EXAMINATION OF GAS AND ALARM WEAPONS, THE ACQUISITION AND POSSESSION OF THEM

GÁZ-ÉS RIASZTÓFEGYVEREK, MEGSZERZÉSÜK ÉS TARTÁSUK SZABÁLYOZÁSÁNAK VIZSGÁLATA

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Abstract

"COMMISSION IMPLEMENTING DIRECTIVE (EU) 2019/69 of 16 January 2019 laying down technical specifications for alarm and signal weapons under Council Directive 91/477/EEC on control of the acquisition and possession of weapons" entered into force in our country on January 1, 2023 directive that redefines the concept of individual firearms as well as technical parameters of gas- and alarm weapons. The referenced EU 69/2019 Implementation Directive entered into force on January 1, 2021 as Annex No. 2 of XXIV of 2004 Firearms and Ammunition Act and defines the system of requirements for gas and alarm weapons. After a brief historical overview of gas and alarm weapons, the article presents the types of gas-alarm weapons. Subsequently, EU Implementation Directive 69/2019 and related legislation will examine the modified conditions for the classification, technical parameters, placing on the market, acquisition and possession of weapons.

Keywords

gas and alarm weapons, weapons law, Directive (EU) 2019/69, gas cartridges, alarm cartridges, gas-alarm agents

Absztrakt

Hazánkban 2023. január 01-től lépett életbe a „Bizottság (EU) 2019/69 végrehajtási irányelve (2019. január 16.) a fegyverek megszerzésének és tartásának ellenőrzéséről szóló 91/477/EGK tanácsi irányelv szerinti riasztó- és jelzőfegyverekre vonatkozó műszaki előírások meghatározásáról" irányelv, amely újra definiálja az egyes tűzfegyverek fogalmát, valamint a gáz. és riasztófegyverek műszaki paramétereit. A hivatkozott EU 69/2019 Implementációs direktíva a 2004. évi XXIV. törvény a lőfegyverekről és lőszerekről 2. számú mellékleteként 2021. január 1-én emelkedett jogerőre és határozza meg a gáz- és riasztófegyverek követelményrendszerét. A cikk a gáz- és riasztófegyverek rövid történeti áttekintése után bemutatja a gáz-riasztó fegyverek típusait. Ezt követően az EU 69/2019 Implementációs direktíva, valamint a kapcsolódó jogszabályok vizsgálatán keresztül foglalkozik a fegyverek besorolásának, műszaki paramétereinek, forgalomba hozatalának, beszerzésének és tartásának módosított feltételeivel.

Kulcsszavak

gáz- és riasztófegyverek, fegyvertörvény, (EU) 2019/69 Direktíva, gáztöltény, riasztótöltény, gáz-riasztó hatóanyagok

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INTRODUCTION

The first domestically produced gas pistols were manufactured at the Arms and Machine Factory Joint Stock Company founded in Budapest on February 24, 1891, after the company merged with the Metal and Lamp Factory Joint Stock Company (Lampart) in 1935. [4] Over the next few decades, the legal environment governing their commercialization, purchase and possession was, from today's point of view, contradictory. For example, BM Decree 2/1968 only laid down regulations regarding their purchase, and did not cover their possession. In many cases, those entitled to purchase have purchased gas and alarm weapons for others, illegally putting weapons into the hands of unauthorized persons. [1] After the change of regime, Government Decree No. 115/1991 (IX.10.) was published on small arms and ammunition, gas and alarm weapons, as well as air guns and shooting ranges, which already provided a comprehensive legal background for the acquisition and possession of gas and alarm weapons. [1] The contents of this legislation provided the legal background for the legal purchase of gas and alarm weapons offered by Hungarian arms manufacturing companies appearing after the regime change. Hungary joined the European Union as a full member on 1 May 2004, and through the related legislative harmonization, Act XXIV of 2004 on Firearms and Ammunition and Government Decree No 253/2004 of 31 August 2004 on arms and ammunition were established. This legislation is based on Council Directive 91/477/EEC of 18 June 1991 on control of the acquisition and possession of weapons, as amended several times. The latest amendment to Implementing Directive (EU) 2019/69 on gas and alarm weapons entered into force in Hungary on 1 January 2023 as Annex 2 to Act XXIV of 2004.

DEFINITION, CLASIFICATION AND TECHNICAL PARAMETERS OF GAS-ALARM WEAPONS

According to Section § 2 (32) of Act XXIV of 2004 on Firearms and Ammunition, "gas and alarm weapons: devices which are only suitable for operating gas cartridges and alarm cartridges." [2] The law therefore classifies both types into one category, but it is worth distinguishing between these two types on the basis of their ammunition, their use and the purpose for which they are used.

Alarm weapon

Eur.Ing. Frank Gy. et al. (1995), "the operation of an alarm weapon actually mimics the light and sound effect of a real firearm." [1, p. 52] It is worth noting, however, that the appearance of the alarm weapon is the same as that of a handgun capable of directly killing, therefore the deterrent power of the alarm weapon cannot be neglected. Its cartridge does not contain a projectile, therefore it can be used primarily for alarm, signalling, surprising the attacker, and stopping and, if necessary, averting the attack. The requirement of a permit to carry an alarm weapon is strongly justified, because alarm weapons can cause serious injury or, in extreme cases, death, despite the absence of a projectile, especially in the case of innocent, negligent or knowingly violation of the rules. This can occur if the shot is fired directly at the body surface (e.g. head) or on thin clothing. The magnitude of the safe distance depends on the calibre of the weapon. [1]

Gas weapon

In its construction, operation and design, it is basically identical to the alarm weapon, the difference is to be found in the cartridges used. The solid tear-exciting substance placed in its cartridge becomes gaseous due to the high temperature and pressure generated when the weapon is fired and escapes through the barrel of the weapon in the direction of the attacker, into the open air. The effect of the gas cloud is close to that of tear gas sprays, but may be more effective due to the significant light and sound effects associated with firing and the increased range due to higher pressure. [1] Depending on the active ingredients used in the cartridge, which will be described in detail later, the inability to fight is between 5 and 15 minutes. [6] Figure 1 shows a human test with a gas weapon using a 9 mm PAK cartridge with the active substance CN (chloroacetophenone). The use of the weapon is visibly effective because it has a serious effect on the target.

