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## THE BEGINNINGS OF THE POLISH ARMS INDUSTRY IN THE SECOND POLISH REPUBLIC "ARMA" – THE ARMS AND MACHINES FACTORY IN LVIV

**ABSTRACT:** The purpose of this study is to introduce the operation of the Arms and Machines Factory "Arma" in Lviv. It was one of the first armaments companies in the Second Republic. The company made great contributions to the work of rebuilding Poland after the end of World War I, and from then on, by fulfilling the orders of the Polish Army, had an impact on the security and defense of the country. The study is based on archival materials collected in Poland and Ukraine, published sources, the press and scientific studies.

**KEYWORDS:** arms industry, Second Republic of Poland, Lviv, factory, "Arma"

### INTRODUCTION

The rebirth of Poland after 123 years of partition posed a number of new challenges to the state organism. Building an indigenous arms industry was one of them. Of course, the pre-partition Republic had its own traditions in this matter, but nevertheless the years of annexation, the Great Industrial Revolution and the concomitant changes in the face of the army and wars as such caused the partitioning states to create their own industry, corresponding to the modern battlefield. Most of these factories were destroyed or looted during the Great War.

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The end of World War I in 1918 did not at all mean the end of the struggle for the existence of the Polish State. The Polish-Ukrainian War of 1918-1919 and the Polish-Russian War of 1919-1920 required a great military effort, including a steady supply of firearms. In addition to making purchases, equipment received free of charge, damaged units had to be repaired and weapons already in possession had to be unified.

Thus, the Polish arms industry of the Second Republic period was born in connection with the needs of the moment, as well as from the bottom up. Only during the period of peace, i.e. after 1921, did it have the opportunity to develop in a decidedly more planned and systematic manner.

The purpose of this study is to introduce the history of one of the first armament companies established in the reborn Republic, i.e. the Lviv-based "Arma". Archival materials, published sources, the press and scientific studies constitute the source basis of this study.

The state of research on the history of the Arms and Machines Factory "Arma" is quite poor, which is due to the scarcity of surviving archival materials. To date, this topic has been addressed only by Leszek Zachuta<sup>1</sup> and Piotr J. Bochyński<sup>2</sup>. However, when talking about the "Arma," one should be aware that although it was formally established in 1922, its history dates back to November 1918.

## **HARD BEGINNINGS**

The origins of the Lviv arms factory date back to the defense of Lviv in November 1918. The Polish-Ukrainian conflict created a local demand for a factory that would undertake repairs and alterations of weapons for the fighting Poles. Cut off from arms supplies, Lviv had to cope on its own, hence the initiative in the form of the organization of the Repair Workshop for Hand and Machine Weapons. The workshop was headed by a well-known constructor - Eng. Stanisław Kubinski<sup>3</sup>.

In November-December 1918, the workshop mainly carried out reassembly work, aimed at restoring damaged weapons, manufactured gunsmithing tools and produced spare parts. They

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<sup>1</sup> L. Zachuta, „Arma” *Fabryka Broni i Maszyn we Lwowie Spółka Akcyjna*, „Dawna Broń i Barwa” 1999, nr 19–20, p. 3–19; idem, *O „Armie” – Fabryce Broni i Maszyn we Lwowie*, „Muzealnictwo Wojskowe” 2017, t. 10, p. 186–207.

<sup>2</sup> P.J. Bochyński, *Nim powstała „Arma” Lwów*, „Odkrywca” 2022, no 6.

<sup>3</sup> *Album inżynierów i techników w Polsce. T. 1, Cz. 1, Politechnika Lwowska. Rys historyczny. Informacje*, Lwów 1932, p. 108; L. Zachuta, *O „Armie”...*, op. cit., p. 186.

repaired heavy machine guns (Maxim wz. (*English equivalent of M*) 05, Maxim wz. 08, Schwarzlose wz. 07/12, Hirschkiss wz. 14), rifles (Mosin wz. 91, Mannerlichers wz. 90 and wz. 95, Mauser wz. 98). Various parts (e.g. bases, heads, bearings, sliders, etc.) were manufactured for all of the above types. According to surviving data, only in the last two months of 1918 about 500 rifles were refurbished. Revolvers were also overhauled (mainly Nagant wz. 95, and Lebel wz. 92) as well as pistols - Browning wz. 12 and Mauser wz. 14. In addition, the aforementioned tools of various types and purposes were manufactured.

