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Munitions and explosives as objects of criminal offences during the commission of criminal offences

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Abstract
Without a principal law in Ukraine on weapons and munitions for them, certain difficulties arise in law enforcement activities with the qualification of the actions of offenders in the field of illegal circulation of weapons, manufacture of munitions, and the use of explosives. The purpose of this study was to investigate such weapons as ammunition and explosives, which become the subject of offences by criminals in connection with the illegal circulation of weapons, their components, their manufacture, and use. The study employed historical-legal, comparative-legal, systemic-structural, statistical, and sociological methods. Military supplies and explosives were classified to establish a particular object as an object of criminal encroachment; their forensically significant features and properties were determined. The role of ballistics specialists, explosives specialists, and other experts during the inspection of the scene, the investigation of illegal arms trafficking, the manufacture of ammunition and the use of explosives was covered. It was proved that ammunition and explosives have a close relationship with the persona of the criminal, the method of committing the criminal offence, and the trace pattern. The theoretical provisions regarding the properties and signs of ammunition and explosives were improved. Forensic recommendations on the actions of law enforcement officers with ammunition and explosives in criminal proceedings were developed. Recommendations regarding the removal and packaging of munitions and explosives as physical evidence have gained further development. The practical significance lies in clarifying the properties and signs of ammunition and explosives, which allows for the identification of these items at the initial stage of the investigation; correct actions for their detection, fixation, extraction, packaging; appropriate criminal-legal qualification of the offence committed

Keywords:
weapon; ammunition; dangerous substances; illegal arms trafficking; illegal manufacture of ammunition

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Introduction

A rather complex criminogenic situation has developed in Ukraine. Crime is adapting to new crisis situations related to the war on the territory of Ukraine. With the beginning of the full-scale military invasion of the Russian Federation (hereinafter – RF) on the territory of Ukraine, various levels of military confrontation arose: from air force battles with the use of missiles and aerial bombs to artillery shelling and the use of infantry weapons. The continuation of the war accentuates the need of the Armed Forces of Ukraine for various weapons, including combat supplies for light small arms. The defence forces receive military aid, units of which are armed with NATO multinational forces, NATO army arms groups (Yavuz, 2020).

At the same time, the wide distribution of small arms and military supplies of "NATO standards" on the territory of the country activated criminality, whose criminal elements began to process domestic weapons and existing military supplies under slightly different technical parameters. According to the reports of the Prosecutor General on registered criminal offences and the results of their pre-trial investigation for 2021-2023, in 2022 and the first quarter of 2023, the number of criminal offences related to the illegal circulation of weapons, their processing and repair increased in Ukraine, and as well as the illegal manufacture of ammunition and the use of explosives. Specifically, in 2021, 4,067 cases of illegal handling of weapons, munitions, or explosives were recorded (Article 263 of the Criminal Code of Ukraine)[1] (hereinafter – the CCU), 2,582 relevant criminal proceedings with an indictment were sent to court (Unified report..., 2021); in 2022, 4,735 (+16.4%) were published under this Article of the CCU, 2,919 (+13.0%) criminal proceedings were sent to court (Unified report..., 2022). In the first quarter of 2023 alone, 1,891 cases of illegal handling of weapons, ammunition, or explosives were registered in Ukraine, of which 643 criminal facts were filed in court (Unified report..., 2023).

There is a need for further development of a multidisciplinary approach to the investigation of crimes against humanity, war crimes and genocide. Among which the focus should be on the investigation of mass murders, genocide, crimes against humanity. A positive role can be played by the role of scientists from different countries who took part in the work of the International Criminal Tribunal regarding the crimes of genocide committed in Yugoslavia (Cox, 2003). Specifically, such crimes were committed with the use of weapons, ammunition, and explosives.

The most common munitions during hostilities and the corresponding increase in crime activity are 7.62 mm ammunition for Kalashnikov assault rifles (AK). (Nishshanka *et al*., 2021; Nishshanka *et al*., 2022). For instance, during the crimes in North Macedonia, these munitions were investigated, as well as the dispersion of gunpowder residues after the use of automatic weapons by the Serbs in the military conflict. Serbian ammunition for the Pietro Beretta model 70, 7.65 mm (Ristova *et al*., 2023).

The forensic aspect of the problem of researching weapons and military supplies used during armed combat clashes is important for identifying persons who, using weapons, committed crimes against humanity, genocide, killing the civilian population or prisoners of war. Therewith, it is worth taking advantage of the opportunity to identify, investigate, and establish the identity of the criminal based on the results of using the technology of recovery of hidden fingerprints on unused ammunition and spent cartridges (Exall *et al*., 2022).

As for the spread and illegal use of explosives, the challenges and dangers of active military operations cause many adverse consequences for the country's population, infrastructure facilities, communication links, and the natural environment. The danger comes primarily from military weapons, explosives, and devices that pose a potential danger in terms of the possible development of fire, explosive, as well as radiation, chemical, and other hazards (Smyrnov & Tolkunov, 2020). Environmental monitoring of explosive residues in soil, detection of explosive devices in vacated combat areas, evidence serious problems (Sandeep *et al*., 2022). After fighting and causing the death of soldiers, soil contamination occurs due to the rotting and decomposition of corpses, namely the release of lipids into the environment (Queirós *et al*., 2023). Problems of environmental pollution, damage to flora and fauna, destruction of animals as a result of war crimes attract the attention of scientists around the world (White, 2020). They focus on aspects of the investigation, methods of forensic examination regarding the determination of air, water, and land pollution, including due to the activities of non-governmental organizations. Therewith, the issue of sampling remnants of explosives using a gelatine base stays relevant (Amaral *et al*., 2020).

Therefore, the issue of analysing the subject of criminal encroachment in the illegal circulation of weapons, the manufacture of military supplies and the use of explosives today, in the conditions of a full-scale military invasion of the Russian Federation in Ukraine, acquires special importance and requires detailed consideration.

