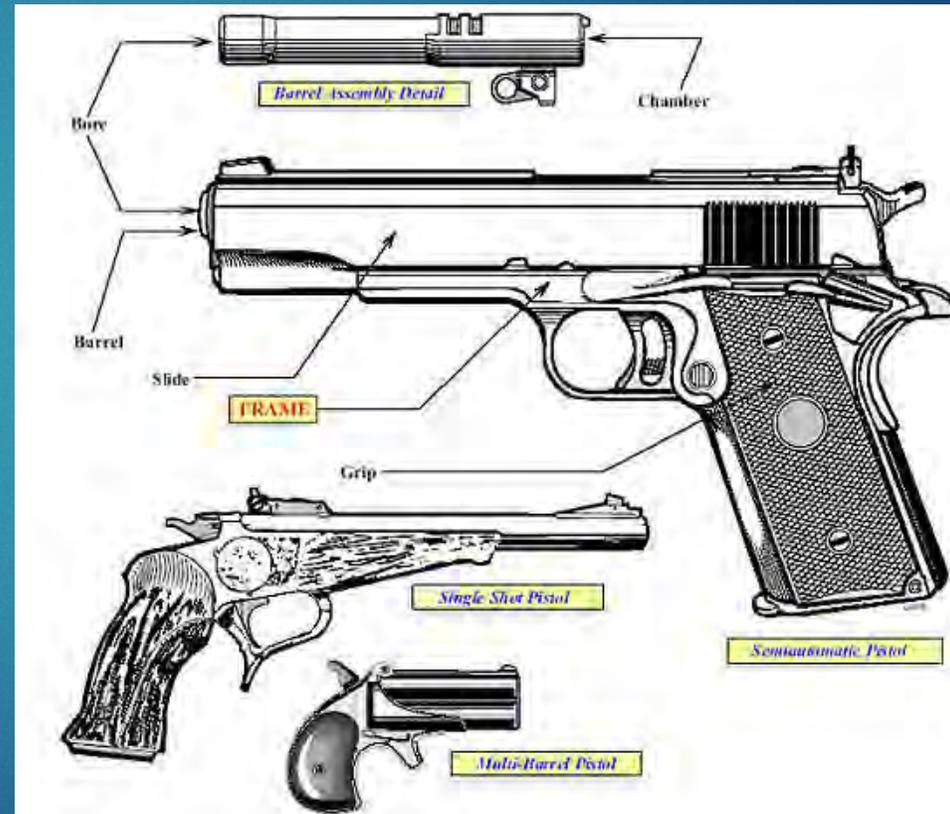
JULIO R GARCIA RN, WCC, ACHRN

OUTLINE

- ▶ Overview of firearms
 - ▶ HANDGUNS
 - ▶ LONG GUNS
 - ▶ SHOTGUNS
- ▶ Caliber versus Platform
- ▶ FBI statistics
- ▶ STOP THE BLEED