Fig. 1.

General view of the office buildings of the Arms and Machines Factory "Arma" in Lviv



Source: Album of the Arms and Machines Factory "Arma" in Lviv, Lviv 1927.

The end of the fighting in Lviv on November 22, 1918, the Polish offensive of early 1919, which led to the lifting of the city's state of siege, and the end of the Polish-Ukrainian war did not reduce the need for the existence of such facilities. The Polish-Russian war brought another, even greater need for armaments. During it, the plant became the main auxiliary center for the Polish Army in Eastern Lesser Poland. In addition to repairing damaged equipment, it carried out modifications to small arms from the Austro-Hungarian Army. Besides, spare parts for various types of weapons and grips for officers' sabers were produced. At that time, the plant was called the Polish Army Gunsmithing Workshop No. 3 in Lviv. As a volunteer, Eng. Kubinsk continued to head them<sup>4</sup>.

The establishment of the General District "Lviv" on June 10, 1919 affected the further fate of the plant. First of all, it changed its name to Arms Workshop of the General District Command "Lviv", thus becoming formally incorporated into the administrative structure of the army<sup>5</sup>. It

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<sup>4</sup> Ibidem.

<sup>5</sup> Dziennik Rozkazów DOG „Lwów”. Rozkaz no 1 z 21 VI 1919 r.; „Kurier Lwowski” 1919, no 161 z 13 VI, p. 5.

should be mentioned, however, that the above name is known only from small arms signatures<sup>6</sup>.

The plant during this period was engaged in, among other things, alterations of Mannlicher rifles, wz. 95, production of signal pistols designated as wz. 1919: a flintlock from Werndel's single-shot rifle, wz. 1873, a replacement, which was an original product of the company, and a third - similar to English designs from the years of the First World War. In addition, a signal pistol designated as the wz. 1920 was also produced in two versions - with brass and steel barrels. In addition, Mannlicher rifles wz. 90 were converted into self-repeating rifles wz. 1921 cal. 8 mm. Various spare parts were also manufactured - springs, trigger levers, rings, etc.

The plant's contribution to national defense was therefore significant. Even a special occasional commemorative badge, stylized as a combat badge, was prepared to commemorate the work for victory in the battles against the Ukrainians in Lviv and in the war against Bolshevik Russia.

## **OPERATION OF THE COMPANY UNDER PEACEFUL CONDITIONS**

The end of military operations in 1921 and the army's transition to peacetime caused the needs of the army to change somewhat. First of all, it was decided to create a state-owned arms industry, so the military authorities proceeded to liquidate smaller factories. Accordingly, in 1922 a decision was made to close workshops<sup>7</sup>.

Due to the already mentioned merits of the workshops in the national defense, those associated with their activities decided to maintain and develop the facility so that it became a modern firearms factory<sup>8</sup>. Thus, at the beginning of 1922, a company called "Arma" Lviv Arms Workshop of Jan Wasung and Company in Lviv was established. At the Second Eastern Trade Fair in Lviv, which took place from September 5-15, 1922, the company exhibited hunting weapons<sup>9, 10</sup>.

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<sup>6</sup> Z. Gwóźdź, *Znaki i cechy występujące na polskiej broni strzeleckiej w latach 1918–1965*, „Muzealnictwo Wojskowe” 1992, t. 5, p. 110.

<sup>7</sup> Z. Kazimierski, *Centralny Zakład Wytwórnictwa Wojskowych*, „Zeszyty Naukowe Cogitatus” 2033, no 1, p. 93–94.

<sup>8</sup> Wojskowe Biuro Historyczne – Centralne Archiwum Wojskowe w Warszawie (dalej: WBH–CAW), sygn. I.300.32.62: Pismo władz „Armii” do Szefa Administracji Armii MSWojsk. z 13 II 1924 r.

