

УДК 902(477.83)

**VERKHOTUROVA M.**

<https://orcid.org/0000-0002-9172-2310>

<https://doi.org/10.33577/2313-5603.32.2019.181-192>

### **GUNS OF THE 14-18th CENTURIES IN THE MODERN MUSEUM EXPOSITION**

Rapid information development of society requires new approaches to the exposition of artillery of the 14-18th centuries in Ukrainian museums. The article analyses a number of problematic issues that arise when exposing cannons of the 14-18th centuries and suggests possible solutions. It considers some problems of cleaning and taking care of cannons depending on their material and condition. The possible ways to fill the exhibition using the latest technologies to create an interactive exhibition and integrate the history of artillery in the modern information space were suggested in the article.

*Keywords:* guns of the 14-18th centuries, exposing weapon, military history museum, exposition, interactive exposition.

Relevance of the problem. The historical circumstances of the development of the study of weapons as a science in Ukraine have become one of the reasons for the gaps in the content and construction of museum weapon expositions. The body of scientific literature in the field of artillery research accumulated over the past decade makes it possible to fill these gaps. Rapid information development of society and the growth of interest in military history demand new approaches to the exposition of artillery of the 14-18th centuries in Ukrainian museums. Pieces of artillery of the 14-18th centuries bear artistic, historical, ethnographic, cultural, antique and scientific value and are subject to preservation and protection according to the current legislation of Ukraine that also puts the corresponding requirements to their preservation and exposition.

The purpose of the article is to analyze some problematic issues that arise today in museums when exposing and storing cannons of the 14-18th centuries and to find possible solutions.

Presentation of the main material. The study of weapons as a science did not develop in the Soviet period of history of Ukraine

---

**Верхотурова Мар'яна Андріївна**, кандидат історичних наук, доцент кафедри гуманітарних наук Національної академії сухопутних військ імені гетьмана Петра Сагайдачного, м. Львів.

© Верхотурова М. А., 2019

because of the influence, or even pressure, of political factors. A small number of works of Ukrainian scientists of that period were published only due to the enthusiasm and efforts of their authors (*Сидоренко, 1958: 99-118; Сидоренко, 1978: 78; Апанович, 1969: 222*). At best, the weapons were studied as archaeological material. There are no complex scientific works on the history of artillery of the Ukrainian lands of this period. Foreign scientific literature, which could at least partially fill the gaps in knowledge of the history of the development of artillery as a weapon was not available. The ideological focus of Soviet works on this topic created a distorted historical picture of the artillery development in Ukraine. This state of affairs was reflected in museum expositions, which should be based on professional scientific research. As a result, there often occurred significant errors in attribution of cannons or absolutely incorrect identifications of their nature and type, time frame, geographical origin, their owners, which caused further errors as a consequence. All this made museum expositions historically meaningless, "dead" for an observer, pseudo-scientific. And, unfortunately, we state a certain prevalence of this phenomenon even today.

The establishment of the study of weapons as a science in Ukraine occurs at the present stage of accumulation of the Ukrainian military and historical historiography. This process is reflected in the growth in the number and quality of scientific papers, international scientific conferences and seminars, the presence of a permanent platform for discussion on the Internet, the introduction of relevant disciplines in the educational process. This creates a brand new basis for the construction of museum weapon exhibitions and creation of their content.

The rapid development of information technology requires museums to take a brand new approach to the artillery exposition. In the twentieth century an observer had to visit a museum exhibition to learn about it, but now, in the twenty-first century, it is possible to see an exhibition from home by using the Internet. This poses new challenges to the museum and opens up new areas of work. The task is to fill the site with information that will satisfy the needs not only of

amateurs, who are interested in the history of artillery, but also professional researchers. It would be expedient to post on the site a standard form for each cannon, which would contain basic information about its type, material and method of production, date or time frame of production, region of origin, specification of the main metric measurements of the gun barrel. If possible, information about the author of the cannon, its owner and events it has participated in should also be included. Photos should clearly reflect the architectonics and design features of the gun barrel of the cannon and, if available, the epigraphy and ornament. It is possible to use graphic images-blueprints, which significantly expand the content of the site for a professional researcher. Such an electronic catalog should become the calling card of the active exhibition, reflecting its content as favorably as possible, encouraging to visit the museum (*Берхотурова, 2017: 25-30*).

Attractiveness and magnetism are two important qualities of an item of the museum exposition (*Баїдзєр, 2005: 357-358*). In our opinion, to obtain these characteristics in the exhibition, the item must be successfully presented to an observer. Preparation of a cannon of the 14-18th centuries for exposure requires procedures to align the gun barrel of the cannon properly.