Figure 1: Gas weapon in use [13]

CALIBRE FOR GAS-ALARM PISTOLS

Like live weapons, gas pistols have different calibres, but in the case of gas pistols – in the absence of a projectile – the calibre is equal to the diameter of the cartridge-case.[1] Figure 2 shows the range of alarm and gas cartridges:

Figure 2: Ammunition used in gas-alarm pistols [7]

6 mm flóbert platz

Figure 3: 6 mm flóbert platz gas and alarm cartridge [7], [14]

The mouth of cartridge-case of the alarm (start) cartridge is contracted like a star. In the gas version, 60-65 mg of chloroacetophenone gas-forming agent and wax/paraffin wad/insulation are placed above the initiating agent in the form of crystalline powder, as shown in Figure 3. Gunpowder is not contained in either version, the cartridge-case is soft copper. It has a range of 1-1.5 meters, which is comparable to the range of gas spray. Typically cartridges for gas and alarm weapons with a sliding block magazine. [7]

.22 Lang Knall alarm cartridge

Figure 4: .22 Lang Knall alarm cartridge [15]

Figure 4 shows the .22 Lang Knall alarm cartridge. The rim-firing 15mm long .22 LR cartridge-case delivers impressive volume and is effective from 2 meters. The gas charge is always chloroacetophenone, up to a maximum of 125 mg. [7]

.315 Knall

Figure 5: .315 Knall alarm cartridge [15]

The .315 Knall alarm cartridge shown in Figure 5 is the smallest cartridge for self-loading pistols. The centrefire cartridge with groove is filled with smokeless gunpowder, the length of the brass cartridge-case is 15 mm. The gas pressure is 45 MPa, which exceeds the significantly larger 9 mm PAK cartridge, and the range is 3-3.5 meters. [7]

9 mm Knall

Figure 6: 9 mm Knall cartridge [15]

The 9 mm Knall cartridge shown in Figure 6 is a flanged centrefire cartridge with a cartridge-case length of 17 mm, plastic cap and cartridge-case material with a contracted closure. It is filled with nitro powder as a gas cartridge and contains black powder or a mixture of the two as an alarm cartridge. Its range exceeds 3 meters, and its gas pressure is 26 MPa. [7]

9 mm PAK

Figure 7: 9 mm PAK alarm cartridge [16]

The 9 mm PAK alarm cartridge shown in Figure 7 is a cartridge with a 22 mm cartridge-case length, groove and centrefire system for self-loading gas-alarm weapons. It has a gas pressure of up to 45 MPa, an average range of 4 meters, and its sound and muzzle fire have a truly deterrent effect. [7]

CONSTRUCTION, FUNCTION AND ACTIVE SUBSTANCES OF GAS CARTRIDGES

The primary purpose of the gas cartridge is non-lethal self-defence, its effect is achieved by special gases emanating from the cartridge when fired. In terms of structure, its parts are: cartridge-case, initiating agent, crystalline active substance (wrapped in a protective film) and wad. The force caused by the firing pin forces the initiating agent to explode, and then the crystalline material sublimates from the heat released. Due to the increase in pressure caused by the developed gas, the front of the cartridge-case opens and the active substance forms a cloud in the form of a gas cloud. Irritants come into contact with skin or mucous membrane or if they are inhaled. [8] The type of charge is indicated by colours for grooved cartridges for semi-automatic gas weapons and by the mark milled into the base for flanked cartridges made for revolvers. [8]

A summary of the different active substances is given in Table 1.

Name	Active ingredient	Colour	Effect	Note
alarm cartridge	no	green	no	-
CS	o-chlorobenzylidene malononitrile (80 mg)	yellow	Mucous membrane irritation, coughing, lacrimation, vomiting	if the target person is under the influence of alcohol, it is less effective; burning, stinging eyes and very severe tearing, skin irritation
CN	chloroacetophenone (220–240 mg)	blue, purple, black	Cough, tearing	It is outdated, weak in terms of its effect, harmful to health
PV OC	pelargonic acid vanillylamide / oleoresin capsicum (20, 45, 120 mg)	brown, red, orange	Mucous membrane irritation, coughing, lacrimation, vomiting	State-of-the-art, natural active substance (capsaicin) It is also called paprika. (pepper).
CR	Dibenzoxazepine (20, 45, 120 mg)	-	Cough, lacrimation, temporary blindness, vomiting	Banned in Europe! It has 6-10 times the effect of CS. It has a serious health-damaging effect.