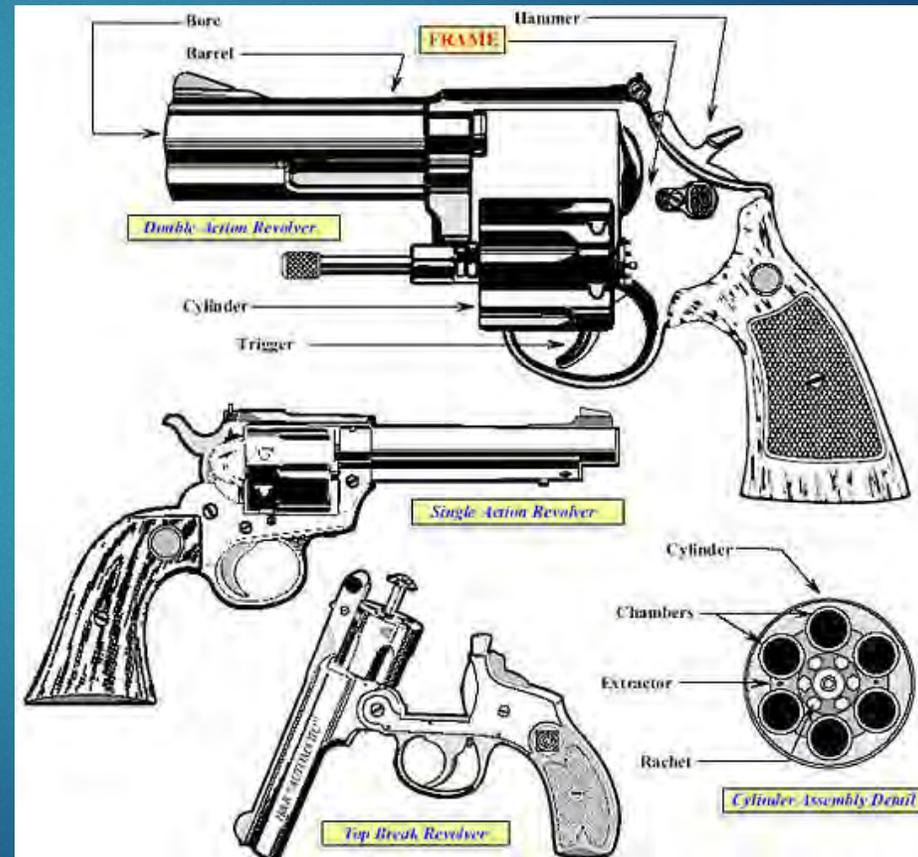
COMMON TERMINOLOGY

- ▶ HANDGUN
- ▶ [18 U.S.C., § 921\(A\)\(29\)](#) and [27 CFR § 478.11](#)
- ▶ The term “**Pistol**” means a weapon originally designed, made, and intended to fire a projectile (bullet) from one or more barrels when held in one hand, and having:
 - ▶ a chamber(s) as an integral part(s) of, or permanently aligned with, the bore(s);
 - ▶ and a short stock designed to be gripped by one hand at an angle to and extending below the line of the bore(s).
 - ▶ CAN BE SINGLE BARREL OR DOUBLE BARREL
 - ▶ CAN ACCEPT MAGAZINES (CLIPS)



COMMON TERMINOLOGY

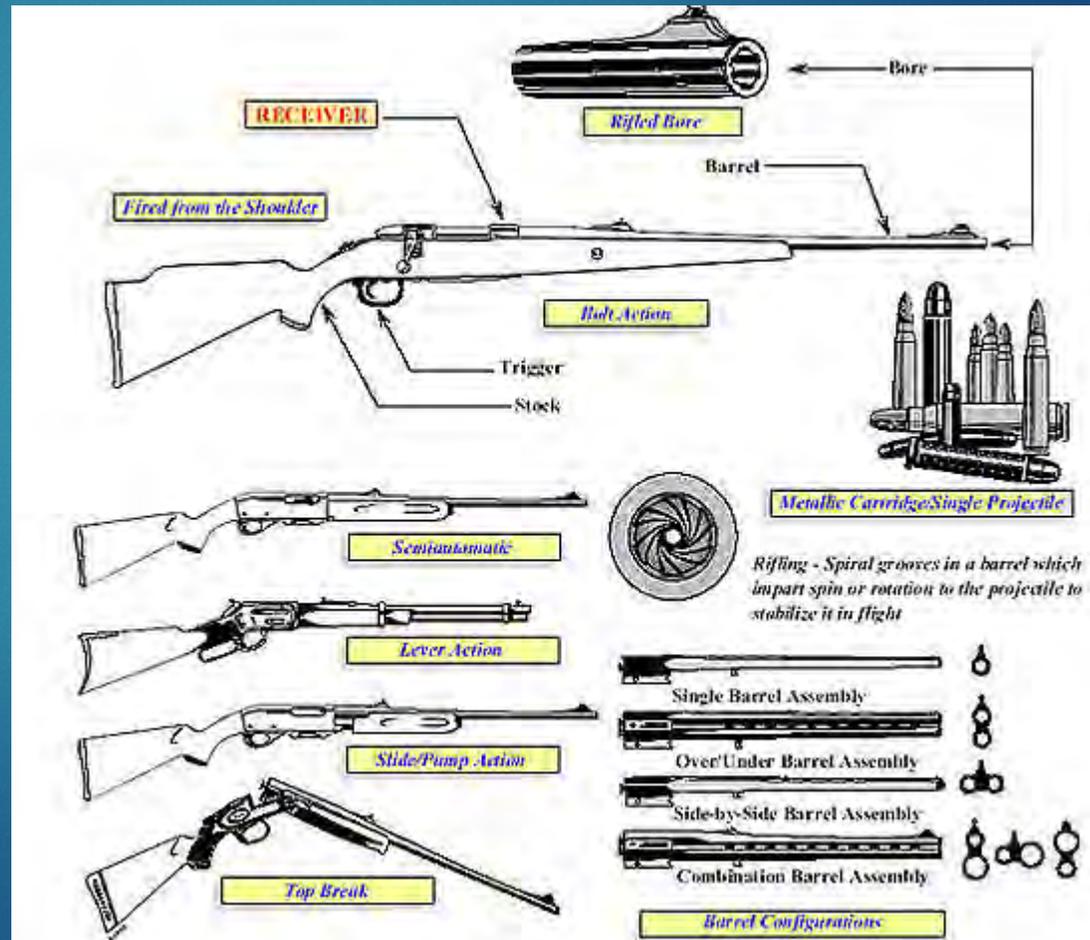
- ▶ [18 U.S.C., § 921\(A\)\(29\)](#) and [27 CFR § 478.11](#)
- ▶ The term “**Revolver**” means a projectile weapon of the pistol type, having a breechloading chambered cylinder so arranged that the cocking of the hammer or movement of the trigger rotates it and brings the next cartridge in line with the barrel for firing.