The purpose of this study was to investigate the properties and signs of ammunition and explosives, which appear as physical evidence during the investigation of illegal acts with these items, their illegal manufacture, processing, or changing the appropriate marking, including the development of recommendations for

[1]Order of the Ministry of Justice of Ukraine No. 1138/5 "On Some Issues of Providing Forensic Expert Activity in the Conditions of Martial Law". (2022, March). Retrieved from https://ips.ligazakon.net/document/RE37662?an=16.

the actions of law enforcement officers with such items when they are detected. The scientific originality of this study lies in the comparative analysis of international regulations in the field of arms, ammunition, and explosives circulation, as a result of which the conformity of national legislation on criminal liability for illegal actions with these items to the prohibitions defined in international documents was established.

Literature Review

Ukrainian and foreign scientists were engaged in the study of various issues in the field of weapons circulation, the manufacture of weapons using explosives, countermeasures against socially dangerous acts committed in relation to them.

Specifically, A. Stavrianakis (2019) investigated the issue of statutory regulation of arms circulation at the level of the international UN Arms Trade Treaty. He claimed that the effect of this Treaty causes the strengthening of modern militarism in the world, which causes a reinterpretation of the problems of control over the circulation of arms. Another researcher, A. Pytlak (2020), addresses to periodic conferences at which meetings of working groups take place according to the UN Arms Trade Treaty, where topical issues of the circulation of weapons and military supplies are discussed according to thematic areas. S. Grassi (2021) paid attention to the "Protocol against the illegal manufacture and trafficking of firearms, their component parts and components, as well as their ammunition", which complements the UN Convention against Transnational Organized Crime dated 31.05.2001[1]. He analysed the state of illegal manufacture and circulation of firearms, their constituent elements and components, and ammunition for weapons.

The conclusions of these authors found their further research in the study by J. Christensen (2019), who highlighted the issue of providing weapons to states and the possible consequences of this. The scientist considered it necessary when equipping certain countries with weapons to investigate whether they belonged to a repressive or aggressive state and to foresee the possibility of the governments of these countries taking part in illegal oppression and aggression.

In this regard, O. Samoilenko *et al*. (2022) considered the issue of countering the threats of illegal trafficking of weapons, munitions, and explosives at the border points of Ukraine with the countries of the European Union (hereinafter – the EU) under martial law conditions. The authors proposed effective recommendations regarding the activities of the State Border Guard Service of Ukraine to counter the threats of illegal trafficking of weapons, ammunition, and explosives at checkpoints with EU countries.

The superiority of security factors over economic factors in the issue of weapons supply was also explored in the scientific works of P.W. Thurner *et al*. (2019). The authors noted that few countries can produce all their own military equipment, and therefore the military systems of most countries rely on the import of weapons, ammunition, and explosives. At the same time, consideration should be given to licensed gun dealers and extensive background checks should be conducted on private individuals who wish to purchase firearms, including inherited firearms (Kleck, 2021). L. Kahane (2020) studied the issue of illegal trafficking of criminal weapons between states in America, namely: the disguised ways of non-compliance with the laws of individual American states, which relate to inspections of dealers with a federal license and necessary permits.

The issue of recognizing firearms for forensic purposes by the sound signals of their mechanisms, the study of hybrid self-made assault rifles, submachine guns with an open shutter and cartridges for them became the subject of research by P. Giverts *et al*. (2020). Aspects of the classification of firearms according to various criteria were developed by T. Shumeiko *et al*. (2021). The scientists connected their research with a detailed analysis of the draft Laws of Ukraine in the field of arms and ammunition circulation.

The possible relationship between the suicide rate, the number of terrorist attacks with the use of firearms, considering the indicators of the circulation of weapons in the state, was investigated by other scientists (Carson *et al*., 2022). At the same time, a comprehensive analysis of the problems of the illegal manufacture of military supplies, the use of explosives, and their illegal circulation are still an understudied issue in scientific publications.

Materials and Methods

During the preparation of this paper, methods of scientific research were used, which ensured the reliability of its results. Specifically, the historical-legal method helped analyse the development of statutory regulation of arms circulation in Ukraine; the comparative legal method was used during the study of national and international legislation on countering the illegal circulation of weapons, the manufacture of military supplies, and the use of explosives; systemic-structural - for the investigation of actions that constitute criminal offences in the sphere of arms and related means circulation; statistical and sociological methods helped identify trends in the increase in the number of criminal offences in the field of trafficking in weapons, ammunition, and explosives, to find out the opinion of practical workers regarding the issues under study and to support the author's assertions with relevant data.

[1]Protocol of the Verkhovna Rada of Ukraine No. 995_792 "On Against the Illicit Manufacturing and Trafficking in Firearms, their Parts and Components, as Well as their Ammunition Supplementing the United Nations Convention Against Transnational Organized". (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/995_792#Text.

The article uses: 1) reports of the Office of the Prosecutor General for 2021-2022 and the first quarter of 2023; 2) surveys of 140 investigative bodies of the pre-trial investigation of the National Police, conducted in 2022 in the investigative departments of Dnipropetrovsk, Zaporizhzhia, Kyiv, Ternopil, Kharkiv regions and the city of Kyiv, according to a specially developed questionnaire that covered particular questions (Table 1). The questionnaire was sent by mail, filled out by the respondents and sent back to the addressee by mail; 3) the results of the study by S.S. Vitvitskyi *et al*. (2021) of the materials of 125 criminal proceedings and 2,073 court verdicts related to the illegal handling of handguns and ammunition for them, as well as the results of a survey of 312 employees of the National Police of Ukraine.