<sup>9</sup> *Przewodnik po drugich „Targach Wschodnich” we Lwowie od 5 IX do 15 IX 1922. Spis wystawców*, Warszawa–Lwów 1922, p. 117.

<sup>10</sup> A.A. Ostanek, *Targi Wschodnie we Lwowie i ich znaczenie polityczne oraz gospodarcze dla miasta, regionu i Polski w świetle „Kwestionariusza w sprawie Targów Wschodnich” z 4 lutego 1928 roku*, „Rocznik Kresowy” 2017, no 3, p. 121.

During 1923, the company's authorities carried out intensive efforts to transform the company from a limited liability company into a joint stock company. In accordance with the decision of the Minister of Industry and Trade and the Minister of the Treasury, on May 17, 1923, the Articles of Association of the joint stock company "Arma" the Arms and Machines Factory in Lviv were approved. According to the statute, Lviv became the company's headquarters, although the enterprise was allowed to establish branches, agencies, warehouses and expositories outside Lviv. The company's object was the manufacture, processing and repair of military and hunting weapons, tools and machines needed for technical military needs, hunting and sporting equipment, all kinds of metal products and special machines. The company's governing bodies were the General Assembly (for all shareholders), the Board of Directors (consisting of 9-11 members) and the Audit Committee.<sup>11</sup>

On June 23 of the same year, the company's founding meeting took place in the building of the Polish National Bank in Lviv. The organizers and founders of the joint-stock company, and at the same time the first members of the Board of Directors (Supervisory Body) were Jan Wassung, Eng. Ludwik Roehr Eng. Klaudiusz Filasiewicz, Dr. Stanislaw Mycielski, Albert Mniszek, Tomisław Jędrzejowicz, Włodzimierz Iżycki and Stanisław Kieszkowski. On behalf of the Ministry of Military Affairs, the Council was joined by Colonel Franciszek Meraviglia-Crivelli<sup>12</sup>.

The new company took over both movable assets and some liabilities from its predecessor. In the case of property, it consisted of the factory located at 3 Bema Square. In addition, neighboring buildings and land were leased from the Ministry of Military Affairs. What was important for the company was the takeover of the contract concluded with the Ministry of Military Affairs on August 4, 1922, and providing for the execution of all army orders for the overhaul and renewal of small arms. The financial terms of each of the subsequent orders were to be determined by a separate agreement, so the very fact of taking over the above agreement was extremely important for the company<sup>13</sup>.

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<sup>11</sup> „Monitor Polski” 1923, nr 127 z 8 VI, poz. 488.

<sup>12</sup> „Gazeta Lwowska” 1923, nr 278 z 13 XII, p. 8.

<sup>13</sup> L. Zachuta, *O „Armie”...*, s. 195.

Fig. 2.

A view of the workshops and warehouses of the Arms and Machines Factory "Arma" in Lviv



Source: Album of the Arms and Machines Factory "Arma" in Lviv, Lviv 1927.

The company's share capital amounted to 600 million Polish marks and was divided into 60 thousand shares, with 10 thousand Polish marks each. Of the 60 thousand shares, 34 thousand were registered shares, while another 24 thousand were bearer shares. The first shares were issued on June 23, 1923. The shares were sold by the Lviv Discount Bank. One vote was entitled by 10 registered shares or 15 bearer shares, and the number of votes was limited by the stipulation that there could not be more than the number of votes that would result from holding 1/10th of the share capital. At the end of 1923, a second issue of 40,000 shares, worth 10,000 Polish marks each, was put into circulation, with the proviso that they were for the company's existing issuers only (no free sale). The funds thus obtained were used for investment, including further expansion of the factory. It is worth mentioning that after the currency reform the company's share capital amounted to 300 thousand zlotys and was divided into 3 thousand registered shares of 100 zlotys each<sup>14</sup>.