COMMON TERMINOLOGY

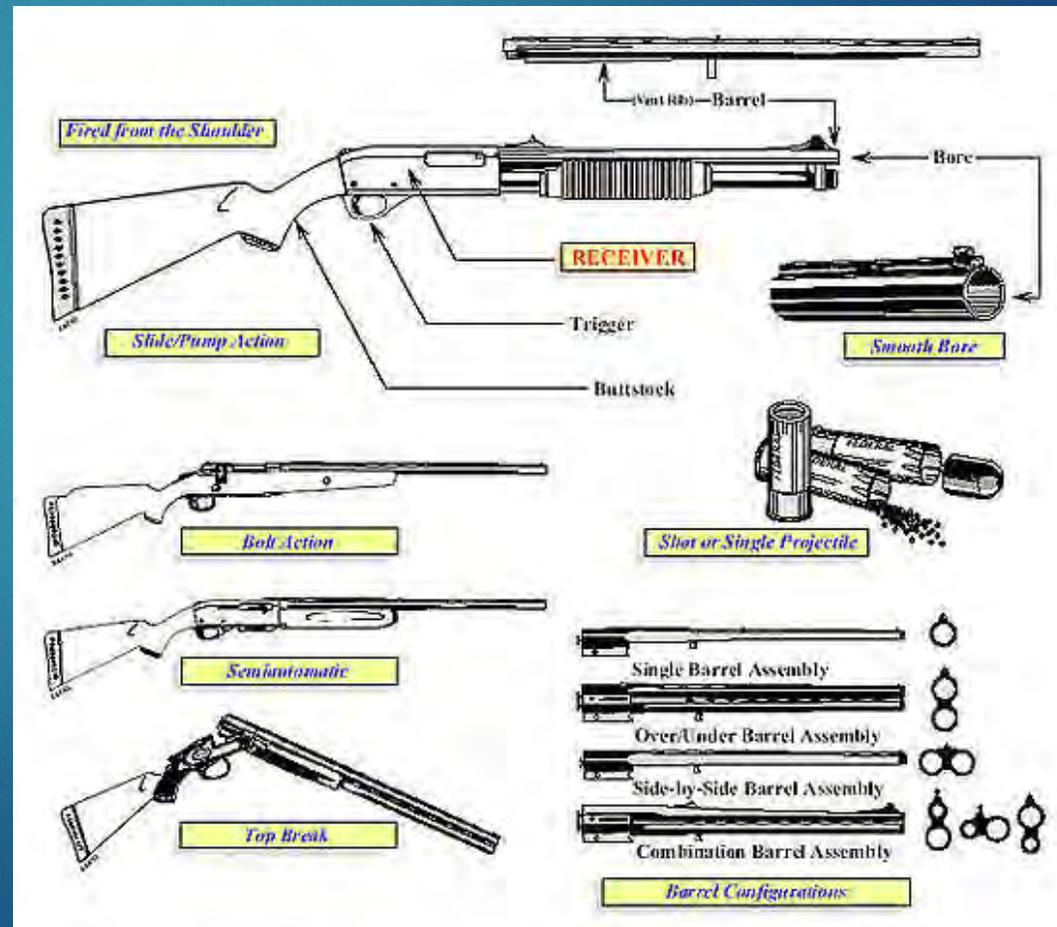
[18 U.S.C., § 921\(A\)\(7\)](#) and [27 CFR § 478.11](#)

The term “**Rifle**” means a weapon designed or redesigned, made or remade, and intended to be fired from the shoulder and designed or redesigned and made or remade to use the energy of the explosive in a fixed metallic cartridge to fire only a single projectile through a rifled bore for each single pull of the trigger.