If the cannon is archaeological material, then there is a need of professional cleaning, which can be carried out by the restorer who can professionally preserve and conserve the gun barrel. Unprofessional cleaning, at best, will not bring the desired result, and, at worst, will have irreparable consequences like mechanical and chemical damage to the cannon, which will not only lead to its unappealing appearance, but also to its destruction. A professional restorer should also decide if there is a need to coat the cannon with tannin to preserve its gun barrel. This problem has many aspects, so we will leave it for a separate article.

A problem of unprofessional cleaning from household dust and other dirt or even ignoring the cleaning is quite common. Meanwhile, each cannon requires an individual approach depending on the

material of production, state of preservation and contamination. In general, it is very important to protect the exposed cannon from corrosion and other possible damage, which requires the implementation of preventive measures.

Artillery of the 14-18th centuries, though not in use today, still remains a weapon, and therefore requires appropriate cleaning. To take care of iron and cast-iron cannons one must use special care products-gun oils that protect the barrel from moisture, thereby creating corrosion protection and giving it a presentable appearance in the exhibition. One should begin cleaning by cleaning the bore. For this purpose it is necessary to use the rag on the ramrod fitting the bore size. The rag needs to be soaked in alkaline grease beforehand. After that one needs to clean the cannon with a hard pile brush, soaked in alkaline oil and then wipe it dry with a cloth. After cleaning the bore, it is necessary to proceed to cleaning of the outer surface of the cannon and wipe it with a cloth soaked in alkaline oil. If necessary, a soft pile brush can be used. After the cleaning procedure, a thin layer of gun oil must be spread over the barrel (*Sauer 101. Руководство по эксплуатации и указания безопасности, 2013: 27*).

When choosing a gun oil for coating, it is necessary to take into account the conditions of the environment where the gun will be located. For outdoor exposition, it is expedient to use preservative oil with revitalizant, which provides protection at low temperature conditions of the environment (up to  $-60^{\circ}\text{C}$ ). If the exhibit is indoors and there are no abrupt temperature fluctuations, then it is alright to use any available neutral gun oil. For large-caliber cast-iron cannons it is expedient to coat the barrel with a thin layer of gun grease.

To coat the gun barrel, one must not use products not intended for the weapon care. Those products may dry unevenly, shrink, drain or become an adhesive film for build-up of dust and other contamination that will not look appealing and will create additional need for cleaning. A cannon of the 14-18th centuries is a piece of the art of weapons of the past centuries, which a priori puts certain requirements for taking care of it. It is absolutely unacceptable to use acrylic, vinyl,

latex or silicate paints or other household or industrial materials to coat the gun barrel. We believe that such actions not only lead to not appealing appearance, but also contradict the law of Ukraine "Law on Museums and Museum Business" (*Конституція України Закон України «Про музеї та музейну справу» № 1709-VI від 05.11.2009*). It is important not only to protect the cannon from corrosion, but also to preserve its original appearance. We emphasize the need of periodical decontamination during the exposition, especially if the exhibition is long-term.

Bronze artillery of the 14-18th centuries requires the implementation of other care measures. The particularities of cleaning of bronze cannons derive from the properties of the production material. The presence of copper in the bronze alloy causes a natural emergence of patina on the cannon. Patina which covers a cannon can be noble or wild. Patina is called noble when it has enamel shine and hardness and accurately repeats the contours of the item. It comes in various shades, from light blue and green to reddish, brown and sometimes almost black. The color and the structure of the patina depend on the bronze alloy and the storage conditions of the cannon, and, therefore, on the impact of different factors on the gun barrel. There is no need to clear the cannon from the noble patina as this coating gives the bronze an exquisite look and is a natural protective material. The patina that coats the metal by "getting into it" and destroying its structure is called wild. It usually occurs when the cannon has been in the ground for a long time. In order to clear the gun barrel from the wild patina, it is necessary to turn to a proficient restorer instead of dealing with this phenomenon on one's own. (*Фармаковский, 1935: 46-57*).

It is quite common to apply the artificial patina to bronze objects to give them a more "attractive" appearance. Such procedures are considered inappropriate.

Bronze gun barrels were more expensive, more reliable in a battle, gave their owners a higher status, and often acquired shapes of artistic works of foundry art. The owners, trying to perpetuate their names and

valors. left some monograms, coats of arms, and oaths on them. Such cannons became collectibles back in the era of their suitability in combat (*Волкау 2015: 188*). When constructing an exhibition, it is necessary to inform an observer as much as possible about the epigraphy, markings, coats of arms, the content of inscriptions, etc., represented on the gun barrel. This will portray a specific gun as a "participant" of various historical events and personalize the object.

