Guide to Covering Riot Control in the United States

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What is the History of Riot Control in the United States?

Riot control largely arose out of the repression of rebellious peasants and slaves. Early forms of policing in the U.S. included slave patrols that searched residences, broke up gatherings and monitored roads. A more structured practice for dealing with urban minority unrest after the Civil War was imported from white European colonial experience. In 1829, U.S. cities began to adopt parts of the British policing model, creating organized departments with full-time officers.

These modernized police officers enforced public order and is sometimes seen as a nascent form of broken-windows policing that created tensions between officers and community members.

Early police forces were also used to protect economic interests in the 1920s and 1930s, breaking up labor organizing and strike activity among the working classes**.**

World War I saw a wide-scale transfer of technologies from the military to local law enforcement, as early methods for crowd control were adapted from military practices. During this period tear gas became marketed as a fast, affordable and reliable tool for law enforcement. In advertisements, early manufacturers said it could demoralise people, destroy the 'mob spirit', cause physical pain and make protesters look silly.

After civil unrest — and its repression — in the 1950s and 1960s, riot control became an industry of its own.

Early riot control tactics included various police formations — the interlocked arm formation that uses officers' batons to cordon off areas, the show of force demonstration that works psychologically and physically by making a surprise advance on a crowd, and the boxing in of public areas by occupying and sealing off intersections.

General Timeline
1920s – introduction of tear gas
1960s – increasing uses of aerosol tear gas sprays (ie Mace)
1970s – introduction of impact munitions
1990s – widespread deployment of pepper spray
2000s – rise in use of sound and light devices for riot control (ie flashbang grenades), as well as rollout of PepperBall guns and innovation of existing riot control technologies

Who are the major riot control manufacturers and suppliers in the United States?

Riot Control products being used in the US at present come from the following companies (among others):

- **PW Defence** – UK's leading exporter, originated as pyrotechnics company, long time exporter of tear gases and impact munitions.
  - https://www.pwdefence.com/
  - https://www.pwdefence.com/products/security/

- **PepperBall** – A US-based company specialising in the manufacture of small ball pellets that contain various chemical irritant materials to cause trauma, as well as dye and marking agents to tag people. Pellets are designed for rapid fire with more contact impact than larger 'rubber bullets' and related impact munitions.
  - https://www.pepperball.com/#

- **Combined Systems Inc** – Largest US exporter, CSI is one of the largest suppliers to the Department of Homeland Security. CSI is part of the Carlyle Group's portfolio, a private investment firm.
  - https://www.combinedsystems.com/
  - https://www.bbc.co.uk/news/world-us-canada-46432161
  - https://www.warresisters.org/combined-systems-inc-csi

- **Defense Tech** - Defense Tech ammunitions, part of Warren Kander's Safariland Group. Kanders is a Forbes rich-list investor. In 2019 he was forced to resign from his role on the board of the Whitney Museum of Art following major protests.
  - https://www.safariland.com/brands/defense-technology/?sub=.7%&mod=article_inline

- **Mace –** First manufactured and sold by General Ordinance Equipment Corporation (GOEC). This liquid spray first used a .9 percent solution of CN when it was introduced in 1965, then switched to CS in 1968. Both formulas caused severe pain. Mace was not the first police spray—versions appeared as early as the 1920s—but it was the first to gain popularity across police forces.Mace continues to be widely used by police and law enforcement and is sold to the public in different formulas.
  - https://www.mace.com/pages/why-mace-brand

- **NonLethal Technologies** – Originally formed in 1994 as an R&D firm by former employees of Federal Laboratories, NonLethal Technologies became a full manufacturing operation in 2002. NonLethal

Technologies provides a full line of less-lethal force and tactical munitions for Military, Corrections and Law Enforcement.

- http://www.nonlethaltechnologies.com/
- https://www.bloomberg.com/profile/company/0005508D:US
- https://www.warresisters.org/nonlethal-technologies

What is Tear Gas?