COMMON TERMINOLOGY

- ▶ [18 U.S.C., § 921\(A\)\(5\)](#) and [27 CFR § 478.11](#)
- ▶ The term “**Shotgun**” means a weapon designed or redesigned, made or remade, and intended to be fired from the shoulder, and designed or redesigned and made or remade to use the energy of the explosive in a fixed shotgun shell to fire through a smooth bore either a number of ball shot or a single projectile for each single pull of the trigger.



COMMON TERMINOLOGY

- ▶ [26 U.S.C. § 5845\(b\)](#)
- ▶ For the purposes of the National Firearms Act the term Machinegun means:
- ▶ *Any weapon which shoots, is designed to shoot, or can be readily restored to shoot, automatically more than one shot without manual reloading, by a single function of the trigger*
- ▶ *The frame or receiver of any such weapon*
- ▶ *Any part designed and intended solely and exclusively or combination of parts designed and intended for use in converting a weapon into a machinegun, or*
- ▶ *Any combination of parts from which a machinegun can be assembled if such parts are in the possession or under the control of a person.*



IT CAN BE COMPLICATED

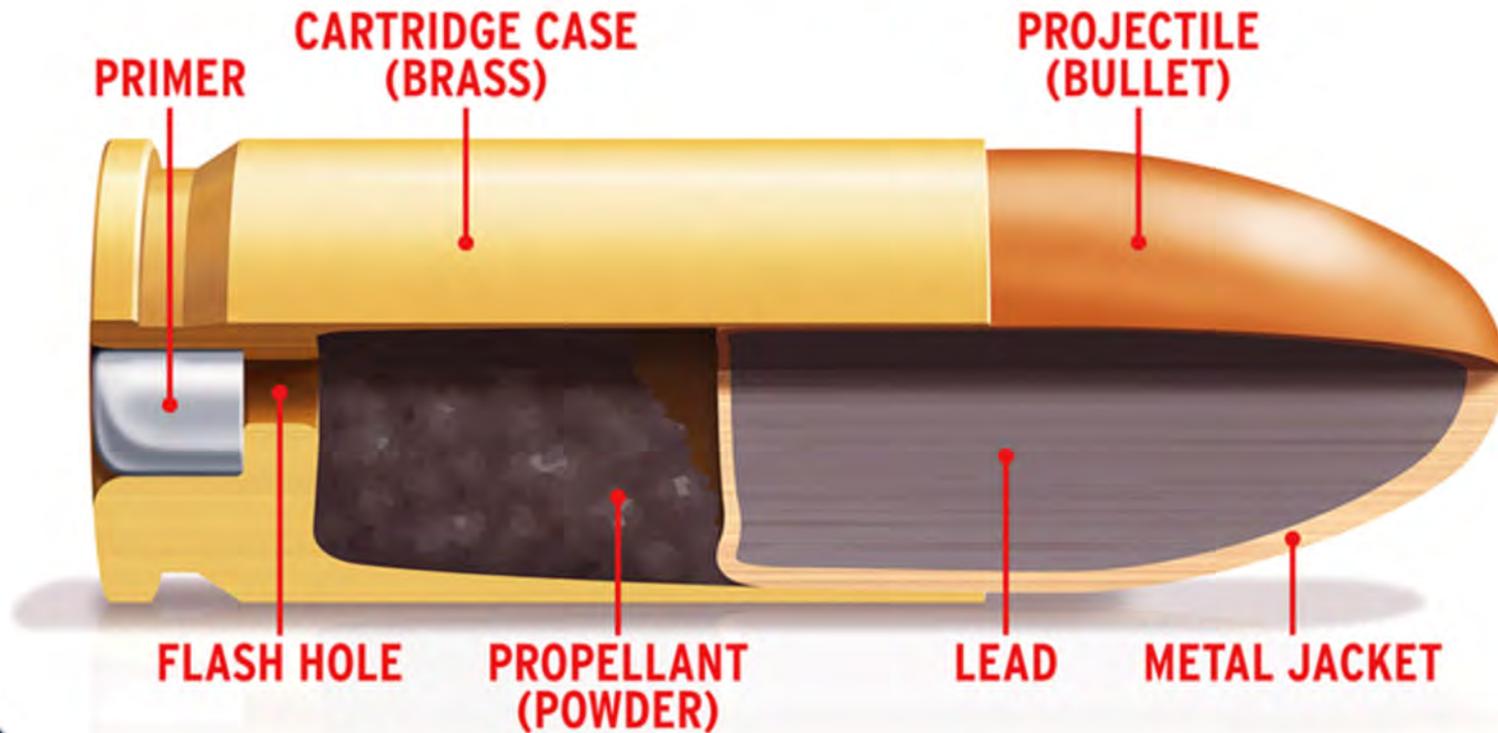


CALIBER VERSUS PLATFORM

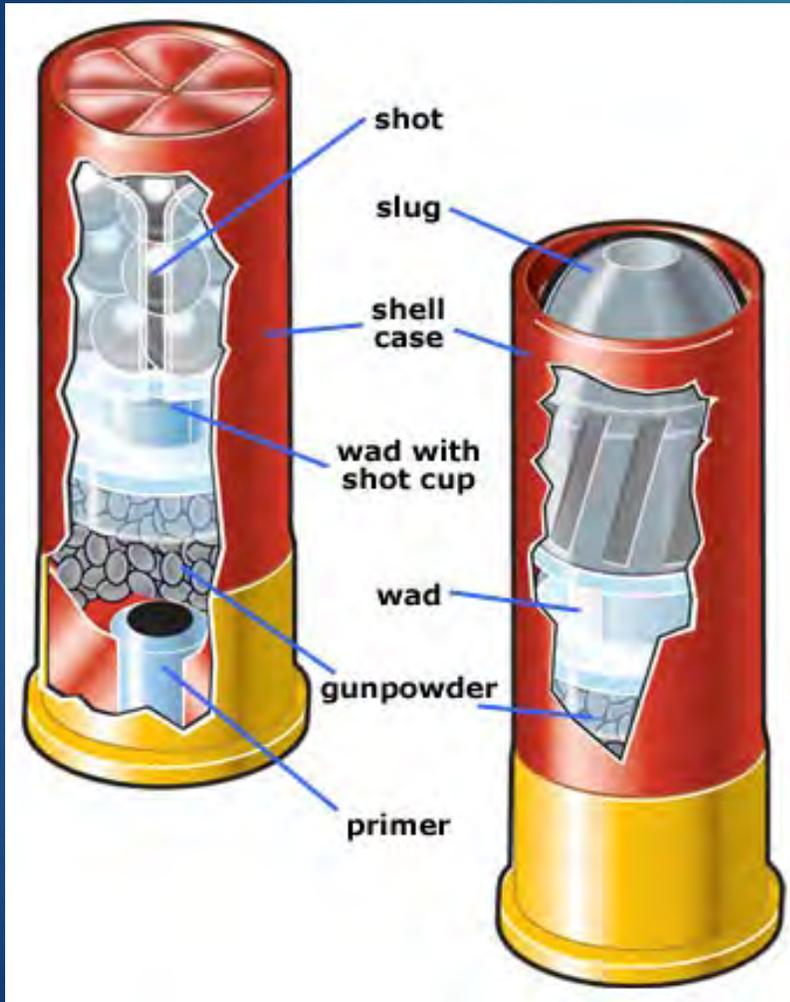
- ▶ **Caliber**: In Firearms, the diameter of the bore measured from land to land, usually expressed in hundredths of an inch (. 22 cal) or in millimeters (9mm). In ammunition, a naming system that indicates cartridge dimensions as well as bore diameters, and can be the same as the Firearm caliber.
- ▶ A **weapons platform** is generally any structure, vehicle or mechanism on which a weapon can be installed (via various mounting mechanisms) for optimal stability and performance.