The cannons of the 14-18th centuries are the representatives of weapon and blacksmith craft as well as foundry art, that reflect the culture of application and technical development of weapons in a particular region and enable a researcher to track the technological level of production and the skills of gunsmiths. Because of the inscriptions, oaths, coats of arms or images on the gun barrel, the cannon often reflected its owner's worldview, which makes it an informative source of scientific research.

To get the observer greatly interested in the history of the development of the artillery, it is important to give some historical context to the exhibited cannons. When creating an exposition, it is advisable to divide the exhibits into chronological and typological groups (*Вайдахер 2005: 368*).

When constructing the exposition, the question arises: how to demonstrate a cannon to the observer in the best way? Each type of the artillery of the 14-18th centuries had its own specific purpose, and, thus, its own means of application. Devices for firing and transportation were an integral part of this type of weapons. Unfortunately, depending on the type and historical period, not all wooden gun stocks, gun carriages, open horse-drawn carriages, tripods, etc., have been preserved to the present day. Of course, the best option is to expose the cannon on its "native" carriage – on a stock or on an open horse-drawn carriage, etc.). An alternative way is to reconstruct this component paying attention to the type of the gun barrel and the historical period of the origin of the cannon . This practice is quite common in many museums around the world (*Веселов, Карлина 2016: 97-110*). This creates a "complete picture"

and gives the observer the most comprehensive understanding of what the cannon looked like when it was used. We emphasize the fact that the reconstruction must be scientifically sound.

A possible solution to the problem is to use stands during the exposition of the cannon. In our opinion, it is important not to highlight this technical detail of the exposition. A neutral color that does not draw the attention of the observer will be appropriate. The size of the stand has to be compliant with the size of the gun barrel, so that it firmly supports the cannon and does not stand out. The material for the production ought to be chosen depending on the size and weight of the cannon – wood or metal, besides, it is necessary to take into account where exactly the cannon will be exhibited – indoors or outdoors.

Essential attributes of the artillery of the 14-18th centuries in the historical period of its use were charges for firing, such as stone, iron or lead round shots, bombs, charged particles, etc., gun powder, linstocks, quadrants, pritchels, and other items for the cannon use. If such items are available in the holdings of the museum, it would be optimal to use them to create a holistic image of the exhibited cannon.

As one of the possible options of the information supplement of the exhibition, we suggest placing a full-scale model or an image of a sectional view of a charged powder chamber that will allow the observer to see what is inside. During the construction of the exposition it will be expedient to acquaint the visitor with the tactical and technical characteristics of the cannon. To do this, one can use both traditional means, such as labeling, as well as modern ones, for example, multimedia boards with demonstration of videos, QR codes.

The challenges that museums face in the era of the information society, create new requirements for the demonstration of weapons where new technologies should be applied, which will integrate the museum exhibition of the ancient artillery into the present. To achieve this goal, it is possible to use 3D-printed models of cannons, which the observer will be able to "charge", and try to "attach them to firing" (*Verkhoturova 2016: 45-47*). Such interactivity of the cannon will

contribute to the understanding of the use of the artillery in the 14-18th centuries, significantly increasing the level of content of the exhibition and popularizing it.

It would be also expedient to conduct a virtual demonstration of artillery of the 14-18th centuries that was used during firing. 3D scanning will create a virtual model of the exposed cannon while the corresponding software will reproduce the process of charging and firing the cannon. This will contribute to the interest of the observer, form an understanding of the historical development of the artillery as a weapon that has become a powerful force on the battlefield in one century. It should be noted that such a virtual reconstruction ought to be based on scientific research and correspond to historical realities in order to supply a visitor with truthful information.

A quite common practice in the Ukrainian museums today is the use of copies and replicas of gun barrels, produced nowadays in the style of "antiquity". We consider it expedient to indicate the fact that such exhibits are not original. And, again, it would be worthy of telling the observer what historical facts and sources were used by the authors of the idea to popularize the artillery of the past. Not to mention the historical justification for the appearance of such an exposition in the premises of the castle, the palace or the fortress. It should be mentioned that the appearance of such cannon "copies" is not a new phenomenon and traces its roots back to the 19th century. (*Мальченко 2009: 165-168*). We emphasize the need to inform the observer about the origin of such an item in the exhibition with an indication of the time of the production.