Table 1: Chemical properties and physiological effects of irritant chemicals most commonly used in gas cartridges (or gas sprays) of gas-alarm weapons [8]

The physical and chemical properties of some of the active substances listed in Table 1, the symptoms caused by their use, first aid information in case of symptoms, exposure and health effects, potential environmental hazards and management tasks are set out in International Chemical Safety Cards issued within the framework of a project of the World Health Organisation (WHO) and the International Labour Organisation (ILO) with the European Commission.

o-chlorobenzylidene malononitrile

Formula: ..... $C_{10}H_5ClN_2$ / $ClC_6H_4CH=C(CN)_2$
Molecular weight: ..... 188.6 g/mol
Boiling point: ..... 310-315 °C
Melting point: ..... 93-96 °C
Solubility in water: ..... at 20 °C: 0.1-0.5 g/100ml
Vapour pressure: ..... 0.0045 Pa
Relative vapour density (air=1): ..... 6.5 [20]

In terms of physical condition and appearance, it is a white, crystalline powder with a characteristic odour, which reacts with strong bases and strong acids, forming ammonia. On combustion, it decomposes, resulting in toxic fumes containing hydrochloric acid, hydrogen cyanide and nitrogen oxides. In terms of routes of exposure, the substance can be absorbed by inhalation, dermal or ingestion. [20]

Chloroacetophenone

Formula: ..... C_8H_7ClO / $C_6H_5COCH_2Cl$
Molecular weight: ..... 154.6 g/mol
Boiling point: ..... 244-245 °C
Melting point: ..... 54-59 °C
Density: ..... 1.3 g/cm³
Solubility in water, at 25 °C: 1.64 g/100ml
Vapour pressure at 20 °C: ..... 0.7 Pa
Relative vapour density (air=1): 5.3
Relative density of the vapour/air-mixture at 20 °C (air=1): 1.0
Flash point: ..... 118° C
Octanol/water partition coefficient as log Pow: ..... 2.08 [21]

Colourless or pale grey crystals decompose on combustion, forming toxic and corrosive fumes that also contain hydrochloric acid. The substance may enter the body by inhalation and ingestion. In terms of its short-term exposure effects, it causes lacrimation, severe irritation of the eyes, skin and respiratory tract. Inhalation of vapour or aerosol causes pulmonary oedema. [21]

Pelargonic acid vanillylamide

Molecular formula: ..... $C_{17}H_{27}NO_3$
Molar mass: ..... 293,4 g/mol
State of matter: ..... solid
Form: ..... powder
Colour: ..... white - whitish - light yellow
Odour: ..... pungent
Melting point/Freezing point: ..... 52 – 57 °C
Flash point: ..... 190 °C
Density: ..... 1,1 g/cm³ at 25 °C [22]

When burning white, whitish or light-yellow powder, nitrogen oxides (NOx), carbon monoxide (CO) and carbon dioxide (CO_2) are formed. The substance causes severe skin irritation, allergic skin reaction, severe eye irritation and respiratory tract irritation. [22]

Capsicum oleoresin (Capsaicin)

Molecular formula: ..... $C_{18}H_{27}NO_3$
Molar mass: ..... 305,4 g/mol
State of matter: ..... solid
Form: ..... crystalline powder
Colour: ..... white - whitish - light yellow
Odour: ..... odourless
Melting point/Freezing point: ..... 62 – 65 °C
Boiling point: ..... 210 °C
Flash point: ..... 113 °C [23]

The active ingredient extracted from red chili pepper (capsaicin). It is a skin irritant causing severe eye irritation and respiratory irritation. It can be ingested by inhalation, absorption through the skin and ingestion route of exposure. When capsaicin is burned, nitrogen oxides (NOx), carbon monoxide (CO) and carbon dioxide (CO_2) can be formed. [23]

Dibenzoxazepine

Molecular formula: ..... $C_{13}H_9NO_{\_}$
Molar mass: ..... 195,22 g/mol
Density: ..... 1,160±0,10 g/cm^3
State of matter: ..... solid
Form: ..... crystalline powder
Colour: ..... pale yellow
Odour: ..... pepper-like
Mlting point: ..... 73 °C [24]

It is poorly soluble in water, does not decompose in it. At room temperature, it is a micro-grained, pale-yellow substance with a pepper-like odour. Its effect is 6-10 times stronger than CS gas (o-chlorobenzylidenemalononitrile). Its effects include intense skin irritation, temporary blindness, coughing, wheezing, panic. It can cause immediate incapacitation and is thought to have carcinogenic effects. [24]

GROUPING OF GAS WEAPONS

According to their system of operation, three types of gas weapons are distinguished:

- sliding block magazine,
- revolver,
- self-charging. [1]

Gas pistols with sliding block magazine

The gas pistols with sliding block magazine have the calibre of 5.6-6 mm and a copper-sleeved, rim-firing cartridge. On the left side of Figure 8 is the gas cartridge filled with tear-exciting material. The opened mouth of cartridge-case is covered with red wax, which refers to the active substance (capsaicin) in the cartridge. The mouth of cartridge-

case of the alarm cartridge shown to the right of the picture is contracted. For both cartridges, the cartridge base is filled with fulminating powder. In the gas cartridge, the tear-exciting material is located above the fulminating powder. [1]