- The substance we generally refer to as tear gas is actually not a gas at all. Rather, the chemical compounds referred to as "tear gas" are solid particles of fine powder or tiny droplets of liquid released directly or as a smoke, a fog, or a spray. They include:

    - **Pepper Spray** - In 1973, the first aerosol "pepper sprays" containing oleoresin capsicum (OC) were dispatched to FBI personnel and US postal workers to temporarily incapacitate animals in the case of attack. During the 1980s, the FBI worked with scientists and manufacturers to create a weapons-grade spray. By the late 1980s, law enforcement officers around the country had pepper spray.

    - **CS** - (2-chlorobenzylidene malonitrile) – the most commonly used type of tear gas today. CS was invented in 1928 by chemists Ben Corson and Roger Stoughton. However, this early CS formula was not adopted right away, with CN and CR formulas remaining most common until the 1960s.

    - **CN** - (chloroacetophenone)- Prior to the expansion of CS, CN was the most popular type of tear gas.

    - **CR** - (dibenzoxazepine) – CR was an early form of tear gas but it is now rarely used as it is seen as more volatile and dangerous than CS.

    - **Mace** - Today Mace is a brand name for a company that produces different types of sprays, including OC, CS and CN as well as combinations of them.

- Once released into the atmosphere tear gas seeps into everything it touches. This dispersal, this distribution of mg/m3 of poison is what makes tear gas take over a space.

- Tear gases operate as moisture that sticks to and covers everything it touches—the surfaces of skin, the soil, and surrounding architectures.

- Tear gases' toxicity level is determined from a ratio of toxins released per metre squared. This means that only a certain number of canisters are meant to be set off in any given space—the smaller the space and the more gas is released, the more toxic it becomes.

What are the general harms of tear gas?

- Tear gases are designed to attack the senses simultaneously, intentionally producing both physical and psychological trauma.

- In medical terms, tear gas operates as an irritant on multiple sites of the body at once, primarily affecting mucous membranes and respiratory system.

- Tear gas can cause:
    - excessive tearing
    - burning
    - blurred vision
    - redness
    - runny nose
    - burning of the nostrils and mouth
    - difficulty swallowing
    - drooling
    - chest tightness
    - coughing
    - a choking sensation
    - wheezing
    - shortness of breath
    - skin burns
    - rashes
    - nausea and vomiting

- Tear gas has also been linked to miscarriages, long-term tissue and respiratory damage.

- A major cause of injuries from tear gas is when projectiles carrying the gas strikes a person, particularly if they are hit in the head.

    - There are multiple reports of lost eyes, cranial damage and deaths due to impact hits from tear gas canisters.

- Tear gas can cause harm through its pyrotechnic devices or flammable components. For the tear gas chemical compound to heat and disperse, other substances must be present.

    - In some cases, fires start from the explosion that sets off the canister or grenade. Often the kinds of pyrotechnics that make fireworks go off are used to fire off tear gas canisters.

    - This sometimes causes lethal fires in homes, vehicles and agricultural fields.

- In other cases, a substance like alcohol mixed in with the tear gas compound might be flammable, or the propellant like butane that is in a spray might be flammable.

What is an impact munition? (including rubber bullets)

Often the words 'rubber' or 'plastic bullets' are used in the media to refer to all impact munitions. But there are many kinds of impact munitions that can cause different injuries. Impact munitions are commonly made of metal, plastic, rubber, bean bags, foam or wood.

Impact Munitions are a group of 'less lethal' ammunition and projectiles that are designed to halt people's actions by applying impact causing pain to part of their body.

Like 'real' bullets, impact munitions are fired out of shotguns or special launchers. They can also be hand-thrown as grenades.

What are the general harms of impact munitions?

Impact munitions are designed to hit you and cause pain. They can cause serious injury and even death. People at greater risk of severe injury or death include the young and old, anyone with a small frame or fragile bones. Injuries from impact munitions include:

- Bruising & Swelling
- Wounds from penetration of the skin
- Damage to internal organs
- Concussion
- Brain damage
- Fractures
- Broken bones
- Eye damage and blindness

Impact Munitions can be fatal. The risks of injury and death become more likely when

- Multiple rounds are fired rapidly
- They are aimed at somebody's head, neck or chest.
- A person is hit in the groin or above the waist
- Fired at short range making it hit someone very hard
- Fired at long range making the shot very inaccurate
- They bounce off the ground and walls

Badly designed and poorly made impact munitions are extremely dangerous.

