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Participation of military logistics services in the provision of food in Warsaw in September 1939

Udział wojskowych służb logistycznych w zapewnieniu żywności w Warszawie we wrześniu 1939 roku

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Abstract. The war struggle in September 1939 has been the subject of a rich literature. Nevertheless, due to the scattered and incomplete source base, many issues require further research and an in-depth, wider coverage. This is all the more important as the course of contemporary conflicts, including the ongoing war between Ukraine and the Russian Federation, demonstrate the impermanence of many experiences in military history and the principles of the history of the art of war. The aim of the research undertaken is to show the knotty problems connected with food supplies for the units fighting in the defence of Warsaw in September 1939. The authors, carrying out an in-depth historical analysis of hitherto unknown documents and archive accounts supplemented with literature on the subject, present the preparations, plans, organisation and implementation of food security for the units taking part in the defence of the Polish capital at the beginning of the Second World War. As a research hypothesis, the authors assumed that, despite the difficulties of a planning, organisational, competence and executive nature on the Polish side, it was thanks to the initiative and resourcefulness of some officers at various levels and various intendant structures that the chaos was eventually brought under control and food was provided to the defenders of Warsaw. Thus, the authors prove that the human factor in the situation had a decisive impact on sustaining the high morale and fighting ability of Polish troops and civilians.

Keywords: September 1939, food security, military supply branch, defense of Warsaw, military logistics services

Abstrakt. Zmagania wojenne we wrześniu 1939 r. doczekały się bogatej literatury przedmiotu. Niemniej jednak ze względu na rozproszoną i niekompletną bazę źródłową wiele kwestii wymaga dalszych badań oraz pogłębionego, szerszego ujęcia. Jest to tym bardziej istotne, gdyż przebieg współczesnych konfliktów, w tym trwająca wojna Ukrainy z Federacją Rosyjską, ukazują nieprzemijalność wielu doświadczeń z dziejów wojskowości i zasad historii sztuki wojennej. Celem podjętych badań jest ukazanie węzłowych problemów związanych z zaopatrzeniem w żywność oddziałów walczących w obronie Warszawy we wrześniu 1939 r. Autorzy dokonując pogłębionej analizy historycznej nieznanych do tej pory dokumentów i relacji z archiwów uzupełnionych literaturą przedmiotu, przedstawiają przygotowania, plany, organizację i realizację zabezpieczenia w żywność oddziałów biorących udział w obronie stolicy Polski w początkach II wojny światowej. Jako hipotezę badawczą autorzy przyjęli, że mimo występujących po stronie polskiej trudności o charakterze planistycznym, organizacyjnym, kompetencyjnym, jak i wykonawczym, to dzięki inicjatywie i przebojowości części oficerów różnego szczebla i różnych struktur intendenckich ostatecznie udało się zapanować nad chaosem i zapewnić żywność obrońcom Warszawy. Tym samym autorzy dowodzą, że czynnik ludzki w zaistniałej sytuacji miał decydujący wpływ na podtrzymywanie wysokiego morale i zdolności bojowej polskich oddziałów i ludności cywilnej.

Słowa kluczowe: wrzesień 1939, zabezpieczenie żywnościowe, intendentura wojskowa, obrona Warszawy, wojskowe służby logistyczne

Introduction

The fighting in September 1939 holds a prominent place in Poland's recent history. As with many 20th-century events, however, its perception in the past was largely shaped by contemporary political considerations. This was seen clearly in the months directly following the September defeat (Adamczyk, Gmitruk, 2005) as well as in the communist era. After 1989, a number of valuable works was published to discuss the events of 1939-1945. However, earlier misjudgements survive even today. Among these is the underestimation by historians of the importance of logistics for the Polish Army and for the outcome of the September campaign. Exceptional in that regard are the works of Waldemar Rezmer (Rezmer, 2010). and Antoni Nawrocki (Nawrocki, Fechner, 2004), but even they fail to address certain essential aspects of the subject. Neither the decisions of leaders at various command levels can be properly understood, nor an objective assessment made of the situation, nor the appropriate conclusions drawn without a thorough knowledge of the local conditions or supply plans regarding food, ammunitions and weapons, or the execution of those plans in the realities of an on-going mobilisation and hostilities. Indeed, many conflicts of today, including the present war between Ukraine and the Russian Federation, reveal a whole spectrum of identical problems that could be reduced or even eliminated with the benefit of past experience. Food security seems to be an issue of utmost important, both locally and globally, as suggested by many present-day researchers (Kibrom, et al., 2023, Kemmerling, et al., 2022).