Structurally, the company was made up of three departments: military gunsmithing, hunting gunsmithing and machine. The first was engaged in the production of military weapons and the binding of handles of officers' sabers, the second was engaged in the manufacture of hunting weapons and accessories, including the repair and sharpening of weapons and conducting strength tests, while the third carried out all precision machine work, precision dies, molds for glassworks, forging tools and forged and stamped products<sup>15</sup>.

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<sup>14</sup> „Monitor Polski” 1923, nr 127 z 8 VI, poz. 488; *Statut Spółki Akcyjnej pod firmą: „ARMA”, Fabryka Broni i Maszyn we Lwowie, Spółka Akcyjna, Warszawa 1931, p. 5.*

<sup>15</sup> „Gazeta Lwowska” 1923, nr 233 z 14 X, p. 8.

In the 1920s, "Arma" executed various contracts for the army. Between August 1922 and June 1923, it was contracted to convert 15,000 Russian Mosin wz. 91, cal. 7.62 mm rifles into Polish Mauser 7.92 mm ammunition in the coming years. All of the work carried out by the company consisted of shortening and recalibrating the barrel, modernizing some parts of the breech, modifying the sight and changing the front capucine set along with the bayonet holder, which was adapted to the wz. 22 bayonet<sup>16</sup>.

In the following years, the company tried to develop, although this, of course, involved the need to implement new technologies and expenses. On the one hand, in the autumn of 1924, at the first foreign exhibition of the Polish armaments industry in Constantinople, "Arma" presented rifles and officer's sabers of the 1921/22 model with their own grips, but on the other hand, in the whole of the aforementioned year, it made only 200 rifles and 450 complete capucines, which in the final financial balance of the company for 1924 meant losses in the amount of 160,071.51 zł.<sup>17</sup>

It is known for sure that in the same year the company operated in five large factory halls, employing 230 workers. It is worth noting that "Arma" was independent in the process of order fulfillment from foreign supplies, as it had its own tool shops. The entire work was supervised by management personnel among whom many instructors came from outside Poland and had vast experience.

## **DECLINE**

Permanent cooperation with the military theoretically gave the company a good chance, but in reality it was also sometimes problematic. What primarily troubled the company was the actual assessment of the technical condition of the weapons to be converted. The inspection of the equipment always took place in a rather cursory and random manner, and on the basis of this the averaged amount of work required to convert one weapon was determined. In practice, it turned out that the weapons received were in worse condition than expected, which made the necessary total process of converting a weapon piece longer, thus burdening the plant's budget.

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<sup>16</sup> A. Konstankiewicz, *Broń strzelecka Wojska Polskiego 1918–1939*, Warszawa 1985, p. 75–78; idem, *Broń strzelecka i sprzęt artyleryjski formacji polskich i Wojska Polskiego w latach 1914–1939*, Lublin 2003, p. 154–155.

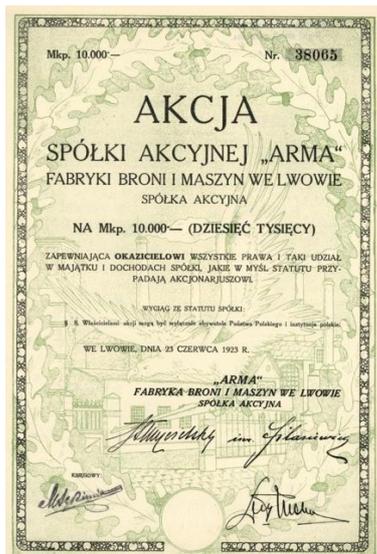
<sup>17</sup> W. Dunin-Wąsowicz, *Nasz przemysł na wystawie polskiej w Konstantynopolu*, „Polska Zbrojna” 1924, no 259 z 21 IX, p. 2.

Such a situation led to negotiations in late 1924 and early 1925 aimed at changing the rate for recalibrating and converting one Mosin rifle. On March 5, 1923, a new agreement was signed between "Arma" and the Ministry of Military Affairs, under which for half of the contracted number of rifles, i.e. 7,500 pieces, the amount was raised to 41.93 zlotys. The success of "Arma" was the simultaneous signing of a further contract for the processing of another 20,000 rifles, but the problem was that the negotiated amount was lower by PLN 7.56 than that calculated by the company<sup>18</sup>.