→ For an example of how impact munitions are discussed in a popular trade magazine distributed to police and law enforcement read this article from Police Magazine

What uses of riot control make it more dangerous to people?

→ Police firing tear gas in enclosed spaces where there are no clear escape routes

- The use of tear gas in an enclosed space is extremely dangerous as it intensifies toxicity levels, as well as panic levels, which can lead to serious lung damage or death by suffocation.

→ police firing tear gas and impact munitions from close distances and at times aiming directly at people

- Protocols for firing tear gas found in US riot control training manuals for police departments attempt to standardize the distance from which grenades are fired at crowds, accounting for the direction and strength of the wind, as well as the location of barriers and structures that might trap the chemical substance in the air. **Tear gas is to be fired at the ground not directly at people.**

- Impact munitions are not meant to be fired at people's faces or areas where they have vital organs.

→ tear gas canisters, fired on the streets at protesters that are expired.

- Expired tear gas is dangerous for a number of reasons. First, the mechanism that sets off the canister and grenade can become faulty. This can lead to injury for personnel using the device. It can also make incendiary devices increasingly likely to cause fires. Secondly, the chemical compound contained in the grenade may no longer be approved according to the most recent safety tests and certificates. Thirdly, it can be even more difficult to trace expired gas canisters to their point of sale. This is because less-lethal ammunitions do not have the same kind of tracking procedures as firearms, they can be moved between storage facilities less publicly accessible documentation. Expired equipment should not be in use on the street. It is meant to be taken out of circulation and destroyed according to careful environmental protocols for waste disposal.

→ skin blisters on protesters reportedly from tear gas

- Previous research shows that skin blisters and burns can occur as the result of being exposed to tear gas. This can be due to the concentration of gas a person was exposed to; a skin allergy or irritation; or it can be the result of other chemicals mixed into the weapon, particularly with tear gas (or pepper) sprays.

What is the legality of riot control and how is its use monitored?

- There are currently no agreed rules for how impact munitions should be designed, produced, tested and used in the United States.
- There is no legal obligation in any country, anywhere in the world to record the number of deaths and injuries from riot control technologies.
- Likewise, there is no legal obligation to record their deployment, purchase or environmental damage.
- The legal status of tear gas under international law is unclear.
- The Chemical Weapons Convention bans chemical warfare, but contains an exception clause for the use of Riot Control Agents by law enforcement.
- There is no standardised mechanism to account for how much tear gas or other less lethal weapons gets shipped or stored or used on either a national or international scale.

What is "Less Lethality"?

- Like all weapons, there are different scales of violence used in deployments of riot control weapons. If a grenade is tossed on the ground in front of a crowd where there are clear exit points (as protocol suggests), it is less likely that someone will die than if I lodge that same grenade into a car, or a prison cell, or a subway station.

  Likewise, if I shoot you in the foot you are less likely to die than if I shoot you in the head. However, this does not mean that the foot bullet is a 'humanitarian agent' whereas the head bullet is a violent weapon. Unlike other objects which are not normally weapons but can be weaponized (for example a baseball bat or a frying pan), tear gas and impact munitions have no alternative, normal or everyday use. They are not a piece of sports equipment or a kitchen utensil.

RiotID: infographics on riot control for free reproduction

A website dedicated to understanding, monitoring and recording the use of riot control offers infographics and social media graphics that can be freely reprinted and shared. https://riotid.com/

RIOTID Weapon Identification Guide
https://riotid.com/downloads/RiotID_Guide/RiotID_Guide_ENGLISH.pdf

- *Also available in Arabic, Greek, Italian, French, Spanish, German and Turkish*

RIOTID Infographic: What is Tear Gas and Pepper Spray?