It was no different during the defence of Warsaw in September 1939. Although Antoni Nawrocki's work – published in collaboration with Andrzej Felchner in 2004 – was an important contribution to research on warfare logistics within the Polish capital, it failed to comprehensively discuss the problem of feeding the combatants.

After the discovery of some new source material, Nawrocki and Felchner's work now requires completion, correction and re-interpretation of some facts (Nawrocki, Fechner, 2004), which is one of the aims of this paper. The present authors propose the hypothesis that despite mounting difficulties with planning, organisation, execution and – above all – the overlapping responsibilities, it was due to the resourcefulness and daring of the individual officers and soldiers of the District Command of the 1st Corps, the Command of the Defence of Warsaw, the 'Warsaw' Army and other units fighting in the city that the initial chaos was brought under control, effectively counteracting German propaganda and preserving the high morale and battle-readiness of the Polish troops defending the capital in September 1939.

In a synthetic manner, by analysing and comparing the archival sources in conjunction with the literature, the present authors explain the place and role of Warsaw in the Polish General Staff's quartermaster plan and the problems associated with provisions, including especially with food in September 1939. They describe the problems accumulating with each passing day of September as a result of the changing situation at the operational and tactical levels, and therefore the evolving role of Warsaw, which was not prepared for long-term defence. At the same time, they show the *ad hoc* measures taken by a group of officers from the army service corps to change this situation on the ground so that food could be provided for the troops and – to some extent – also to the civilian population, to enable the Polish Army to resist in Warsaw until the end of September.

Army supply branch in Warsaw in September 1939

As a major political/administrative centre and an important communications junction, Warsaw was envisioned in the quartermaster plan as a supply hub for the 'Modlin' and 'Prusy' Armies, later possibly to assist the 'Pomorze' and 'Poznań' Armies in that capacity, depending on the situation on the front. This task was to be executed by the forces of the District Command of the 1st Corps (DCC 1) led by Brigadier-General Mieczysław Ryś-Trojanowski. At the outbreak of the war, that officer had a dual role: as a territorial commander subordinate to the Minister of Military Affairs, he was in charge of continued mobilisation, and as 'the Commander-in-Chief's delegate to the army service corps' (subordinate to the Commander-in-Chief through the Quartermaster General), he was to ensure the supply of the said armies through a storage and distribution station at the Warsaw railway junction. Direct responsibility for the second task, which gained in prominence as the war continued, lay with the district quartermaster (a post created shortly before the outbreak of war) qualified Colonel Jan Hyc, previously serving as chief of General Staff Division 4. Although he was well-acquainted with the organisation and working principles of the rear, as he had co-created them, he was inevitably

less familiar with the distribution of the district's resources. For this reason, the burden of work related to the organisation and distribution of food rested mainly with DCC 1's supply branch chief Colonel Władysław Goebel. He was in charge of the cash office, fuel and lubricant distribution depots, distribution and operation services, a military mill, field bakeries, army supply repositories in Warsaw, Modlin, Małkinia and Dęblin, as well as a machine park and a reserve detachment of the supply branch (Goebel, n.d.).