Table 1. Anonymous survey of 140 respondents interviewed in the 2022 National Police pre-trial investigation regarding the investigation into the illegal manufacture of munitions and the use of explosives

1.	**Your total investigative experience:**	**Percentage of responses**
	up to 3 years	26.7
	3 to 5 years	25.0
	5 to 10 years	16.7
	over 10 years	15.0
2.	**How do you rate the organization of a departure to the scene of an incident related to the illegal production of military supplies or the use of explosives:***	
	as timely and properly organized	14.8
	departure is often late	26.7
	there are significant shortcomings of a logistical nature (transport, equipment, consumables)	70.2
	a long search for ballistic specialists, explosives specialists, and other experts to involve in the inspection	7.1
3.	**How do you assess the effectiveness of the use of expert research in the investigation of the illegal manufacture of munitions or the use of explosives:**	
	quite sufficient	36.6
	insufficient	43.1
	extremely unsatisfactory	20.3
4.	**If unsatisfactory, for what reasons:**	
	organizational difficulties	26.3
	material and financial reasons	87.5
	insufficient awareness of investigators about the possibilities of expert research	22.7
	duration of certain types of examinations	77.2
5.	**Did you involve specialists of the relevant profile to conduct preliminary investigations at the scene of the incident:**	
	in all necessary cases	37.1
	less often than was necessary and possible	42.3
	rarely	18.2
	did not involve	2.4
6.	**For what purpose were preliminary investigations of ammunition or explosives carried out at the scene of the incident:**	
	detection and recording of traces and objects that contain information about the identity of the criminal	31.2
	detection of other evidence	36.9
	detection of indicative investigative information	38.2
7.	**The main shortcomings in the appointment of examinations for the study of munitions or explosives are:**	
	incompleteness of setting tasks for the expert	14.1
	incorrect wording of questions	34.1
	provision of objects unsuitable for research	15.3
	Provision of unsuitable samples	28.9
	failure to provide necessary materials	24.1

Notes: According to the conditions of the questionnaire, it is possible to choose several answers to questions of the questionnaire No. 2, No. 4, No. 6, No. 7
Source: generalized data from the survey conducted by the author of this study

Results

In Ukraine, there is a legal breakdown in the sphere of circulation of weapons and military supplies. During the period of independence, over 15 draft laws on weapons were registered in the Verkhovna Rada, but none of them were approved in their entirety (Kofanov *et al*., 2021a). Scientists and the public have repeatedly called for the adoption of the law "On weapons and ammunition" (Voloboiev, 2019; Voluiko *et al*., 2020), which would include the fundamental concepts of hand firearms, their main parts and ammunition for them. The adoption of the relevant law would contribute to the legal regulation of the circulation of weapons on the territory of Ukraine, the establishment of appropriate control, would make it impossible to freely interpret and inconsistency in the terminology and classification of weapons objects, would create conditions for the regulation of social relations in the sphere of circulation of weapons and military supplies (Vitvitskyi *et al*., 2021).

Notably, on February 23, 2022, the Verkhovna Rada of Ukraine adopted as a basis (in the first reading) the Draft Law of Ukraine "On the Right to Civilian Firearms" (Reg. No. 5708)[1]. At the same time, it has not yet been approved in general. In 2013, Ukraine ratified the international document "Protocol against the illegal manufacture and trafficking of firearms, their parts and components, as well as their ammunition, which supplements the UN Convention against Transnational Organized Crime"[2]. As stated in the document, during the cooperation of the countries, information is provided regarding the movement of weapons, their components, military supplies of criminal origin. To exchange information, the member states prepare requests and receive answers to them without delay[3].

This international document plays a significant role in combating illegal arms trafficking, primarily of a transnational nature and committed by organized criminal groups. Scholars emphasize its importance in countering the illegal arms trade in the EU, especially after the terrorist attacks that have occurred in recent years (Nieto, 2023). The protocol is interrelated with other international documents in this area, covers response measures when relevant dangers are identified (Grassi, 2021).

Implementation of the provisions of this Protocol is prescribed in the Order of the Cabinet of Ministers of Ukraine dated February 13, 2013 "On approval of the plan of priority measures for the integration of Ukraine into the European Union for 2013"[4]. The existing normative instability of the circulation of weapons and military supplies in Ukraine forms a positive basis for the availability of weapons as a result of the full-scale military invasion of the Russian Federation on February 24, 2022, which expands the scope of committing grave and especially grave crimes, such as robbery, banditry, the creation of illegal paramilitary or armed formations, contract murder, etc. When qualifying these socially dangerous acts, it is important to clearly define the tools and means of committing criminal offences, the objects of criminal offences.

It is known that the subject of criminal offences is essential for the correct qualification of the act. Due to the establishment of the subject of the criminal offence, criminal-legal separation of crimes of one classification group from each other takes place. Notably, the subject may be a mandatory feature of certain criminal offences defined in the CCU (Bereza *et al*., 2020). The analysis of the CCU testified that such items of criminal offences as military supplies and explosives are specified in the articles: Art. 201, 262, 263, 263-1, 410. At the same time, military supplies as objects of criminal offences are prescribed in Articles 264, 267, 269, 411, 412, 413, 414, and explosive substances - in Articles 267, 269, 414[5]. These socially dangerous acts are often a separate link in a chain of well-planned criminal activities related to the illegal trafficking of weapons, ammunition, explosives, or explosive devices (Peretiatko, 2021).

This list of criminal offences is properly correlated with the relevant provisions of the "Protocol against the illegal manufacture and circulation of firearms, their constituent parts and components, as well as their munitions"[6]. Specifically, Article 5 of the Protocol defines intentionally committed actions as criminal offences: illegal manufacture of firearms, their components and munitions; illegal circulation of firearms, their components and munitions; forgery, illegal destruction or alteration of markings on weapons and munitions[7].