ANATOMY OF A CARTRIDGE

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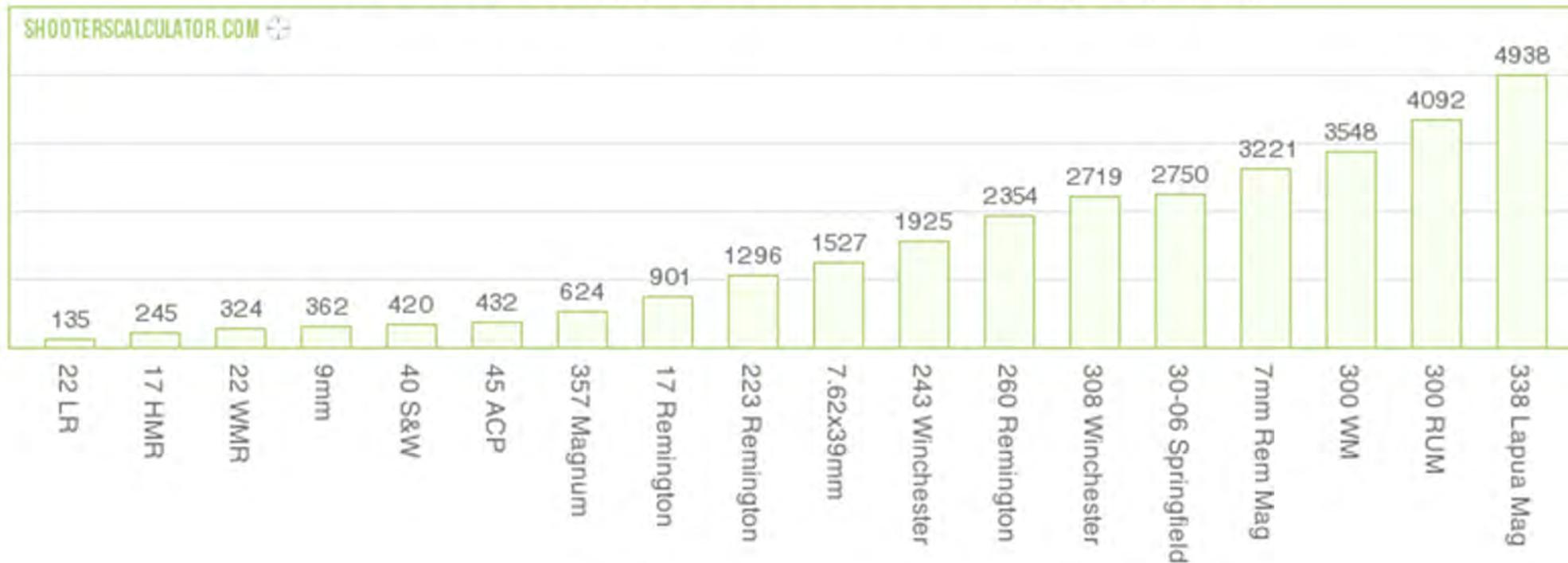


ANATOMY OF A CARTRIDGE



Muzzle energy is the energy of a bullet right when it leaves the firearms barrel. Muzzle Energy is useful in comparing cartridges, calculating recoil, and stopping power.

Muzzle Energy of Various Cartridges (ft.lbf)





2019 CRIME in the UNITED STATES

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Expanded Homicide Data Table 8

[Download Excel](#)

Murder Victims

by Weapon, 2015–2019

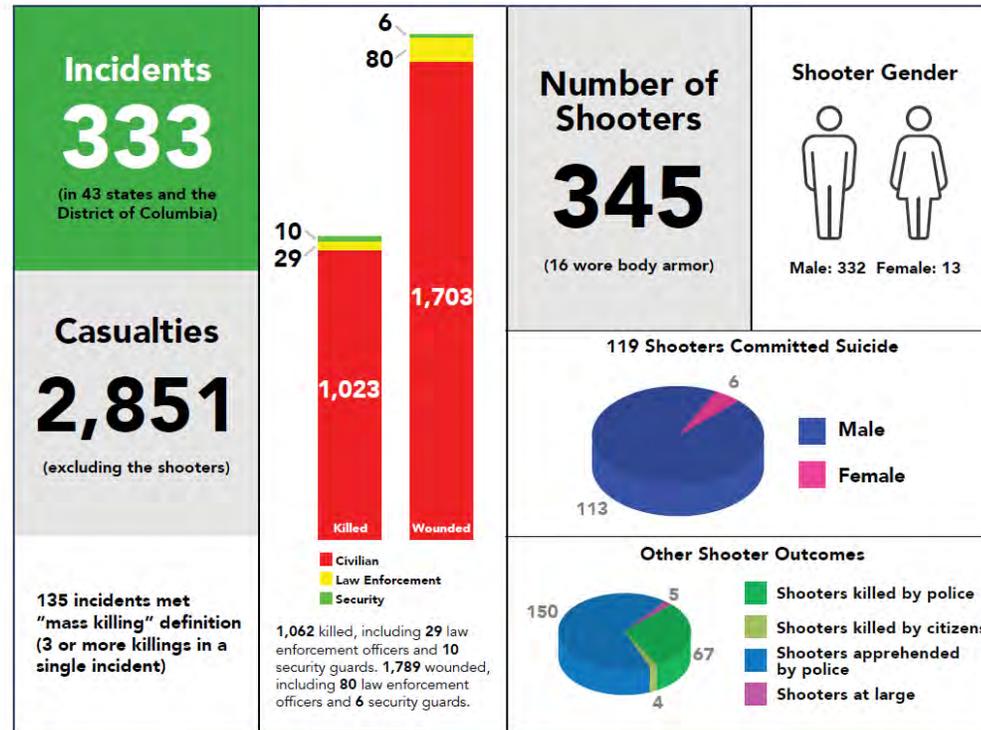
Weapons	2015	2016	2017	2018	2019
Total	13,847	15,355	15,206	14,446	13,927
Total firearms:	9,143	10,398	11,014	10,445	10,258
Handguns	6,194	6,778	7,052	6,683	6,368
Rifles	215	300	389	305	364
Shotguns	248	247	263	237	200
Other guns	152	172	178	164	45
Firearms, type not stated	2,334	2,901	3,132	3,056	3,281
Knives or cutting instruments	1,533	1,562	1,608	1,542	1,476
Blunt objects (clubs, hammers, etc.)	438	466	474	455	397
Personal weapons (hands, fists, feet, etc.) [†]	651	668	715	712	600
Poison	8	12	15	6	16
Explosives	1	1	0	4	3
Fire	63	78	93	76	81
Narcotics	70	119	112	102	93
Drowning	12	9	8	9	7
Strangulation	96	97	90	75	64
Asphyxiation	105	93	112	92	92
Other weapons or weapons not stated	1,727	1,852	965	928	840