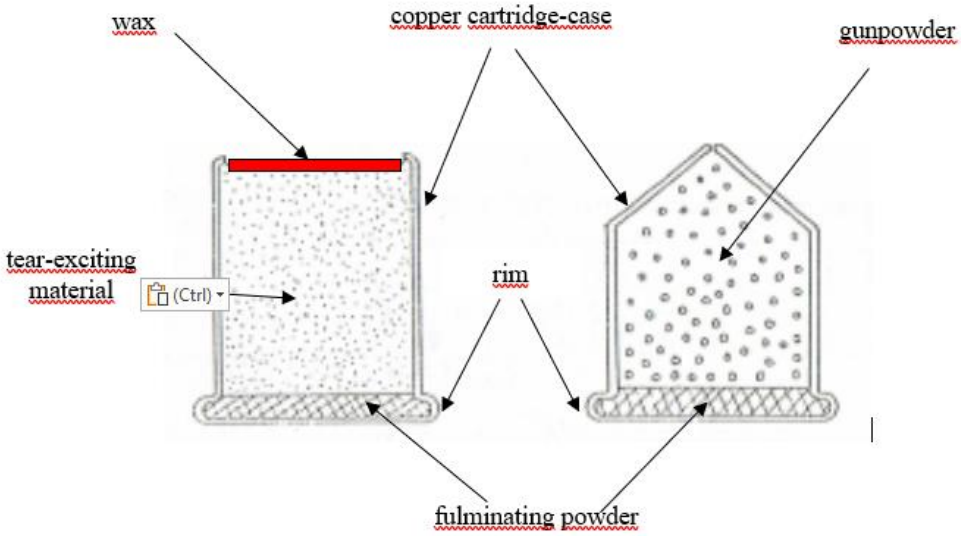

Figure 8: 6 mm flóbert platz gas-alarm cartridge [1]

Figure 9: sliding block magazine [17]

Next to the cartridge holes, the sliding block magazine shown in Figure 9 has grooves necessary for the operation of the forwarding arm. The structure of the gas pistol with a sliding block magazine is shown in Figure 10.

Figure 10: Gaspistol with a sliding block magazine [6] és [1, p.55.]

Its advantage is a constant state of readiness for fire, small size and less sensitivity to dirt. The disadvantages are the small range (1-2 m) due to the small volume size, the insignificant sound effect in particularly open space, the cumbersome reloading and the considerable effort required to pull the trigger back. [1]

Revolvers

Figure 11: Revolver [6], [1, p.58.]

The calibre of gas revolvers shown in Figure 11 are 5.6 (.22) and 9 (.38) mm and therefore use 5.6 mm rim-firing and 9 mm flanged, centre-firing cartridges with copper cartridge-case, which are depicted in Figure 12. [1]

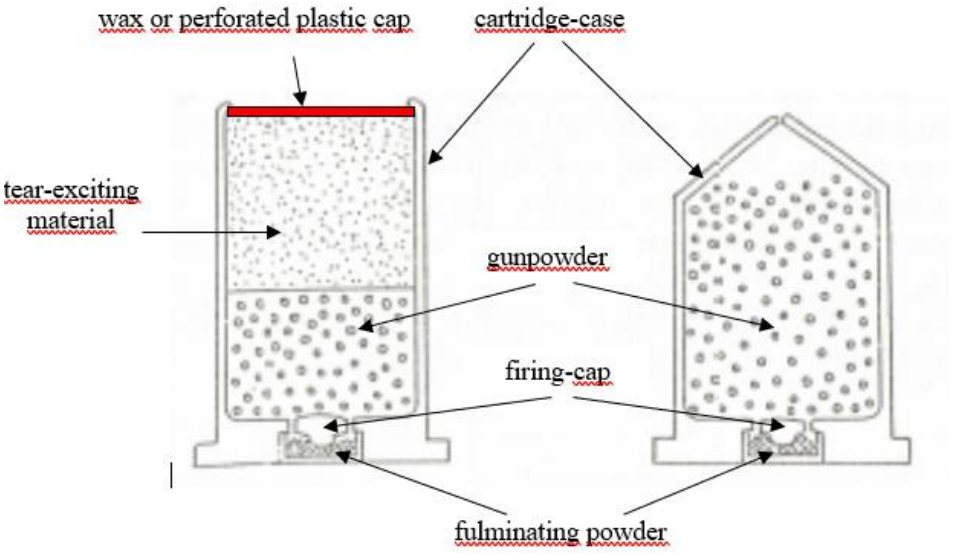

Figure 12: – Gas- and alarm cartridge of revolvers [1, p.57.]

The rotary drum is cast iron with a carbide insert that partially covers the chamber to prevent projectiles from leaving the barrel. It can only operate with its own flanged cartridge, and with other, more powerful cartridges, the drum explodes during firing, causing serious injuries to the user of the weapon. Such a state after an explosion can be seen in Figure 13. [1]

Figure 13: Gas weapon exploded due to improper use of ammunition [18]

Its range is 3-3.5 meters with 6 mm ammunition, while with 9 mm ammunition it averages 4-5 meters, but in favourable weather conditions (low humidity, tailwind, clean air) it can reach 10 meters. Depending on the structural design, the rotary magazine can hold 5-12 rounds and can be made of steel, spiater (Zn-AL-Cu casting) or aluminium. [6] The gas revolver is less sensitive to dirt and bullet pressure variations, and its construction is relatively simple and therefore reliable. The disadvantage is that emptying used cartridge cases and then reloading the magazine, especially in dark conditions, is cumbersome and lengthy. The capacity of the rotary magazine is limited and not all types have a fuse mechanism, so the latter are not protected from accidental discharge. [1]

Self-loading gas pistols

Figure 14: - Self-loading gas pistol [19] és [1, p.63].