Full infographic
https://riotid.com/downloads/Tear_Gas_and_Pepper_Spray_Guide/Tear_Gas_and_Pepper_Spray_Guide_ENGLISH.pdf

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Social Media Images
https://riotid.com/downloads/Impact_Munitions_Guide_Social_Media_Images.zip

Links to My Book and Articles

Paperback and e-book from Verso
https://www.versobooks.com/books/2109-tear-gas

Historical Overview of tear gas
https://www.theatlantic.com/international/archive/2014/08/100-years-of-tear-gas/378632/

National Guard and Riot Control
http://america.aljazeera.com/opinions/2014/8/ferguson-nationalguardpolicemilitarizationrace.html

History of Riot Control
http://america.aljazeera.com/opinions/2015/5/the-profitable-theatrics-of-riot-control.html

Profiteering of Protest
https://www.versobooks.com/blogs/3526-like-chopping-onions-at-the-world-s-largest-security-expo

https://www.vice.com/en_uk/article/mv5p5y/how-tear-gas-became-the-governments-weapon-of-choice-to-suppress-protests-all-over-the-world

https://newint.org/features/2014/03/01/protest-profiteers

Case for Regulation
https://sur.conectas.org/en/riot-control-agents-case-regulation/

Evidence in Academic Research Relating to injuries from the use of tear gas, pepper spray and impact munitions

- A summary of 31 studies from 11 countries of injuries from tear gas and pepper spray occurring between 1990 and 2015 https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4814-6
    - "Out of 9261 total injuries, 8.7% were severe and required professional medical management, while 17% were moderate and 74.3% were minor. Severe injuries occurred to all body systems, with the majority of injuries impacting the skin and eyes. Projectile munition trauma caused 231 projectile injuries, with 63 (27%) severe injuries, including major head injury and vision loss. Potentiating factors for more severe injury included environmental conditions, prolonged exposure time, and higher quantities of chemical agent in enclosed spaces."

- A summary of 26 articles between 1990 and 2017 of injuries and deaths from impact munitions fired during crowd control https://bmjopen.bmj.com/content/7/12/e018154.abstract
    - "These articles included injury data on 1984 people, 53 of whom died as a result of their injuries. 300 people suffered permanent disability. Deaths and permanent disability often resulted from strikes to the head and neck (49.1% of deaths and 82.6% of permanent disabilities). Of the 2135 injuries in those who survived their injuries, 71% were severe, injuries to the skin and to the extremities were most frequent. Anatomical site of impact, firing distance and timely access to medical care were correlated with injury severity and risk of disability."

Evidence in Academic Research Relating to expired gas

(there is very little available)

- There is reference to being careful when handling expired canisters in this article in Monsudi, K. F., & Ayanniyi, A. A. Bodily and Ocular Injuries following Tear Gas Canister Explosion. *Asian Journal of Health and Medical Sciences Vol*, *1*(1), 69-74.

Evidence in Academic Research Relating to skin blisters from tear gas

- "To deploy them as sprays, the use of propellants and nonaqueous solvents, such as the industrial degreaser methyl isobutyl ketone, is required. Exposure to such solvents can by itself cause dermal scaling, peeling and blistering as well as irritation of the eyes and respiratory tract.3" https://www.ncbi.nlm.nih.gov/pmc/articles/PMC81222/#r3-42

- This supports British findings from early CS deployment https://www.independent.co.uk/news/doctors-tell-of-dangers-in-cs-spray-s-ing-causes-skin-blistering-1173736.html

- Blistering as a possible effect is also mentioned in this more recent study that doesn't differentiate weapon type https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5096012/#nyas13141-bib-0025

    - "Physicians examining CS-exposed patients often report skin burns, especially when large quantities are used, as in a case involving a riot at a Vietnamese refugee detention center in Hong Kong.30, 32 Multiple cases of unusually severe skin reactions in response to CS exposure have been reported, including severe facial erythema and swelling that obscured vision.41 Physicians from the Department of Dermatology at San Francisco General Hospital observed severe CS-induced erythematous dermatitis of the face, neck, and hands.42 Cases of allergic contact sensitization were reported with erythematous patches and multiple vesicular eruptions on the skin following heavy exposure to CS.43 Ninety percent of workers in a plant manufacturing a CS agent reported a history of dermatitis on the arms and neck, with 7% showing positive patch-test reactions to CS, suggesting that CS may act as a contact sensitizer.44"