Therefore, when committing the acts analysed above, specified in the CCU, the subject of criminal offences

[1]Law of Ukraine No. 5708 "On the Right to Civilian Firearms". (2021, June). Retrieved from http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=72360.
[2]Protocol of the Verkhovna Rada of Ukraine No. 995_792 "On Against the Illicit Manufacturing and Trafficking in Firearms, their Parts and Components, as Well as their Ammunition Supplementing the United Nations Convention Against Transnational Organized". (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/995_792#Text.
[3]Ibidem, 2001.
[4]Order of the Cabinet of Ministers of Ukraine No. 73-p "On the Approval of the Plan of Priority Measures for the Integration of Ukraine into the European Union for 2013". (2013, January). Retrieved from https://www.rnbo.gov.ua/ua/RKMU/320.html.
[5]Law of Ukraine No. 2341-III "Criminal Code of Ukraine". (2001, April). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.
[6]Protocol of the Verkhovna Rada of Ukraine No. 995_792 "On Against the Illicit Manufacturing and Trafficking in Firearms, their Parts and Components, as Well as their Ammunition Supplementing the United Nations Convention Against Transnational Organized". (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/995_792#Text.
[7]Ibidem, 2001.

includes military supplies and explosives. At the current stage, methods of illegal circulation of weapons and military supplies for them are being improved. For this, new high-tech means are used, individual structural elements of weapons are purchased in various places, including ordering delivery from abroad, various means of weapons are used for their transportation (Peretiatko, 2022).

Criminals can, by analogy, use the possibilities of certain technological processes of industrial production of weapons. For instance, in scientific sources, a step-by-step technological process of discharging 23 mm or 30 mm artillery shells is described, which ensures effective extraction of the tracer compound from their cases. In this case, a special installation for burning the tracer compound is used (Neklonsky & Smyrnov, 2022). As for the use of reference information and special literature in the field of weapons science, this issue does not cause any difficulties for criminals. Both special literature and normative documents exist in open access on the Internet (Tolkunov *et al*., 2022).

It should be factored in that pursuant to the international "Protocol against the illegal manufacture and trafficking of firearms", the signatory countries inform each other about the discovered methods of concealing the illegal manufacture of weapons and munitions. Therefore, it is necessary to analyse munitions and explosives as objects of criminal offences[1].

The authors of the commentary of the CCU, M.I. Melnyk & M.I. Havroniuk (2019), define munitions as cartridges for firearms, grenades, explosive parts of rockets, shells, bombs, mines, and other means equipped with an explosive substance, intended to be fired or to cause an explosion. In a broad sense, munitions are considered explosive devices that have industrial production in special organizations, where there is a technological process strictly established by technical documentation. The purpose of such munitions is to cause various degrees of damage to the enemy's manpower, to various objects due to the impressive factors of the explosion.

Based on the conducted empirical research, S.S. Vitvitskyi *et al*. (2021) established that, in practice, law enforcement officers detect cartridges for rifled firearms of various calibres, artillery shells, grenades, and rounds for grenade launchers (62.0%). 6.35 mm calibre cartridges (0.6 %) for shooting from "Browning" pistols, hunting cartridges of 12, 16, 20, 24 mm calibre (1.5 %) are rarely found. In most cases, the subject of criminal offences is ammunition for hand firearms, namely unitary or special cartridges in an assembled and suitable condition for one-time use for their intended purpose (for mechanical damage to targets or signalling). "Special cartridges" should be understood as other types of cartridges (not unitary, without casing) and projectiles with bursting, pyrotechnic or impact charges or their mixture (Vitvitskyi *et al*., 2021). The most popular classification of munitions of criminal origin is their types depending on the type of ammunition and the method of their manufacture (Table 2).

Thus, these are the main types of ammunition for hand firearms, which are the subject of criminal offences during the commission of criminal offences related to the illegal circulation of weapons, the manufacture of ammunition and the use of explosive substances in their composition. It is worth analysing the concepts, types, and properties of explosives, which are the subject of criminal offences when committing criminal offences. As stated in the Departmental Instruction of the Ministry of Internal Affairs of Ukraine[2] explosive substances include chemical compounds that, due to external influence, can self-propagate with a significant rate of decomposition of chemical compounds, form gaseous compounds, and release thermal energy. This refers to "ammonites, ammonals, TNT"[3], as well as "gunpowder, dynamite, nitroglycerin, other chemical compounds that can explode without access to oxygen"[4].

The mass of the explosive substance, the volume where it is placed, determines the power of the warhead or explosive device (Kyrychenko, 2013). Therefore, explosive substances are chemical compounds or their mixtures that can explode under the influence of an external impulse. They are characterized by the speed of the explosive transformation, the heat of the explosion, the composition and volume of gaseous products, their maximum temperature, sensitivity to mechanical and thermal impact and other features, as well as explosiveness. By composition, they are divided into explosive chemical compounds and explosive mixtures; and by appointment – for initiating (primary) and explosive (secondary). During the commission of terrorist crimes, there are cases of the use of plastic explosives (mixtures of blasting agents with plasticized additives) (The International Mine..., 2018).

[1]Protocol of the Verkhovna Rada of Ukraine No. 995_792 "On Against the Illicit Manufacturing and Trafficking in Firearms, their Parts and Components, as Well as their Ammunition Supplementing the United Nations Convention Against Transnational Organized". (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/995_792#Text.

[2]Order of the Ministry of Internal Affairs of Ukraine No. 622 "On the Approval of the Instructions on the Procedure for the Manufacture, Acquisition, Storage, Accounting, Transportation and Use of Firearms, Pneumatic, Cold and Cooled Weapons, Devices of Domestic Production for Firing Cartridges, Equipped with Rubber or Metal Projectiles Similar in their Properties of Non-Lethal Action and Cartridges for them, as well as Ammunition for Weapons, Main Parts of Weapons and Explosive Materials". (1998, August). Retrieved from https://zakon.rada.gov.ua/laws/show/z0637-98.

[3]Ibidem, 1998.

[4]Resolution of the Plenum of the Supreme Court of Ukraine No. 3 "On Judicial Practice in Cases of Kidnapping and Other Illegal Handling of Weapons, Ammunition, Explosives, Explosive Devices or Radioactive Materials". (2002, April). Retrieved from https://zakon.rada.gov.ua/rada/show/v0003700-02.