The self-loading gas pistol shown in Figure 14 has the same structure and structure as civilian and military semi-automatic pistols with live ammunition, but in the case of gas pistols there is a plate 2 mm thick along the longitudinal axis of the barrel along the entire length and diameter of the barrel, which prevents a projectile from leaving the muzzle of the weapon. Their material is usually spiater, with a magazine capacity of 5-12 rounds. 8 and 9 mm grooved, centre-ignition, copper-sleeved cartridges can be loaded into the magazine. They can be fired with tear gaseous cartridges (CS, OC/PV, CN — see Table 1) or with simple alarm cartridges. [6]

The different coloured plastic pressed into the cartridge-case indicates that it is not an alarm cartridge but a gas cartridge, and the colour of the plastic also indicates the strength of the active substance in the cartridge. The cone colour of the alarm cartridge may be white or green, while that of the gas cartridges may be yellow, red or blue, as shown in Table 1. [1]

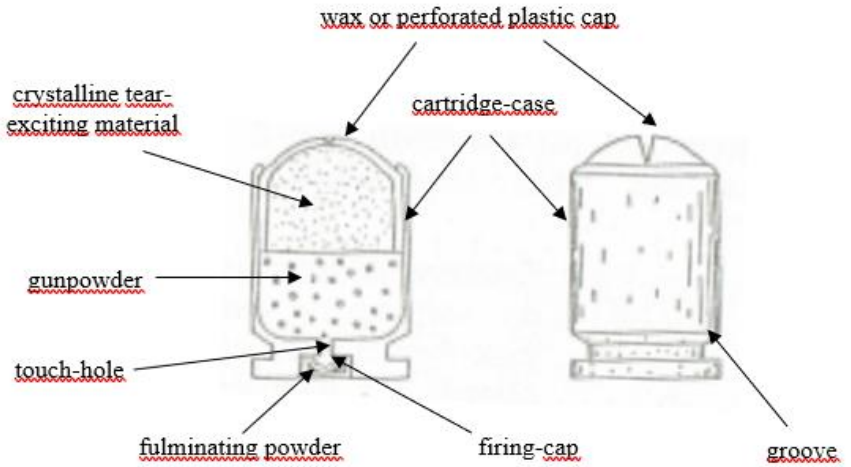

Figure 15: Gas- and alarm cartridge of self-loading gas weapons [1, p.62.]

In the case of the gas cartridge shown Figure 15, the firing-cap in the cartridge-base is used to ignite the gunpowder charge. The gunpowder charge placed above the touch-hole is exploded through the touch-hole by a jet flame from the fulminating powder in the firing-cap. Above the gunpowder charge, in the plastic cone but still inside the cartridge-case, there is a crystalline tear-exciting substance, which is transformed into a gaseous substance under the influence of heat effect and pressure from the combustion of gunpowder. [1]

All self-loading gas pistols must be insured against accidental discharge, which is achieved by two solutions: in the case of cheaper types, they mechanically prevent the trigger from being pulled back, while in the case of more expensive gas weapons with a complex firing mechanism, the movement of the firing pin is prevented. [1] The barrel narrowing shown in Figure 16, the 2 mm steel-plate hook in the barrel as shown in Figure 17, and the eccentric bore shown in Figure 18 are used against the use of live ammunition or rubber shell. [6]

Figure 16: Barrel narrowing [6]

Figure 17: Steel-plate hook in the barrel [10]

Figure 18:Eccentric bore [6]

The signal rocket extension shown in Figure 19 can be screwed into the thread formed on the inner surface of the muzzle, but its use is subject to legislation in Hungary. [6]

Figure 19: Signal rocket extension with signal rocket [9]

The technical parameters of gas alarm weapons should also be summarised in tabular form for a better overview. The summary is given in Table 2.

PARAMETER	SLIDING BLOCK MAGAZINE	REVOLVER	SELF LOADING PISTOL
Caliber [mm]	5,6 – 6	5,6 9	8 9
Magazine capacity [pcs]	6	5-12	5-18
Cartridge	copper cartridge-case, rim-firing	copper cartridge-case, rim-firing (5,6 mm) copper cartridge-case, flanged centrefire cartridge (9 mm)	grooved, centrefire cartridge with copper cartridge-case
Range [m]	1-2	3-3,5 (5,6 mm) 4-5 (9 mm)	< 10

Table 1: Technical parameters of gas-alarm weapons (authors' own editing)

The advantages and disadvantages of gas-alarm weapons listed above are shown in Table 3.

TYPE	ADVANTAGES	DISADVANTAGES
Sliding block magazine	Permanent ready to fire. Small size (can be carried in a pocket). Low sensitivity to impurities. No firing chamber.	Low range (1-2 m). Insignificant sound effect (outdoors). Cumbersome manual reloading. Significant force required to pull back the trigger.
Revolver	It is less susceptible to contamination and variations in cartridge peak pressure than a self-loading gas weapon. Relatively simple mechanics, therefore reliable.	Manual emptying and refilling are cumbersome, lengthy (especially in the dark). Limited capacity. Due to the absence of a locking device, there is a risk of accidental discharge.
Self-loading pistols	It is only necessary to pull it up before the first shot. High rate of fire. Indicates that the library is empty. Fast and safe recharging. Range: 10-12 meters. It can be carried in a pocket unobtrusively.	Sensitive to contamination and variations in cartridge peak pressure. Headwinds, snowfall, rain reduce the range.

