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THE HISTORY OF AMMUNITION ASSEMBLY AND DISASSEMBLY IN PUSZTAVACS

Abstract: The author is pursuing his doctoral research on the topic of possible ways of handling surplus ammunition stocks unsuitable for military use. One of these handling methods is the disassembly of ammunition, which is currently being carried out at the Pusztavacs base of the Hungarian Defence Forces Material Supply Storebase, Ammunition Technical Subdepartment. The present study briefly reviews the history of this organizational element in order to fill in some gaps. The author guides the reader from the arduous beginnings to the present, touching on significant milestones. The article focuses specifically on the history of ammunition (dis)assembly activities, so the other tasks of the Pusztavacs base are not, or – in the case of the laboratory – only briefly mentioned.

Keywords: assembly and disassembly of ammunition, Pusztavacs base, ammunition assembly plant, history of ammunition assembly

Összefoglalás: A szerző doktori kutatásait a hadihasználatra alkalmatlan, felesleges lőszerek szétszerelése kezeli. Az egyik ilyen kezelési módszer a lőszerek szétszerelése, amely tevékenység jelenleg is folyik a Magyar Honvédség Anyagellátó Raktárbázis pusztavaci bázisán, a Lőszertekniki Alosztálynál. A tanulmányban – némileg hiánypótlásként – ennek a szervezeti elemnek a történetét tekinthetjük át nagyon röviden. A szerző végigvezeti az olvasót a fáradságos kezdetektől a jelenig, érintve a jelentős mérföldköveket. Az írás kifejezetten a lőszerszerelési tevékenység történetére koncentrál, tehát a pusztavaci bázis egyéb feladatait nem, vagy – a laboratórium esetében – csak felvillantáséppen említi.

Kulcsszavak: lőszerek szérelése, Pusztavacs bázis története, lőszerszerelő üzem, a lőszerszerelés története

INTRODUCTION

Today, within the Hungarian Defence Forces, there is only one organizational element carrying out ammunition installation, the Material Supply Storebase Ammunition Technical Subdepartment. This was not the case earlier: before the 1989 regime change, ammunition bases – with ammunition assembly plants and workshops of different levels in their establishment – operated in Kál, Táborfalva, Hajdúsámos, Izsák, Bakonykánya, Törökbalint and Feldebrő.

The following brief summary of the history of the Pusztavacs plant, which remains the only ammunition

assembly organization today, gives a picture of the development and "life path" of this activity.

I used the following sources for my writing: The Unit History Book of the HDF Hazardous Material Supply Centre (registration number: 1260/72, HDF Material Supply Storebase Base Command Pusztavacs), History of the Institute 1951–1983 (Hungarian People's Army 11th Ammunition Base, Pusztavacs, the original registration number: 0132/1983, from the collection of the Military History Archives), and last but not least, the memories of soldiers and civilian employees who served and worked at Pusztavacs for decades, including myself.

THE BEGINNINGS (1951–1956)

During the Second World War, the 9th Field Ammunition Store of the Royal Hungarian Defence Forces operated on the edge of the village of Pusztavacs, and was emptied at the end of the war. It was in this area, in the wilderness approx. 3 km away from Újház-major that the construction of the Central Ammunition Warehouse of the Hungarian People's Army started in 1949–1950.

The building work was carried out by soldiers and the local population, and a large amount of building materials were placed in the area.

"First, five warehouses were built, then the kitchen and mess were completed. Later, a canteen and a number of offices were established. The works progressed rapidly so that another ten warehouses, the commander's building and the company building were soon handed over. On 15 October 1951, based on Order No. 0046/51 of the Minister of Defence of the Hungarian People's Republic, the 11th Ammunition Warehouse began its organizational activities with the main tasks of receiving, storing and guarding ammunition arriving from manufacturing plants and troops." [1; p. 3.]

According to the document entitled "History of the institute" dated 30 December 1983: "The institute was founded in 1951 in the area of the old 9th Honvéd Ammunition Store; the HPA GS Organ and M. GC¹ No. 08150/1951. under the name Central Ammunition Warehouse." [2; p. 2.]