The company's financial condition became increasingly worrisome over time. Its debts had more than doubled from their previous level of 160,000 to reach 330,000 zł. Shareholders did not receive dividends, the Management Board together with the Council did not receive salaries, and the same was true of employees, who were delayed or not paid at all. The Ministry of Military Affairs did not improve the situation with its actions, as from 1925 the technical acceptance conditions for converted weapons were tightened quite drastically. Moreover, the company was forced to build a residential house for the head of the Ministry of Military Affairs' acceptance commission, a building for the commission's work and for the storage of weapons before and after acceptance, and to employ 8 auxiliary workers at the co-mission and 9 workers at the shooting range. The company was also required to maintain the weapons and prepare and store records of the commission's work.

Fig. 3.

Bearer share of the Arms and Machines Factory "Arma" in Lviv



Source: Author's Collection.

<sup>18</sup> L. Zachuta, „Arma”..., p. 13.

As early as 1925, the Ministry of Military Affairs became the object of both criticism and intervention by a number of people in the "Arma" case. The then Lviv voivode Pavel Garapich, Lviv mayor Józef Naumann, MP Artur Hausner and General Meraviglia-Crivelli intervened. The Minister of Military Affairs, Gen. Władysław Sikorski, explained before the Sejm Military Commission the principles of the company's cooperation with the Ministry of Military Affairs. Gen. Meraviglia-Crivelli, in turn, pointed out that with its actions the Ministry, instead of striving for the company's development, was leading to its slow demise, thus wasting the potential and funds previously invested in the company<sup>19</sup>.

Fig. 4.

A view of the window of the company store of the Arms and Machines Factory "Arma" in Lviv at Linde St.



Source: Author's Collection.

Aiming to further the company's operations, its authorities decided to produce weapons and other equipment, including orders for civilian customers. Production of brass handles of officers' sabers of the 1921/22 pattern continued. Hunting weapons and equipment were offered - five-shot rifles powered by 7.92mm ammunition, shotguns for forest guards, air guns (long-range and threaded), hawk baskets, animal traps and even hunting knives. Precision tools, machinery, gears, forged and stamped products, locks and fittings, firefighters' pumps and even Tatra cheques and alpenstocks for tourists were also manufactured. All of the products were

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<sup>19</sup> *Odparcie ataków na administrację wojskową. Przemówienie ministra Sikorskiego na posiedzeniu Sejmowej Komisji Wojskowej z dnia 13 listopada 1925 r., „Polska Zbrojna” 1925, no 313 z 14 XI, p. 3–4.*

initially sold in the company's own store at Linde Street, and later through the Hunting Cooperative<sup>20</sup>.

The aforementioned interventions did not result in a major change in the military ministry's approach to the company. Opening up to civilian customers, in turn, was not able to significantly affect the company's financial situation. As a result, at the turn of April and May 1926, the company's condition deteriorated drastically. Work in the workshops was halted, workers were terminated without payment of both severance pay and wages for almost four weeks of work. On May 11, a meeting was held between the company's authorities and Deputy Chief of Army Administration Gen. Mieczysław Norwid-Neugebauer, during which it was agreed that the Ministry of Military Affairs would sign a new contract with the company, taking into account first and foremost the fact that it is heavily dependent on the Ministry, but nevertheless performs extremely important work for it<sup>21</sup>.

The year 1927 was still not propitious for the company. In February, the company's authorities sent a memorandum to the President of the Republic of Poland Prof. Ignacy Moscicki regarding their case. Later, the "Arma" crew bid farewell to its long-time director, Eng. Kubinski, who was replaced by Eng. Stanislaw Kossakowski. The following year, the basis for the company's reorganization was probably being prepared, since MP Marian Zyndram-Kościałkowski stated at a meeting of the Budget Committee that the extension of the Ministry of Military Affairs' contract with the Company was dictated by its specialization in certain areas. At the same time, the director of the Supreme Chamber of Control, Stanislaw Wróblewski, during the debate on the budget for the army in January 1929, indicated that the army's cooperation with "Arma" raised objections to the treasury's losses<sup>22</sup>.