One of the important indicators of the development of the state is the level of technical development of its weapons. An important indicator of the cultural development of the nation is the attitude to its historical past, the ability to respect and praise it. The history of weapons and material culture is one of the most important forms which clearly demonstrates the roots of the state-shaping processes and the greatness of the country, and is an essential factor that shapes the national consciousness. The history of artillery of the 14-18th centuries is a history of great victories and crushing defeats of

outstanding commanders and their armies. Artillery is the god of war on the battlefield. Building a museum exposition one has to demonstrate the artillery of the 14-18th centuries as a weapon which became the driving force for fundamental changes not only in the tactics and strategy of warfare, but which also contributed to the significant development of fortifications. Demonstrating pieces of artillery it is crucial to try to transfer its greatness as a powerful weapon of its time.

The task of modern Ukrainian museums is a professional reflection of the history of artillery development in Ukraine.

Conclusions. Analysis of the state of the cannons in the Ukrainian museums has showed that there is a number of problematic issues that need to be addressed. Usually, exhibitions of the artillery are long-term, sometimes expositions remain unchanged for decades, not giving a visitor new scientific knowledge which has been accumulated since its creation. Over the past decade, the modern Ukrainian study of weapons has developed a sufficient scientific base, which creates a brand new basis for the content of exhibitions of weapons in museums. The article contains recommendations on the content of the exhibition. This article also offers the possible ways of the technical solution to present the visitor with the information about the cannons of the 14-18th centuries with the help of the latest technologies applied by the European museums.

In connection with the duration of expositions of the artillery of the 14-18th centuries, there are other issues that need to be addressed. Cannons, like all firearms, need periodic cleaning from household pollution. It is important to distinguish between the concept of restoration, which can be carried out only by a professional restorer, and the concept of cleaning – a procedure that can be carried out by a museum worker. The paper deals with the problems of taking care of the cannons and cleaning them from household dirt, depending on the material of production and the state of preservation. Recommendations have been developed for the procedures that need to be carried out in the preparation of the gun barrel for exposure and in the process of its implementation.

Modern military-historical museums of Ukraine have rich funds and should develop in accordance with the standards of the leading countries of the world, offering visitors a modern information-filled exhibition using new technologies. The problem of preserving and exposing of the artillery in museums is multifaceted and requires further research for professional solutions to problematic issues.

### Використані посилання

Sauer 101. *Руководство по эксплуатации и указания безопасности*. 2013. Isny im Allgäu, С.27.

Verkhoturova M. 2016. The model of the wooden gunstock of hand held short barrel bombard in late 14 early 15th century from Lviv History museum collection. *Матеріали VI міжнародного молодіжного форуму «Litteris et artibus»*. Львів, С.45-47.

Апанович О. 1969. *Збройні сили України першої половини XVIII ст.* Київ, с. 222.

Верхотурова М. 2017. Проблеми збереження та експонування артилерії XIV–XVIII ст. в музеях. *Історико-культурні студії*. Львів, С. 25-30.

Веселов Ф., Карлина Т. 2016. Экспозиция открытого хранения вооружения и военной техники военно-исторического музея артиллерии, инженерных войск и войск связи: история и предшественники. *Вопросы музеологии*. 2 (2016). С.-Петербург, С. 97-110.

Волкау М. 2015. *Артилерыя Нясвіжскага замка*. Мінск, с. 188.

*Друга міжнародна зброєзнавча конференція: тези доповідей*. Київ, 16-18 травня, 2016. с.84.

Конституція України. *Закон України «Про музеї та музейну справу» № 1709-VI від 05.11.2009.* : прийнята на п'ятій сесії Верхов. Ради України 28 черв. 1996 р. – Київ: ВВР, 2010, № 5, ст. 45.

Мальченко О. 2009. *Орнаментована артилерія на Правобережній Україні (XV–XVIII ст.)*. Київ. с. 284.

Сидоренко В. 1958. З історії селянсько-козацької артилерії часів визвольної війни українського народу 1648–1654 рр. *Праці Київського історичного музею*. Київ. Вип. 1. С. 99-118.

Сидоренко В. 1978. Зброя місцевого виробництва на Україні епохи визвольної війни. *Український історичний журнал*. Київ. № 9. С. 75–80.

*Третя міжнародна зброєзнавча конференція: тези доповідей*. 2018. Київ, 12-14 червня, с. 78.

Фармаковский М. 1935. *Очерки по методике технологического исследования реставрации и консервации древних металлических изделий*. Выпуск 130. ОГИЗ. Москва-Ленинград, с. 122.

Хорев В. 2011. *Антикварное оружие. Экспертиза и реставрация*. Ростов-на-Дону, с. 425.

Четверта міжнародна зброєзнавча конференція. [онлайн] Доступно: <<http://zbrojeznau.com/>> [Дата звернення 18 липня 2019]

## References

Apanovich O. 1969. Armed Forces of Ukraine of the First Half of the 18th Century Kyiv, 222 p. (ukr).