Table 2. Classification of cartridges for small-arms firearms discovered during the investigation of criminal law violations related to the illegal manufacture of munitions or the use of explosives

Standard munitions of industrial production		**Non-standard (atypical) home-made munitions**	
cartridges of domestic production (combat, sports, and hunting cartridges) (48.37%)	cartridges of foreign production (1.8%)	home-made recycled cartridges (0.09%)	home-made cartridges (0.28%)
Most often found in criminals:			
cartridges of calibre 5.6 mm for rifled sporting and hunting weapons. Designed for shooting from rifles of the Kochetov series "TOZ", designs of Sleptsov, Yelyseev, Denisov of the "MC" series, designs of Dragunov, Samoilov of the "Arrow", "Taiga" series, from combined hunting rifles IZH 65-1, IZH 56-2, IZH 56-3, MC 5-35, MC 30-20, MC 29-03, TOZ-34, Margolin pistols, R-4, MC-M, MC 55-1, MC 2-3, MC 102-1, TOZ-35, TOZ-60, IZH 35, IZH-XP-30, etc. Cartridges of this calibre are also used in recycled firearms	Winchester cartridges of .243 calibre (6.2×52) of factory production in Finland; rifle-machine gun cartridges of "308 WIN" calibre (7.62×51), .308 Winchester, manufactured for use by member states; Mauser cartridges of 8 mm calibre (7.62×54 R), produced in Poland and Germany; 22 LR (long rifle) calibre ring ignition cartridges made in Germany; hunting cartridges "Remington" .221 calibre R "Meteor" (5.6 mm); cartridges of .22 calibre WMR (.22 Winchester Magnum Rimfire), as well as cartridges of .45 calibre (.45 ACP (11.43×23 mm) (Automatic Colt Pistol, .45 calibre – automatic Colt pistol of .45 calibre), produced in the USA	factory-manufactured cartridges rearranged in a home-made way by increasing the powder charge (weighing 0.02-0.04 grams) in the sleeve. These are usually rearranged 4 mm "Flobert" cartridges	cartridges of 9 mm calibre made from capsule shells of noise cartridges of 9 mm calibre R.A. Khall by placing bullet-shaped projectiles made of metal/lead with a diameter of up to 8.1 mm, weighing about 1.5 grams, and a charge of gunpowder weighing 0.12-0.16 grams in the casings; atypical cartridges, made in a home-made way from a factory-made "Zhevelo" type capsule by attaching to it a metal projectile – a lead shot with a diameter of 4.9 mm, weighing 0.472 grams

Source: compiled by the authors based on P. Giverts (2018) and S.S. Vitvitskyi *et al*. (2021)

To commit explosions, criminals use the most common types of explosives: industrially manufactured ones; self-made ones (Kofanov *et al*., 2021a; 2021b). There are certain restrictions on the handling of explosives, specifically, in the event of a mechanical impact or friction, the initiating substances can "trigger". While the other type – blasting explosive substances – do not have great sensitivity to external stimuli (Pashchenko *et al*., 2010).

There are the following types of explosives:

a) ammonium-nitrate – explosive mixtures based on ammonium nitrate. They are mainly used in industrial blasting. Apart from the main component, they may contain nitro compounds (nitroglycerin, TNT, hexane, TEN), combustible materials (aluminum, petroleum oils, etc.), as well as inert fillers. These explosives include amatols, ammonals, ammonites, dynamons, granulites, etc.;

b) blasting explosives – a type of explosives that have a high detonation speed (8.5 km/s). These include hexogen, octogen, tetral, ticranic acid, etc. They are used in the manufacture of various cartridges and explosive devices;

c) priming explosives – a type of explosive substances that are highly sensitive to simple initial impulses (shock, friction, electric spark, pricking, etc.). They are used to initiate explosive transformations in charges of other explosive substances. These include mercury, lead azide, tetrazene, etc. (The International Mine…, 2018).

Therefore, a common feature of explosives is the occurrence of chemical explosion energy, the one-time use of the explosive. The author considered the main types of explosive substances that are the subject of criminal offences during the commission of criminal offences related to the illegal circulation of weapons, the manufacture of military supplies and the use of explosives.

The main feature of the investigation of criminal offences in which ammunition or explosives were the subject of criminal offences is the mandatory participation of weapons experts in the procedural actions (37.1% of the surveyed investigators noted the involvement of such specialists in all cases of investigation; 42.3% emphasized their involvement is rarer than there actually was a corresponding need and further expert research of the objects they seized (31.2% of the surveyed respondents emphasized the importance of such objects for identifying and recording traces of a crime; 36.9% – for identifying other evidence; 38.2% – for identifying operational investigative information) (Table 1).

As S. Peretiatko (2022) points out, it is possible to establish the pertinence of the relevant items to munitions or explosives only by appointing appropriate forensic examinations: ballistic, trace, explosive, etc. At the same time, shortcomings were found in the appointment of these examinations during the investigation of criminal offences related to the illegal manufacture of ammunition or the use of

explosives – 34.1% of the interviewed investigators named the incorrect wording of the questions as the reason for the low-quality examination; 28.9% – provision of unsuitable samples; 24.1% – failure to provide necessary materials; 15.3% – provision of items unsuitable for research; 14.1% – incomplete assignment of tasks to the expert (Table 1).

At the same time, knowledgeable individuals in the field of ballistics and explosives necessarily take part in procedural actions, specifically, inspection of the scene of the incident, regarding the illegal manufacture of military supplies and the use of explosives. This rule is related to ensuring the safety of participants in investigative actions, the need for a professional description of seized objects, their placement in special packaging and transportation for forensic examinations. In criminal proceedings regarding the illegal manufacture of ammunition or the use of explosives, a ballistics examination is prescribed. This is an examination of weapons and the traces and circumstances of their use (namely, its subspecies: examination of ammunition for firearms), examination of materials, substances and products, or forensic explosives examination, since only these examinations establish the subject of a criminal offence during the investigation of relevant criminal offences.