20 YEAR ACTIVE SHOOTER SUMMARY

ACTIVE SHOOTER INCIDENTS



20-Year Active Shooter Summary



Incidents: 333 (in 43 states and the District of Columbia). Total casualties: 2,851 (excluding the shooters). 135 incidents met "mass killing" definition (3 or more killings in a single incident). Killed: 1,062 (including 1,023 civilians, 29 law enforcement officers and 10 security guards). Wounded: 1,789 (including 1,703 civilians, 80 law enforcement officers, and 6 security guards). Number of shooters: 345 (16 wore body armor). Shooter gender: 332 male, 13 female. 119 shooters committed suicide (113 male, 6 female). Other shooter outcomes: 67 killed by police, 4 killed by citizens, 150 apprehended by police, 4 at large.

SHOOTER LOCATIONS

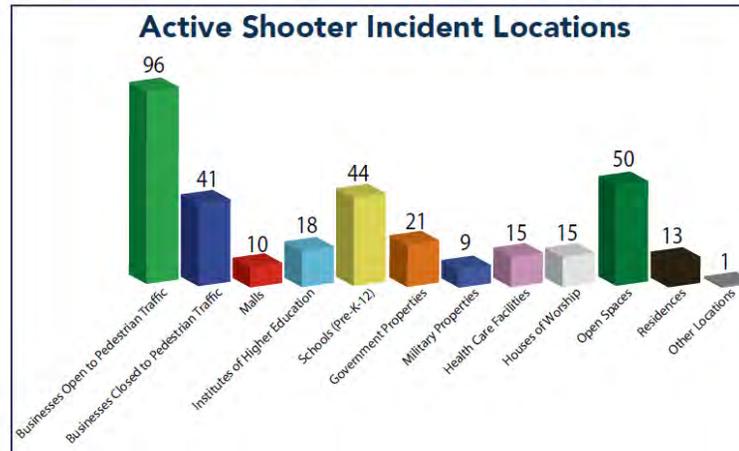
ACTIVE SHOOTER INCIDENTS



Total Active Shooter Incidents and Locations

Quick Look:

The 333 active shooter incidents are categorized into 12 different location types.¹



Active Shooter Incident Locations: Businesses Open to Pedestrian Traffic (96); Businesses Closed to Pedestrian Traffic (41); Malls (10); Institutes of Higher Education (18); Pre-K-12 Schools (44); Government Properties (21); Military Properties (9); Health Care Facilities (15); Houses of Worship (15); Open Spaces (50); Residences (13); Other Locations (1)²

Key Findings:

Businesses open to pedestrian traffic had the highest number of incidents with 96, followed by open spaces with 50, and schools (Pre-K-12) with 44.

Ten incidents involved multiple shooters, and half of those incidents occurred in businesses open to pedestrian traffic. The other five incidents involving multiple shooters occurred in four different location types: a residence, institutes of higher education, a school (Pre-K-12), and open spaces (neighborhood streets).