In 1931, the company's board of directors, in an effort to save it from bankruptcy, reduced its share capital by 270,000 zlotys, calling on creditors to file claims at the company's office. In 1933, the company employed 4 clerks, 2 technical staff and 148 workers. The overall area of the plant covered 2117 square meters. It also had electric motors with a total capacity of 48 hp<sup>23</sup>.

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<sup>20</sup> L. Zachuta, *O „Armie”...*, p. 201–202.

<sup>21</sup> WBH–CAW, sygn. I.300.32.63: Pismo władz „Army” do Szefa Administracji Armii MSWojsk. z 17 V 1926 r.

<sup>22</sup> *Budżet wojska w Sejmie. Świetne przemówienie pos. M. Zyndram-Kościałkowskiego na Komisji Budżetowej*, „Polska Zbrojna” 1929, no 17 z 17 I, p. 3.

<sup>23</sup> „Polska Gospodarcza” 1931, nr 4 z 24 I, s. IV; *Rocznik Polskiego Przemysłu i Handlu*, Warszawa 1934, poz. 2109.

Dr. Mycielski died in 1933, while General Meraviglia-Crivelli died in 1934. Both had lobbied for the company at various levels over the years. The above loss must have taken its toll on the company's future fortunes. The year 1934 saw the valuation of the movable and immovable assets of the entire enterprise<sup>24</sup>. In fact, no one was fighting for its survival anymore. Formal and legal steps were initiated to put the company into bankruptcy<sup>25</sup>. On September 28, 1935, an announcement appeared in "Gazeta Lwowska" informing that on October 30 there would be a public auction of the "Arma" property, which included a one-story brick residential building, as well as a machine hall and wooden shed<sup>26</sup>. This is how the era ended.

## CONCLUSION

Several factors must be taken into account to properly assess the activities of the Lviv "Arma". First of all, it should be remembered that the Polish arms industry on the threshold of the Second Republic was born almost from scratch, very often grassroots and out of the need of the moment. Professionals and idealists at the same time were involved in the creation of such plants, often voluntarily, during the wars for independence and borders. The army's transition to peacekeeping after the end of the Polish-Russian war seemingly meant the internal stabilization of the state. However, it should be remembered that the country was then facing huge financial shortages and could not afford a number of necessary and far-reaching investments.

"Arma" was created from scratch, as a result of the need of the moment and based on the involvement of a number of people who wanted to support the reborn and struggling for its existence Polish Republic. Unfortunately, after the end of hostilities and the transition of the Polish Army to a peacetime, like many such initiatives, it was destined to disappear. The lack of state funding to build a large arms industry meant that the company could not count on state support. For this reason, its existence was to be sustained by private entrepreneurs.

The "Arma's" contracts with the Ministry of Military Affairs, due to the fact that the company soon became fully dependent financially on the Ministry's orders, instead of being an asset to its operation, began to bring it more and more problems over time. It seems that the state's budget shortfalls determined that the potential inherent in the company was ultimately

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<sup>24</sup> Центральний державний історичний архів України, м. Львів (dalej: ЦДІАУ), ф. 558, оп. 1, спр. 1, 7.

<sup>25</sup> ЦДІАУ, ф. 558, оп. 1, спр. 2.

<sup>26</sup> „Gazeta Lwowska” 1935, nr 222 z 28 IX, ogł. 3.

underestimated. The company, as a private entity, was treated merely as one of many business operators providing services to the army. Nor did all decision-makers know how to properly assess and utilize its potential. When the Polish armaments industry was finally getting built up and a number of state investments were underway, i.e. in the 1930s, "Arma" was already a company with mounting financial problems in which no one wanted to invest.

It is worth mentioning that, regardless of its statute and name, the plant, and thus all its employees, have made a glorious mark on the page of the struggle for independence and borders. Later, on the other hand, its activities were part of the implementation of measures to increase the country's defense potential.

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