Discussion

The study conducted a scientific analysis and comparison of the definition of illegal actions related to the circulation of weapons, the manufacture of military supplies and the use of explosives, which are contained in international documents[1], ratified by many countries of the world, and those concepts contained in the CCU[2] and departmental sub-legislative acts[3] and departmental sub-legislative acts.

Based on the study of the modern practice of investigating the illegal manufacture of military supplies and the use of explosives, the shortcomings of the organization of the work of investigative bodies at the scene of the incident and the difficulties in conducting forensic examinations of the discovered objects were identified. The most common shortcoming of organizing a visit to the scene of an incident related to the illegal manufacture of military supplies or the use of explosives was cited by most of surveyed respondents as logistical shortcomings related to the availability of special transport, modern equipment, and consumables. Furthermore, visits to the crime scene are often delayed. In part, this situation can be explained by the frequency of artillery shelling and bombing of specific objects, the repetition of fire damage to the area where the investigative-operational group is already working. The study of the forensic practice of conducting research on munitions and explosives confirms the data of S. Peretiatko (2022) about the presence of certain shortcomings in the relevant examinations: material and financial reasons, the duration of the research, etc.

On the example of the description of munitions and explosives, such a forensic regularity was revealed as the connection between separate elements of the forensic characteristics of illegal arms trafficking, manufacture of munitions, use of explosives (Pashchenko *et al*., 2010; Vitvitskyi *et al*., 2021; Peretiatko, 2022). The objects of the criminal offence are closely related to the person of the criminal, the method of committing the criminal offence and the "trace picture" of the crime. The authors proved the importance for criminal proceedings of establishing these objects of criminal trespass to investigate the illegal manufacture of military supplies and the use of explosives. Determining and considering the signs and properties of munitions and explosives affects the correct criminal-legal qualification of a committed socially dangerous act. To appoint a forensic examination of seized items of weapons, it is necessary to establish their classification group, including receiving appropriate consultations from specialists in explosives or ballistics. Specialists in the field of weapons science and forensic explosives must be involved in every inspection of the scene related to the illegal manufacture of munitions or the use of explosives, who will ensure the professional and safe handling of the relevant dangerous objects and substances.

Conclusions

This study examined the objects of criminal offences – munitions and explosives, which become the subject of encroachments by offenders in connection with the illegal circulation of weapons, the manufacture and use of their components. When handled illegally, these objects cause damage and destruction of surrounding objects, cause bodily harm to a person or cause their death, and introduce harmful residues into the ecological environment.

Implementing the provisions of international treaties in the field of illegal arms and ammunition trafficking, the Criminal Code of Ukraine makes provision for criminal liability for collective and individual illegal

[1]Protocol of the Verkhovna Rada of Ukraine No. 995_792 "On Against the Illicit Manufacturing and Trafficking in Firearms, their Parts and Components, as Well as their Ammunition Supplementing the United Nations Convention Against Transnational Organized". (2001, May). Retrieved from https://zakon.rada.gov.ua/laws/show/995_792#Text.
[2]Law of Ukraine No. 2341-III "Criminal Code of Ukraine". (2001, April). Retrieved from https://zakon.rada.gov.ua/laws/show/2341-14#Text.
[3]Order of the Ministry of Internal Affairs of Ukraine No. 622 "On the Approval of the Instructions on the Procedure for the Manufacture, Acquisition, Storage, Accounting, Transportation and Use of Firearms, Pneumatic, Cold and Cooled Weapons, Devices of Domestic Production for Firing Cartridges, Equipped with Rubber or Metal Projectiles Similar in their Properties of Non-Lethal Action and Cartridges for them, as well as Ammunition for Weapons, Main Parts of Weapons and Explosive Materials". (1998, August). Retrieved from https://zakon.rada.gov.ua/laws/show/z0637-98.

actions involving ammunition and explosives. The most common is prosecution for the smuggling of military supplies and explosives, as well as their theft, appropriation, illegal manufacture or possession of them by fraudulent means or by abuse of official position. As for war supplies as the subject of criminal trespass – their careless storage, destruction or damage or loss is committed. Criminals violate the rules of handling explosive substances, their illegal transportation. Presently, to investigate the illegal manufacture of munitions or the use of explosives, it is important to classify them, highlighting the properties and signs of the relevant objects and substances.

Combat supplies for hand firearms in the sphere of illegal circulation are divided into the following types: 1) cartridges of industrial production (domestic or foreign production); 2) home-made military supplies (remanufactured and home-made cartridges). At the current stage, during the commission of war crimes, large-calibre cartridges of 14.5 mm calibre and larger, which are converted into armour-piercing, incendiary, or tracer bullets, fall into the scope of criminal proceedings. During the illegal handling of weapons, ammunition, explosives, criminals use explosives, which are classified into: industrial and home-made; ammonium-nitrate, initiating, and blasting explosives.

The definitions and classification of munitions and explosives provided in the article allow for differentially establishing a particular object as the subject of a criminal offence, clarifying its characteristics with the mandatory use of the special knowledge of the experts involved, and establishing other circumstances of the subject of evidence in criminal proceedings. The conclusion regarding the pertinence of an object (or substance) to a munition, an explosive substance is formed based on the results of forensic ballistic examination of munitions to weapons, research of materials, substances and products, forensic explosives examination.

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Conflict of Interest

None.

References

[1] Amaral, M.A., Yasin, S., Gibson, A.P., & Morgan, R.M. (2020). Sampling of explosive residues: The use of a gelatine-based medium for the recovery of ammonium nitrate. *Science & Justice,* 60(6), 531-537. doi: 10.1016/j.scijus.2020.07.007.

[2] Bereza, Yu.M., *et al.* (2020). *Criminal liability for illegal arms trafficking.* In S.A. Shalhunova (Eds.). Dnipro: Dnipropetrovsk State University of Internal Affairs.