In the early days, the staff numbered around six hundred personnel. The officers completed 6–12 months

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FIGURE 1: Work on the press [1; p. 5.]

of schooling, and even with the greatest goodwill, we cannot call them specialists or leaders; however, their enthusiasm was great. This was necessary indeed, since the majority of the personnel assigned here, i.e. the conscripts enlisted here, came from Borsod-Abaúj-Zemplén County, and their education was mostly limited to 4-5 classes of elementary school, with many illiterate ones among them.

"In the summer of 1952, the builders finished their work, and only minor finishing touches had to be done after they left. Several of the builders settled here and continued to work as professional soldiers or civil servants.

The young but inexperienced staff did a lot of work. Almost day and night, they escorted ammunition shipments and provided guard duty. Girls and women also worked in the unloading of the wagons, moving 10-12 tons per day.

The same year, the ammunition repair workshop started its operation with 20 personnel, who were unskilled

staff. Its machinery pool was rudimentary, almost all operations were done manually.

The quality of ammunition produced for immediate wartime use deteriorated rapidly. The number of extraordinary events (premature activation, explosions, burning) increased during firing exercises and manoeuvres. For this reason, these munitions were withdrawn to the warehouse, where the enthusiastic but inexperienced team carried out their maintenance and made them suitable for use. This is how the activity of the ammunition repair workshop (hereinafter: ammunition assembly plant) began." [1; p. 3.]

The initial difficulties were more pronounced at the ammunition assembly plant than in other areas, such as ammunition storage.

"Its staff (ce.)² was small and the employees had no professional knowledge. Almost all operations were done manually (e.g. the marks on the artillery ammunition cases were written by hand with a brush). The work was hard. A woman working there lifted 10-12 tons of 85 mm ammunition in 8 hours." [2; p. 11.]

In 1954-55, the senior leaders were replaced by more qualified officers, who had already completed a two-year officer school. It is thanks to their activity, the work at the base became more organized. Technical and infrastructural developments also continued: roads were built, new ammunition receiving points were

established, and more modern machines were placed in the technological processes.

The year 1955 saw the completion and start of a central laboratory that was closely and organically connected to ammunition assembly and disassembly, where the inspection of ammunition components began. At that time, the senior staff was prepared by Soviet specialists, starting in 1956.

THE HEYDAY (1956-1989)

During this period, the ammunition base in Pusztavacs really prospered, just like the ammunition assembly plant. A series of investments and developments were realized at this time.

"By the end of the 1950s, the repair workshop was increasingly prepared for the repair and assembly of ammunition. Its machine pool constantly developed, partly with central supplies, but mostly with self-designed special tools, machines and innovations." [2; p. 11.]

The destruction of scrap gunpowder by burning and the disposal of scrap igniters by blasting began during this period.

In 1961, the assembly line connecting several workrooms of the plant was put into operation. This material handling device was assembled from components of scrapped equipment. Setting it up in the system greatly facilitated and, at the same time, speeded up the work.

Meanwhile, a lot of attention was being paid to the training of employees; both their theoretical and practical education was of high standards.

Developments were also increasing in the field of mechanization, infrastructure, and technological processes. At that time, the renovation of spent artillery shells was a significant result. "From 1962, the renovation (passivation) of spent artillery brass sleeves began (that is, sleeves left behind after shooting). The mechanical renovation was done on converted 100-lathes. The sleeves were calibrated in an 1870 vintage press refurbished by us. Its daily output was 150-200 pieces. The renovation of the copper sleeves made it possible to re-



FIGURE 2: Classification of artillery ammunition cases awaiting renovation [1; p. 11.]

² ce.: civilian employee

fit various munitions of various calibres (e. g. shells for 85 mm D-44 divisional guns). Tens of thousands of copper sleeves have been renovated with this technology." [2; p. 11.]

The development of the technology for steel sleeves had been completed by 1965. "In 1965/66, the renovation (phosphating) of artillery iron sleeves began. The shooting tests have proven that even steel bullet cases can be renewed several times with this method." [2; p. 12.]