In all, 44 of the 333 incidents involved shootings at two or more locations (incidents were categorized by the location where the public was most at risk).

HEALTHCARE FACILITIES

ACTIVE SHOOTER INCIDENTS



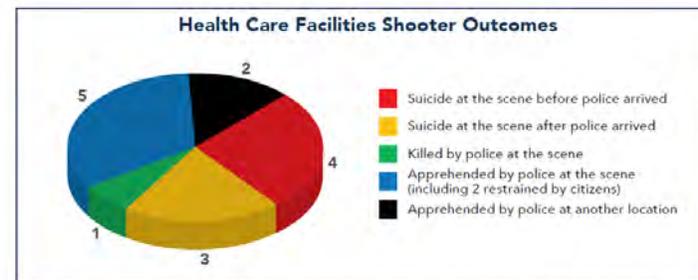
Health Care Facilities

Quick Look:

Fifteen incidents occurred in public or private facilities that provide primary or secondary health services, including hospitals, clinics, urgent care, hospice care, and retirement facilities.



Health Care Facilities Locations: Hospital/Medical Center (6); Veterans Medical Center (2); Behavioral Health (2); Assisted Living/Nursing Home (2); Group Home (1); Planned Parenthood (1); Substance Abuse Recovery Center (1)



Health Care Facilities Shooter Outcomes: Suicide at the scene before police arrived (4); Suicide at the scene after police arrived (3); Killed by police at the scene (1); Apprehended by police at the scene (including 2 restrained by citizens) (5); Apprehended by police at another location (2)



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Version 2



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**The National
Association of
Emergency Medical
Technicians**



**The Committee
on Tactical
Combat
Casualty Care**

Hemorrhagic Shock

- ▶ The American College of Surgeons Advanced Trauma Life Support (ATLS) hemorrhagic shock classification links the amount of blood loss to expected physiologic responses in a healthy 70 kg patient.
- ▶ Class 1: Volume loss up to 15% of total blood volume, approximately 750 mL. Heart rate is minimally elevated or normal. Typically, there is no change in blood pressure, pulse pressure, or respiratory rate.
- ▶ Class 2: Volume loss from 15% to 30% of total blood volume, from 750 mL to 1500 mL. Heart rate and respiratory rate become elevated (100 BPM to 120 BPM, 20 RR to 24 RR). Pulse pressure begins to narrow, but systolic blood pressure may be unchanged to slightly decreased.
- ▶ Class 3: Volume loss from 30% to 40% of total blood volume, from 1500 mL to 2000 mL. A significant drop in blood pressure and changes in mental status occurs. Heart rate and respiratory rate are significantly elevated (more than 120 BPM). Urine output declines. Capillary refill is delayed.
- ▶ Class 4: Volume loss over 40% of total blood volume. Hypotension with narrow pulse pressure (less than 25 mmHg). Tachycardia becomes more pronounced (more than 120 BPM), and mental status becomes increasingly altered. Urine output is minimal or absent. Capillary refill is delayed.

Safety of Tourniquet Use

Kragh - Journal of Trauma 2008



- **Combat Support Hospital in Baghdad**
- **232 patients with tourniquets on 309 limbs**
- **CAT was best field tourniquet**
- **No amputations caused by tourniquet use**
- **Approximately 3% transient nerve palsies**

Impact of Tourniquet Use

Kragh - Annals of Surgery 2009



- Ibn Sina Hospital, Baghdad, 2006
- Tourniquets are saving lives on the battlefield
- **Better survival when tourniquets were applied BEFORE casualties went into shock**
- 31 lives saved in this study by applying tourniquets prehospital rather than in the ED
- **Estimated 1000-2000 lives saved in war to date by tourniquets (data provided to Army Surgeon General)**

ABCs of Bleeding Control



CoTCCC Recommended STB Tourniquets

► Recommended Non-Pneumatic Limb Tourniquets

- Combat Application Tourniquet Gen 6 (CAT-6)
- Combat Application Tourniquet Gen 7 (CAT-7)
- Ratcheting Medical Tourniquet (RMT) Tactical
- SAM Extremity Tourniquet (SAM-XT)
- SOF Tactical Tourniquet–Wide (SOFTT-Wide)
- Tactical Mechanical Tourniquet (TMT)
- TX2 Tourniquet (TX2)
- TX3 Tourniquet (TX3)



For more information:

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The only thing more tragic than a death...
is a death that **could have been**
prevented.