[3] Carson, J.V., Dierenfeldt, R., & Fisher, D. (2022). Country-level firearm availability and terrorism: A new approach to examining the gun-crime relationship. *Journal of Research in Crime and Delinquency,* 59(4), 449-486. doi: 10.1177/00224278211046255.

[4] Christensen, J. (2019). Arming the outlaws: On the moral limits of the arms trade. *Political Studies,* 67(1), 116-131. doi: 10.1177/0032321718754516.

[5] Cox, M. (2003). A multidisciplinary approach to the investigation of crimes against humanity, war crimes and genocide: The inforce foundation. *Science & Justice,* 43(4), 225-227. doi: 10.1016/S1355-0306(03)71781-X.

[6] Exall, A., Goddard, I., & Bandey, H. (2022). Preliminary investigations using recover latent fingerprint technology on unfired ammunition and fired cartridge cases. *Science & Justice,* 62(5), 556-568. doi: 10.1016/j.scijus.2022.08.001.

[7] Giverts, P., Sofer, S., Solewicz, Y., & Varer, B. (2020). Firearms identification by the acoustic signals of their mechanisms. *Forensic Science International,* 306, article number 110099. doi: 10.1016/j.forsciint.2019.110099.

[8] Giverts, P.V. (2018). Forensic investigation of AirSoft rifles, modernized for shooting with 5.56x45mm cartridges. *Theory and Practice of Forensic Examination and Criminology,* 18, 301-308. doi: 10.32353/khrife.2018.34.

[9] Grassi, S. (2021). Protocol against the illicit manufacturing of and trafficking in firearms, their parts and components and ammunition. *Brill Research Perspectives in Transnational Crime*, 3(4), 58-77. doi: 10.1163/24680931-12340023.

[10] Kahane, L.H. (2020). State gun laws and the movement of crime guns between states. *International Review of Law and Economics,* 61, article number 105871. doi: 10.1016/j.irle.2019.105871.

[11] Kleck, G. (2021). Compliance with universal background check gun laws. *Journal of Crime & Justice,* 44(4), 414-418. doi: 10.1080/0735648X.2020.1815555.

[12] Kofanov, A.V., *et al*. (2021a). *Automated information and reference system "Inspector-criminalist".* Kyiv: National Academy of Internal Affairs.

[13] Kofanov, A.V., Yusupov, V.V., & Mykhalchuk, T.V. (2021б). *Legal regulation of weapons circulation: History, current state and development prospects.* Kharkiv: Publishing house "Pravo".

[14] Kyrychenko, O.A. (2013). *Basic signs, concepts and classification of criminal weapons.* Mykolaiv.

[15] Melnyk, M.I., & Havroniuk, M.I. (Eds.). (2019). *Scientific and practical commentary on the Criminal Code of Ukraine*. Kyiv.
[16] Neklonskyi, I.M., & Smyrnov, O.M. (2022). Optimization of the technology of firing tracers from small-caliber artillery shells. *Problems of Emergency Situations,* 2(36), 349-362. doi: 10.52363/2524-0226-2022-36-25.
[17] Nieto, C.C. (2023). Illegal arms trading in Europe after the new directive on the control of the acquisition and possession of arms. *Revista Juridica De Castilla Y Leon,* 59, 7-32.
[18] Nishshanka, B., Shepherd, Ch., Koene, L., Punyasena, M.A., & Ariyarathna, R. (2022). An empirical study on the close-range post-ricochet orientation of AK bullets (7.62 mm × 39 mm). *Science & Justice,* 62(5), 569-581. doi: 10.1016/j.scijus.2022.08.004.
[19] Nishshanka, Lt. C.B., Shepherd, Ch., Ariyarathna, M.R., Weerakkody, L., & Palihena, Ja. (2021). An android-based field investigation tool to estimate the potential trajectories of perforated AK bullets in 1 mm sheet metal surfaces. *Forensic Science International: Digital Investigation,* 38, article number 301267. doi: 10.1016/j.fsidi.2021.301267.
[20] Pashchenko, V.I. (2010). *Means and methods of countering terrorist acts committed with the use of explosive devices.* Kyiv.
[21] Peretiatko, S. (2021). Method commission of illegal manufacture, processing or repair of firearms or fraud unlawful removal or changes its labelling or illicit manufacture of ammunition, explosives or explosive devices. *Scientific Journal of the National Academy of Internal Affairs,* 26(4), 22-30. doi: 10.33270/01211214.22.
[22] Peretiatko, S.A. (2022). Problems of appointing and conducting an examination during the investigation of criminal offenses provided for by Art. 263-1 of the Criminal Code of Ukraine. *Forensics and Forensic Examination,* 67, 114-123. doi: 10.33994/kndise.2022.67.13.
[23] Pytlak, A. (2020). Are arms trade treaty meetings being used to their full potential? *Global Responsibility to Protect,* 12(2), 156-177. doi: 10.1163/1875984X-01202003.
[24] Queirós, S.S., Lühe, B., Silva-Bessa, A., Brito-da-Costa, A.M., Caldas, I.M., Dawson, L., & Madureira-Carvalho, Áu. (2023). Lipidic compounds found in soils surrounding human decomposing bodies and its use in forensic investigations - A narrative review. *Science & Justice,* 63(3), 303-312. doi: 10.1016/j.scijus.2023.02.001.
[25] Ristova, M., Skenderovska, M., Skulic, Z., & Brożek-Mucha, Z. (2023). A study of dispersion of gunshot residue from a frequently used Serbian ammunition cal. 7.65 mm to support selected aspects of casework in North Macedonia. *Science & Justice,* 63(3), 396-405. doi: 10.1016/j.scijus.2023.04.004.
[26] Samoilenko, O., Bereziuk, V., Zabolotna, O., Chornyi, A., & Adamchuk, O. (2022). SWOT analysis to assess the threat of illegal arms trafficking on the Ukrainian border with the European Union countries in the context of the war. *Cuestiones Politicas,* 40(75), 694-716. doi: 10.46398/cuestpol.4075.42.
[27] Sandeep, K.V., Bhawara, H.S., & Rajesh, M. (2022). Overview of nano enabled sensor for analysis of explosive substances. *International Journal of Science and Research Archive*, 07(02), 487-500. doi: 10.30574/ijsra.2022.7.2.0299.
[28] Shumeiko, T., Kurkova, K., Yarova, R., Nemesh, P., & Zubko, O. (2021). Legislative prerequisites for the classification of arm. *Amazonia Investiga,* 10(43), 168-174. doi: 10.34069/AI/2021.43.07.17.
[29] Smyrnov, O.M., & Tolkunov, O.M. (2020). Increasing the efficiency of disposal of OZM-72 anti-personnel fragmentation mines*. Problems of Emergency Situations,* 2(32), 199-214. doi: 10.5281/zenodo.4400198.
[30] Stavrianakis, A. (2019). Controlling weapons circulation in a postcolonial militarised world. *Review of International Studies,* 45(1), 57-76. doi: 10.1017/S0260210518000190.
[31] The International Mine Action Standards (IMAS) are the standards in force for all mine action operations. (2018). Retrieved from https://www.mineactionstandards.org/.
[32] Thurner, P.W., Schmidt, C.S., Cranmer, S.J., & Kauermann, G. (2019). Network interdependencies and the evolution of the international arms trade. *Journal of Conflict Resolution,* 63(7), 1736-1764. doi: 10.1177/0022002718801965.
[33] Tolkunov, I.O., Ivanets, H.V., Popov, I.I., & Smyrnov, O.M. (2022). Improvement of the method of calculating charges of explosives for the destruction of emergency buildings. *Problems of Emergency Situations,* 1(35), 76-95. doi: 10.52363/2524-0226-2022-35-6.
[34] Unified report of the Prosecutor General's Office on criminal offenses for January-December 2021. (2021). Retrieved from https://www.gp.gov.ua/ua/posts/pro-zareyestrovani-kriminalni-pravoporushennya-ta-rezultati-yih-dosudovogo-rozsliduvannya-2.
[35] Unified report of the Prosecutor General's Office on criminal offenses for January-December 2022. (2022). Retrieved from https://www.gp.gov.ua/ua/posts/pro-zareyestrovani-kriminalni-pravoporushennya-ta-rezultati-yih-dosudovogo-rozsliduvannya-2.
[36] Unified report of the Prosecutor General's Office on criminal offenses for January-December 2023. (2023). Retrieved from https://www.gp.gov.ua/ua/posts/pro-zareyestrovani-kriminalni-pravoporushennya-ta-rezultati-yih-dosudovogo-rozsliduvannya-2.