In 1970, the munitions assembly plant was expanded with new workplaces, a new boiler room and the transport and sorting areas were built. As a result of organizational rationalization, the independent Technical and Quality Control Department was established in 1971, directly subordinate to the commander.

"In 1972, the laboratory carried out gunpowder and explosive testing of the igniters as well as the larger calibre artillery ammunition in the stock of the Hungarian People's Army. A proposal was made to withdraw materials unsuitable for military use and to renovate those remaining in the system by the munitions assembly plant." [1; p. 8.] In other words, from that time on, the cooperation between the ammunition assembly plant and the testing laboratory, and the interdependence of their activities, became systemic. "Since 1974, we have been carrying out refitting, renovation and new production based on the preparation of decisions after qualifying the traditional ammunition stock and determining its condition following twenty years of storage." [2; p. 14.]

In 1974, as a result of another successful technological development, passivation and phosphating were abandoned during the renovation of artillery ammunition cases, and the process was converted to grain spraying. Based on the design made by the technical staff of the base, a total of five pieces of the necessary equipment were developed and manufactured by the Instrumentation Research Institute.



FIGURE 3: Loading of ammunition intended for relief transport onto a vehicle of the Hungarocamion (From the photo archives of the HDF Material Supply Storebase Base Command, Pusztavacs)

In connection with ammunition assembly, the Product Code of the Army (PCA)³ was introduced in 1978, which formed a new basis for recordkeeping. At the same time, machine data processing began, with the help of which up-to-date data was always available on the technical condition of the ammunition and components in the HPA's inventory.

It amounted to a profile expansion when the explosives melting unit of the munitions assembly plant was built at the end of the 1970s⁴. Here, the explosive material was removed with the use of hot water technology from the shells of dismantled artillery ammunition, which were no longer suitable for military use. For this technology, a locomotive boiler developed the industrial steam required for the technological process.

"At the beginning of the 1980s, the so-called conveyor line of the plant was installed, which was basically intended for the painting and corrosion protection of fixed artillery ammunition. According to experts, the corrosion protection of the ammunition refurbished and assembled here exceeded the quality of new ammunition from the factory." [1; p. 9.]

From the beginning of the 1970s to 1983, the base, including the ammunition assembly plant, played a role in various international processes. "During this period, the unit participated in KÜLKER (foreign trade) aid programs,

in the framework of which nearly 210 wagons of refurbished ammunition were handed over to the People's Army of Vietnam" [1; p. 8.]

"The renovation and refitting of ammunition and the sale of waste materials continued at a good pace, with increased staff number. During this period, the modernization of the barracks began. On 1 September 1989, based on measure No. 018/89 of the HPA OSC⁵, the unit was transformed into the HDF Ammunition Supply Centre. At first, six ammunition depots were placed under its control, and then another two. Their locations were as follows: Törökbálint, Táborfalva, Bakonyásrkány, Kapoly, Feldebrő, Izsák, Kál, Hajdúsámon. At that time, the staff of the supply centre numbered around 2,300." [1; pp. 11-12]

At that time, the personnel consisted of highly qualified military and civilian specialists and skilled workers. On the occasion of public holidays, more and more people received praise and rewards in recognition of their outstanding professional activity. There was also a lively cultural life at the unit, so famous artists often performed in front of the personnel.

FROM THE REGIME CHANGE TO THE END (1989–2000)

The downsizing of forces following the regime change had its effect on Pusztavacs as well. Ammunition belonging to the weapon systems of

³ PCA (Hungarian abbreviation: NTK) was the predecessor of the Uniform Product Code of the HDF (Hungarian abbreviation: HETK)

⁴ Explosives had been melted out before as well, but with rudimentary, "homemade" methods.