Table 2:- Pros and cons of gas-alarm weapons (authors' own editing)

REGULATION OF THE ACQUISITION, POSSESSION AND CARRYING OF GAS AND ALARM WEAPONS

According to the legislation in force, gas and alarm weapons can be purchased and kept freely, but their carrying is subject to a permit. The permit can be applied for by any adult citizen (over 18 years of age) Hungarian citizen who has unlimited capacity of action, without criminal record, solely for self-defence purposes, if he or she has the theoretical and practical knowledge necessary for the carrying and lawful use of a weapon. [5]

Section 3/A(2) of Act XXIV of 2004 on Firearms and Ammunition lists in detail the grounds for refusal in which an applicant may not be issued with a permit to carry weapons. These include:

- criminal record,
- no criminal record, but the court has found the applicant criminally responsible [2]

The carrying of both types of weapons for self-defence purposes is subject to an official permit according to Section 4 (2) of Government Decree 253/2004 (VIII.31) on weapons and ammunition, namely that "the carrying of gas and alarm weapons shall be permitted by the police station competent for the place of residence of the applicant, or by the Budapest Police Headquarters in Budapest."[3] In order to conduct the procedure, a form downloadable from the website of the Police must be filled in and sent to the competent Police Station. The application for a permit to carry gas and alarm weapons for self-defence can also be submitted through the Client Gate using Form RI-0600.

Government Decree No. 253/2004 (VIII.31.) on arms and ammunition pursuant to Section 38 (1) (a) (not quoting the text of the Act verbatim): weapons may be transported in built-up areas, public places, public means of transport only with empty magazines, weapons and ammunition separately, in a closed box, and all measures must be taken to prevent them falling into unauthorized hands. Even with a permit to carry a gas weapon, it can only be carried concealed (e.g. covered by clothing). Under the influence of alcohol, narcotic drugs or other psychotropic substances, gas and alarm weapons may not be carried. [3]

According to Section 6 (6) of Government Decree No 253/2004 (VIII.31) on arms and ammunition, "Gas and alarm weapons may be brought into the territory of the country or traded if they do not contain a firearm and are unsuitable for firing solid projectiles." [3]

LEGISLATIVE CHANGES FROM 01 JANUARY 2023

On 01 January 2021, the amendment to Act XXIV of 2004 on Firearms and Ammunition entered into force, where the technical requirements of EU Implementation Directive 69/2019 became part of the Act in Annex 2. According to experts, the amendment, which entered into force on January 1, 2023, mainly affects manufacturers, importers and traders. [10]

The legislation does not have retroactive effect, therefore the treatment of gas and alarm weapons put into circulation before 2023 and the permits issued for them will not change, the weapons will remain gas and alarm weapons, and valid carrying permits will still be valid. (Act XXIV of 2004, § 2, 32 cb))

Annex 2 appearing in the amendment of Act XXIV of 2004 on Firearms and Ammunition that entered into force on 01 January 2021 contains the following. (Due to changes in the legal environment, it is worth going through the individual passages in detail and interpreting them.)

Annex 2 to Act XXIV of 2004

'Technical specifications for gas and alarm weapons

1. *A device with its own chamber which is intended to operate only gas or alarm cartridges shall be regarded as a gas and alarm weapon if:*
   - 1.1. *they are capable of shooting pyrotechnic signalling rounds only if an adaptor at the muzzle is attached;" [25]*

According to point 1.1, e.g. Röhm RG77, RG79 or Reck King Cobra, which contain an integrated signal rocket launcher, cannot be manufactured and placed on the market in the future. It is worth noting that lawmakers do not set an energy limit on the missile launcher extension and do not impose an obligation to clearly mark the extension with the weapon.

- 1.2. *„they have a durable device within the device that prevents the firing of cartridges loaded with single or multiple solid shots, solid bullets or solid projectiles;" [25]*

The term 'durable device' may give rise to confusion because the legislator presumably did not mean a separate instrument, but rather an obstacle already well-known, such as the barrel narrowing, steel-plate hook and eccentric bore shown in Figures 17, 18 and 19 shown in this article.

1.3. *„they are designed for a cartridge listed in, and complying with the dimensions and other standards referred to in, Table VIII of the Tables of Dimensions of Cartridges and Chambers (TDCC) established by the Permanent International Commission for the Proof of Small Arms (C.I.P.), as that Table applies in the version in effect at the time of adoption of this Directive." [25]*

Point 1.3 is effectively the subject of Article 2 of this Article, which entered into force on 16 January 2019. It represents a freeze on cartridge sizes in the EU, meaning that the existing supply of cartridges will not be expanded in the future. This is likely to reduce the willingness to innovate to some extent.

1.4. *„The devices are not capable of being modified through the use of ordinary tools to expel, or to become capable of being converted to expel, a shot, bullet or projectile by the action of a combustible propellant.*

1.5. *All essential components of the devices are such that they cannot be fitted or used as essential components of firearms.*

1.6. *Barrels of the devices are not capable of being removed or modified without significantly damaging or destroying the device." [25]*

Under clause 1.6, the conversion of tipper-barrelled shotguns into gas-alarm weapons will be prohibited, with some types being excused by welding off barrel removal elements.

1.7. *„In the case of devices with a barrel not exceeding 30 centimetres or whose overall length does not exceed 60 centimetres, the device incorporates irremovable barriers along the full length of the barrel such that a shot, bullet or projectile is not able to pass through the barrel by the action of a combustible propellant, and such that any free space left at the muzzle is no more than 1 cm in length." [25]*

Section 1.7 therefore EXCLUDES rubber bullet gas revolvers from legal compliance.