[37] Vitvitskyi, S.S., Volobuieva, O.O., & Voloboiev, A.O. (2021). *Methods of investigation of illegal handling of weapons and ammunition.* Kyiv: Dakor Publishing House LLC.
[38] Voloboiev, A.O. (2019). Illegal handling of weapons and ammunition: Theoretical and legal aspect. In *Problems and prospects of the development of modern science in the countries of Europe and Asia: Proceedings of the XIII International Scienctific and Practical Internet conferences* (pp. 121-123). Pereiaslav-Khmelnytskyi.
[39] Voluiko, O.M., Romashko, O.M., & Lehenkyi, V.V. (2020). Peculiarities of the criminal law counteraction to the illegal circulation of weapons, ammunition and explosives in the activities of law enforcement agencies of Ukraine. *Legal Bulletin,* 16, 233-240. doi: 10.32850/lb2414-4207.2020.16.31.
[40] White, R. (2020). Mission of forensic science international: Animals and environments. *Forensic Science International: Animals and Environments*, 1, article number 100001. doi: 10.1016/j.fsiae.2020.100001.
[41] Yavuz, H. (2020). Certification authenticity and design requirements in small arms munitions production and advances in composite munitions. *International Journal of Engineering Research and Development*, 12(1), 98-105. doi: 10.29137/umagd.500569.

Бойові припаси та вибухові речовини як предмети злочинних посягань під час учинення кримінальних правопорушень

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Анотація

За відсутності в Україні базового закону про зброю та бойові припаси до неї в правозастосовній діяльності виникають певні труднощі з кваліфікацією діянь правопорушників у сфері незаконних обігу зброї, виготовлення бойових припасів і використання вибухових речовин. Метою статті є дослідження таких предметів озброєння, як бойові припаси та вибухові речовини, які стають предметом посягань правопорушників у зв'язку з незаконними обігом зброї, її складових, їх виготовленням та використанням. У статті використано історико-правовий, порівняльно-правовий, системно-структурний, статистичний і соціологічний методи. Класифіковано бойові припаси і вибухові речовини з метою встановлення конкретного об'єкта як предмета злочинного посягання; визначено їх криміналістично значущі ознаки та властивості. Розкрито роль спеціалістів-балістів, спеціалістів-вибухотехніків та інших фахівців під час огляду місця події, розслідування незаконного обігу зброї, виготовлення бойових припасів і використання вибухових речовин. Доведено, що бойові припаси та вибухові речовини мають тісний взаємозв'язок з особою злочинця, способом учинення кримінального правопорушення, слідовою картиною. Удосконалено теоретичні положення щодо властивостей та ознак бойових припасів і вибухових речовин. Розроблено криміналістичні рекомендації щодо дій правоохоронців з бойовими припасами та вибуховими речовинами в кримінальному провадженні. Набули подальшого розвитку рекомендації щодо вилучення та упакування бойових припасів і вибухових речовин як речових доказів. Практичне значення полягає в з'ясуванні властивостей та ознак бойових припасів і вибухових речовин, що дозволяє на початковому етапі розслідування встановити ці предмети; правильно проводити дії з їх виявлення, фіксації, вилучення, упакування; здійснювати належну кримінально-правову кваліфікацію вчиненого правопорушення

Ключові слова:

зброя; боєприпаси; небезпечні речовини; незаконний обіг зброї; незаконне виготовлення бойових припасів