⁵ HPA OSC: Hungarian People's Army Ordnance Service Chief

FIGURE 4: The superior hands over a reward to Lieutenant Ferenc Éles
(From the photo archives of the HDF Material Supply Storebase Base Command, Pusztavacs)



decommissioned military equipment suddenly became redundant, and was transported to the central storage facilities on a huge scale. Something had to be done with the surplus materiel, so its disassembly began, which also took place in large volumes at the Pusztavacs plant.

Meanwhile, the "armed forces reform" also reached the Ammunition Supply Centre organizationally. "Based on Decision No. 88/1995 of the National Assembly, the reorganization and downsizing of the military continued. Among our subordinates, the

bases at Törökbálint, Feldebrő, and Bakonyásrkány ceased to exist, and their emptying put a very serious burden on the staff. The number of remaining organizations also decreased significantly.

In September 1997, as a result of an organizational change, the HDF Ammunition Supply Centre ceased to exist, its legal successor is the HDF Ammunition Repair and Inspection Plant." [1; p. 14.]

In this period, the main tasks were to dismantle the ammunition of the 76 mm guns, the 85 mm D-44 divisional guns (anti-tank guns), the 100 mm MT-12 anti-tank guns, the 100 mm tank guns (T-55) and to sell the obtained components. The last task of the ammunition assembly plant was to convert the 57 mm S-60 anti-aircraft machine gun ammunition into decorative fire⁶.

"2000. On 31 December, the HDF Ammunition Repair and Inspection Plant was closed down and the ammunition assembly plant was liquidated, which involved the dismissal of nearly 50 civil servants.

De jure from 1 October 2000 (de facto from 1 January 2001), the HDF Munitions Supply Centre was established as the legal successor of the HDF Ammunition Repair and Inspection Plant. Then in 2005, the HDF Hazardous Material Supply Center was established as the legal successor.

As of 1 January 2001, the HDF did not have ammunition (dis)assembly (repair, maintenance, deactivation) skills." [3]

FROM THE RESTART TO THE PRESENT (2009–2024)

In 2009, the reactivation of the ammunition assembly capability of the Hungarian Defence Forces came up at the general staff level. Its task was primarily to dismantle ammunition stocks that were unnecessary and unfit for military use. In addition, the capability had to include the final assembly⁷, reassembly, exchange of fuses, surface treatment, etc. of various artillery and tank ammunition. The plant appeared in the establish-

ment of the Hungarian Defence Forces Hazardous Supply Centre (HDF HMSC) under the name Ammunition Installation Section. Some technological instructions were completed by 2010, when production work began.

In 2013, the HDF HMSC ceased to exist as an independent budgetary body, as it was merged with the HDF Logistic Supply Centre, and the HDF Material Supply Storebase was created. Renamed Ammunition Technical Subdepartment from 2016, the ammunition installation plant continues to operate within this organization.

By 2022, the technological palette of the plant had been expanded to its current level. It is currently able to perform the following activities:

- disassembly of 5.56–14.5 mm sniper ammunition, detonation of centre-fire primers
- melting of explosives from 82 mm mortar shells
- dismantling of artillery and tank ammunition
- refitting of artillery and tank ammunition, replacement of fuses, restocking
- replacement of fuses in 93M NF defensive and 96M NF offensive hand grenades
- verification of the absence of dangerous substances by reheating spent ammunition cases.

Among the plans is the development of neutralization of surplus ammunition stocks by disassembly, which will further expand the neutralization capabilities, as well as increase the effectiveness of the existing ones.

Following the history of ammunition assembly and dismantling in Pusztavacs, we saw how important this activity was in the logistic system of the army until the regime change. At the moment, after the period of decline, there is hope that there will be another upswing phase, albeit more prominently in the area of ammunition disassembly. One thing is certain: disassembling and assembling ammunition in some form will be necessary in the future as well.



FIGURE 7: The unit colours of the Hungarian Defence Forces Hazardous Material Supply Centre (Photo by the author)

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⁶ Decorative fire ammunition: ammunition to imitate the sound and sight of artillery fire on ceremonial occasions. During production, the projectile is removed from the live ammunition, and then the sleeve mouth is sealed without air exchange.

⁷ Final assembly: installation of the igniter in the projectile.