1.8. *„In the case of devices not falling within point 1.7, the device incorporates irremovable barriers on at least one third of the barrel length such that a shot, bullet or projectile is not able to pass through the barrel by the action of a combustible propellant, and such that any free space left at the muzzle is no more than 1 cm in length." [25]*

According to experts, point 1.8 applies to gas-alarm rifles, where the law does not require the obstruction to run along the entire length of the barrel, it is sufficient to place the hook on one-third of the tail side. [10]

1.9. *„the first barrier in the barrel is placed as close as possible after the chamber of the device while allowing the expulsion of gases through exit holes.*

1.10. *For devices designed to fire only blanks, the barriers referred to in point 1.7 or point 1.8 wholly block the barrel apart from one or more exit holes for gas pressure. In addition, the barriers wholly block the barrel in such a way that no gas can be fired from the front of the device." [25]*

Section 1.10 applies to old starter pistols used exclusively as alarm weapons and Western traditional weapons.

1.11.„All barriers are permanent and incapable of being knocked out without destroying the chamber or barrel of the device.

1.12.For devices designed to fire only blanks, the barriers are wholly made of a material which is resistant to being cut, drilled, bored or ground (or any similar process) and which has a minimum hardness of 700 HV 30 (according to the Vickers hardness test).

1.13.For devices not covered by the second subparagraph of this point, the barriers are made of a material which is resistant to being cut, drilled, bored or ground (or any similar process) and which has a minimum hardness of 610 HV 30. The barrel may have a channel along its axis to enable the irritants or other active substances to be expelled from the device.

1.14.The barriers are such that they prevent occurrence of the following:

(a) creation or enlargement of a hole in the barrel along its axis;" [25]

Here, the legislature presumably meant a kind of hole or opening by the name "hole".

„b) removal of the barrel, except where the frame and chamber area of the device is rendered useless as a result of the removal, or where the integrity of the device is so compromised that it cannot be used to form the basis of a firearm without significant repair or addition.

1.15.The cartridge chamber and barrel are both offset or tilted or staggered in such a way as to prevent ammunition from being loaded in and fired from the device." [25]

The longitudinal axis of the chamber and the part of the barrel of the weapon fitted with the hook must not overlap. It is important that there is an OR relationship between the above, i.e. either one can be applied, the simultaneous use of all three named solutions ("offset, tilted or staggered") is not required.

CONCLUSIONS, PROPOSALS

The purchase of gas-alarm weapons is not subject to a permit, their carrying is already regulated by law. Keeping them requires care, discipline and skill to ensure that weapons and ammunition do not fall into the hands of unauthorized persons, especially children. In stressful situations, gas and alarm pistols are easier to use, if lucky, they render the attacker unable to fight for a while, the weapon and ammunition are relatively cheap to obtain, and due to their small size, the weapons can be conveniently placed in a small bag or pocket. However, due to the short range, in an unfortunate case (headwinds or confined spaces), the user may also be endangered by the active substance intended for the attacker.

Perceived or actual deterioration of public safety, especially in some areas of large cities, may encourage people living locally and in the surrounding area to carry an alarm or gas weapon for safety. However, these advantages can create a false sense of security in the owner of the weapon, which can be fatal for him in the given situation, and therefore the wearer should receive comprehensive education. This should be an integral part of an information forum of its kind to make known to those concerned the circumstances of those considering buying and carrying gas-alarm weapons. Here, potential buyers would have the opportunity to clarify for what purpose they are buying a gas-alarm weapon. Knowing the

purpose of buying and wearing it can help them decide what type and size of weapon to buy. As legislators, it would be worth considering that already in high school, graduates should become familiar with the laws and regulations referred to several times, paying particular attention to knowledge about the possession, carrying and use of weapons. Experienced experts could introduce young people to gas-alarm weapons through practical demonstrations, where "live" shooting would also take place.

In Hungary, security guards performing armed service in the private security sector (factories, companies, cooperatives, etc.) currently possess and carry gas-alarm weapons, which can be justified by deterrence, a greater range than gas spray, and self-defence purposes while performing the task. The gas-alarm weapon can also be named as an alternative to gas spray, therefore we recommend its use also for persons performing public tasks, primarily serving in law enforcement directorates, such as public space inspectors, members of the animal protection guard service and members of the nature conservation guard service (mountain guard, fish guard).

The amendments to the law are mainly about how to prevent the use of live ammunition and rubber bullets in alarm and gas weapons, suggesting that easy access to these types of weapons leads to an increasing number of abuses. In order to verify this phenomenon and to determine the evolution of the number of injuries and crimes resulting from irregular and unlawful transformations, it would be worthwhile to carry out separate research in the future.