Farmakovskiy M. 1935. Essays on the method of technological study of the restoration and conservation of ancient metal products. Issue 130. OGIZ. Moscow-Leningrad, 122 p. (rus).

Fourth International Research Conference on the History of Arms and Armor. [online] Available at: <<http://zbrojeznau.com/>> [Accessed 18 July 2019] (ukr).

Horev V. 2011. Antique weapons. Examination and restoration. Rostov-on-Don, 425 p. (rus).

Malchenko O. 2009. Ornamental artillery on Right-Bank Ukraine (XV – XVIII centuries). Kiev, 284 p. (ukr).

Sauer 101. Operation and Safety Instructions. 2013, 27 p. (ukr).

Second International Weapons Conference: Abstracts. Kyiv, May 16-18, 2016. 84 p. (ukr).

Sidorenko V. 1958. From the history of peasant-Cossack artillery of the time of the liberation war of the Ukrainian people of 1648-1654. Proceedings of the Kiev History Museum. Kiev. No. 1. 99-118 p. (ukr).

Sidorenko V. 1978. Weapons of local production in the era of the liberation war. Ukrainian Historical Journal. Kiev. № 9. 75–80 p. (ukr).

The Constitution of Ukraine. Law of Ukraine "On Museums and Museum" № 1709-VI of 05.11.2009. : Adopted at the fifth session of the Verkhov. Council of Ukraine 28 Jun. 1996 - Kyiv: VVR, 2010, № 5, art.45 (ukr).

Third International Weapons Conference: Abstracts. 2018. Kiev, June 12-14, 78 p. (ukr).

Verkhoturova M. 2016. The model of the wooden gunstock of hand held short barrel bombard in late 14 early 15th century from Lviv History museum collection. Abstracts of the VI International Youth Forum «Litteris et artibus». Lviv, 45-47 p. (eng).

Verkhoturova M. 2017. The Problems of Preservation and Exposition of Artillery of the XIV-XVIII centuries. in museums. Historical and cultural studios. Lviv, 25-30 p. (ukr).

Veselov F., Karlin T., 2016. Exposition of open storage of armaments and military equipment of the Military History Museum of Artillery, Engineering Troops and Communication Troops: History and Precursors. Questions of museology. 2 (2016). St. Petersburg, 97-110 p. (rus).

Volkau M. 2015. Artillery of Nesvizh Castle. Minsk, s. 188. (be)

**Верхотурова М.**

## **ГАРМАТИ XIV – XVIII СТ. В СУЧАСНІЙ МУЗЕЙНІЙ ЕКСПОЗИЦІЇ**

В статті аналізується ряд проблемних питань які виникають сьогодні в музеях при експонуванні гармат XIV – XVIII ст., пропонуються можливі варіанти їх вирішення. Розглянуто специфічні особливості чищення та догляду за гарматами в процесі експонування. Запропоновано можливі варіанти наповнення виставки з використанням новітніх технологій для інтеграції історії артилерії в сучасний інформаційний простір. В радянський період історії України під впливом політичних факторів зброезнавство як наука не розвивалося. Невелика кількість праць українських науковців того періоду побачили світ виключно завдяки ентузіазму та старанням їхніх авторів. Ідеологічне навантаження радянських праць на тему створювало викривлену історичну картину розвитку артилерії в Україні. Такий стан речей відображався й на музейних експозиціях, які, в своєму інформаційному наповненні, повинні опиратися на фахові наукові дослідження. На сучасному етапі накопичення української військово-історичної історіографії спостерігаємо становлення українського зброезнавства як науки. Це створює якісно нове підґрунтя для побудови та інформаційної наповненості музейних виставок зброї.

Одним із важливих показників розвитку держави є рівень технічного розвитку її зброї. Важливим показником культурного розвитку нації є ставлення до свого історичного минулого, вміння його шанувати та возвеличувати. Історія артилерії XIV – XVIII ст. – це історія великих перемог та нищівних поразок видатних полководців та їхніх армій. Артилерія – бог війни на полі бою. Будуючи музейну експозицію необхідно демонструвати гармати XIV– XVIII ст. як зброю, що стала рушійною силою для кардинальних змін не тільки в тактиці та стратегії ведення війни, але і сприяла своєю появою значному розвитку фортифікацій. Стрімкий розвиток інформаційного суспільства вимагає якісно нових підходів до експонування зброї в українських музеїв та нового, фахового висвітлення історії розвитку артилерії.

*Ключові слова:* гармати XIV – XVIII ст., експонування зброї, військово-історичний музей, інтерактивна експозиція.