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REFERENCE

[1] Eur.ing. Frank György – Kováts László – Nán Jenő – Tóth Lóránd: Fegyverismeret – Jegyzet a biztonságtechnikai mérnök hallgatók részére I. kötet – PRO LEX Oktató és Szolgáltató Kkt. – Budapest, 1995
[2] 2004. évi XXIV. törvény a lőfegyverekről és lőszerekről
[3] 253/2004. (VIII. 31.) Korm. rendelet a fegyverekről és lőszerekről
[4] Új magyar lexikon VIII.: Kiegészítő kötet (A–Z, 1962–1980). Szerk. Maros Istvánné, Zsilinszky Sándor Budapest: Akadémiai. 1981. ISBN 963-05-3852-0 ISBN 963052803 7 sorozat ISBN 963 05 2810 X kiegészítő kötet, p.167.
[5] Dr. Bokros Gábor: Jog & Fegyver – Kaliber Magazin Vol.105, January, 2007, http://drbokros.hu/wp-content/uploads/2012/09/105.-sz%C3%A1m-2007.-janu%C3%A1r.pdf, (downloaded: 14.09.2024.)
[6] Bartha Tibor - ÓE-BGK – Őrzésvédelem, fegyverismeret I. tantárgy – oktatási anyag (pptx) – Gáz_riasztó_fegyverek (23rd January, 2009 – 27 pages)
[7] Vass Gábor: Gáz-riasztó kaliberek, https://web.archive.org/web/20090227015918/http://www.gazpisztoly.hu/gazpisztoly/kaliberek.14.php (downloaded: 14.09.2024.)
[8] Vass Gábor: Hatóanyagok, https://web.archive.org/web/20090227170754/http://www.gazpisztoly.hu/gazpisztoly/cn_cs_oc_cr.10.php (downloaded: 14.09.2024.)
[9] Vass Gábor – Tűzijáték gázpisztolyból, https://web.archive.org/web/20090213193214/http://gazpisztoly.hu/gazpisztoly/tuzijatek.8.php, (downloaded: 14.09.2024.)

[10] Vass Gábor: Ez lesz a gázpisztoly 2023-tól! – Kaliber Info (14.09.2024.), http://www.kaliberinfo.hu/cikkek/ez-lesz-a-gazpisztoly-2023-tol/, (downloaded: 14.09.2024.)
[11] Új magyar lexikon 6. kötet (S–Z). Szerk. Berki Andor Budapest: Akadémiai Kiadó 1962. p.330.
[12] Nádasdy Ferenc: Alapmérések – Anyagvizsgálatok, Nemzeti Tankönyvkiadó / Tankönyvmester Kiadó, 2001, ISBN 963 92 6490 3, p.47
[13] CN humán teszt – 9 mm PAK gázpisztolyból, Kaliberinfó, 31st May 2013. http://www.kaliberinfo.hu/fegyvervideok/human-teszt/cn-human-teszt-9-mm-pak-gazpisztolybol/ (Downloaded: 14.09.2024.)
[14] Geco schreckschuss platzpatronen kal. 6mm flobert - 300 stück, shoot-club GmbH, https://www.shoot-club.de/Geco-Schreckschuss-Platzpatronen-Kal-6mm-Flobert-300-Stueck (downloaded: 14.09.2024.)
[15] .22 lang knall, 4komma5 Outdoor & Shooting Equipment GmbH, https://www.4komma5.de/index.php?jtl_token=f036e23582be74174c05b52f50cc1ee096afa2809ddb565491cd8ffc0cae2502&qs=.22+lang+knall&search= (downloaded: 14.09.2024.)
[16] Walther 9mm PAK, Tüskevár vadászbolt, https://tuskevb.hu/shop/walther-9mm-p-a-k/ (downloaded: 14.09.2024.)
[17] Csúszótár gáz-riasztó pisztolyhoz – 1, Vatera.hu, Extreme Digital-eMAG Kft., https://www.vatera.hu/csuszotar-gaz-riaszto-pisztolyhoz-1-3212838056.html (downloaded: 2022.10.16.)
[18] Vass Gábor – Hogyan tedd tönkre a Pitbullodat? - http://www.kaliberinfo.hu/cikkek/hogyan-tedd-tonkre-a-pitbullodat/, 6th November 2017 (downloaded: 14.09.2024.)
[19] EKOL Volga gázpisztoly fekete, Halcapone Vadász és Horgászcentrum, https://www.halcapone.hu/Ekol-Volga-Gazpisztoly-Fekete, (downloaded: 14.09.2024.)
[20] Nemzetközi Kémiai Biztonsági Kártyák – ICSC adatbázis – ILO, (o-KLÓRBENZILIDÉN)MALONONITRIL, ICSC: 1065 (September, 2002) https://www.ilo.org/dyn/icsc/showcard.display?p_lang=hu&p_card_id=1065&p_version=2 (downloaded: 14.09.2024.)
[21] Nemzetközi Kémiai Biztonsági Kártyák – ICSC adatbázis – ILO, KLÓRACETOFENON, ICSC: 0128, (2002 augusztus) https://www.ilo.org/dyn/icsc/showcard.display?p_card_id=0128&p_version=2&p_lang=hu (downloaded: 14.09.2024.)
[22] Biztonsági adatlap, Pelargonsav vanillilamid ≥97 %, Roth, Issued: 26th April, 2016, Reviewed: 15th July, 2021. https://www.carlroth.com/com/en/aliphatic-carboxylic-acids/pelargonic-acid/p/7015.1 (downloaded: 14.09.2024.)
[23] Biztonsági adatlap, Kapszaicin, Roth, Issued: 23rd January, 2017., Reviewed: 1st January,2024, https://www.carlroth.com/com/en/more-reference-substances/capsaicin/p/8804.1 (downloaded: 14.09.2024.)
[24] Gijsen HJ, Berthelot D, Zaja M, Brône B, Geuens I, Mercken M. " Analogues of morphanthridine and the tear gas CR as extremely potent activators of the human TRPA1 receptor ". J Med Chem. 53 (19): 7011–7020. doi: 10.1021/jm100477n. PMID 20806939. (downloaded: 14.09.2024.)

[25] COMMISSION IMPLEMENTING DIRECTIVE (EU) 2019/69 of 16 January 2019 laying down technical specifications for alarm and signal weapons under Council Directive 91/477/EEC on control of the acquisition and possession of weapons. L 15/22; 17.1.2019. (downloaded: 14.09.2024.)