On the third day of fighting, Commander-in-Chief Edward Śmigły-Rydz ordered Minister of Military Affairs Major-General Tadeusz Kasprzycki to organise the defence of the central Vistula between Modlin and Sandomierz. On that basis, the Minister issued organisational order No. 1, entrusting the defence of the Modlin-Dęblin section to the DCC1 commander, and that of the Dęblin-Sandomierz section to the DCC 2 commander. The task of defending the capital was assigned to Brigadier-General Walerian Czuma, who led the Command of the Defence of Warsaw (CDW). Despite the widespread belief at the time that the supply branch structures for the defence of Warsaw should be built from scratch (Nawrocki, Fechner, 2004, Tomaszewski, 1961), it is noteworthy that on 5 September, an order from the DCC 1 commander placed part of the supply branch headquarters personnel at CDW's disposal. The seconded personnel was headed by qualified Major Zygmunt Kawecki. Simultaneously, part of the reserve and current food stocks was transferred out of DCC 1 in order to create a handy food warehouse in Zjazd Street. Moreover, CDW's supply branch was authorised to give stock issue instructions and orders to the management of DCC 1 army supply repositories to cover the current supply requirements of the troops defending the capital (Goebel, no date). It is also notable – although this is a separate issue – that on 4-6 September and in consultation with the Quartermaster General, General Trojanowski worked hard to provide the capital with the Commander-in-Chief's reserve armaments intended for the 21st, 30th and 36th march battalions initially forming the core defence forces of Warsaw. This happened because the reserve was stored in the central warehouses at Dęblin, while the district command had no weapons.

On 6 September, the District Corps 1 (DC 1) commander ordered for the command to be evacuated to Lwów. Remaining in Warsaw was only a small rear section (commander and chief of staff) and most of DCC 1's army service corps and supply branch. On 7 September, they moved with qualified Colonel Hyc from Mostowskich Palace to the Saska Kępa district. In view of the uncertainty as to how long Warsaw's left bank would hold out, the left-bank warehouse stocks were evacuated to the Praga district. The Praga outpost was to continue to execute the task assigned by the Quartermaster General, i.e. to supply the fighting armies (now four in total) and transport inland via the railways the provisions for the High Command (especially the ammunition from Palmiry). The former task, despite honest efforts, soon became unrealistic; the latter was suspended due to Warsaw's defence needs.

On the following day, Commander-in-Chief Chief of Staff Brigadier-General Waclaw Stachiewicz, who was still in Warsaw, appointed Major-General Juliusz Rómmel as commander of Army Group 'Warsaw', later transformed into the 'Warsaw' Army, also to include the remains of the DCC 1 personnel and the still-forming CDW. Qualified Colonel Jan Hyc was appointed its quartermaster (but this post was soon taken over by the former quartermaster of the 'Łódź' Army, qualified Lieutenant-Colonel Marian Kułakowski), while Colonel Władysław Goebel became chief of the supply branch. From 10 September, the supply branch chief operated at the army headquarters in Rakowiecka Street, while the remaining supply branch personnel was in the centre of left-bank Warsaw. The entire infrastructure created in peacetime by DCC 1 stayed with the personnel.

The task of provisioning the troops

At the beginning of the war, DC 1's supply branch had a relatively small set of logistical units and facilities at its disposal, including mainly Army Supplies Repository No. 1 at 54 Jagiellońska Street in Warsaw, with the 121st working company; field bakery command post with 17 teams of bakers and 4 catering stations deployed at Warsaw railway stations.

The commander of that unit, DC 1 quartermaster, did not yet have adequate staff as that was still being mobilised (much like the entire DC 1 in the first general mobilisation wave, to be ready on mobilisation day 6), or personnel to operate and service the rolling stock, or – for that matter – any staging and sentry units to man Warsaw's distribution and storage station, as they were either still in the process of mobilising or had not managed to arrive at their designated post. This had in fact been foreseen and so it was assumed the army supply corps would grow gradually, taking about 2 weeks to achieve full readiness to supply the fighting armies which by that time were to collect ammunition and food (except bread) from their own supplies (the idea was to limit the transport of supplies to a minimum while the railways were full to capacity with mobilised soldiers).

The accumulated supplies (both in the armies and in DCC 1 repositories) were supposed to last for 8 days, which combined with basic allowance stocks (5 days plus 2 days of 'R' rations) was to be sufficient for a total of 15 days of warfare. Afterwards, the responsibility for provisioning the combatants was to transfer to the civilian authorities, but as early as the 10th day from the mobilisation announcement the army could use warehouse stocks provided and replenished by the civilian government (although commanded by quartermasters' representatives) (Sulisławski, 1939).

The Polish Army food rations for the 'W' period are shown in Table 1.

Table 1. Polish Army food rations for the 'W' period

No.	Food	Basic ration	Unit of measurement
1.	Army bread	800	g
2.	Meat	300	g
3.	Legumes	150	g
4.	Potatoes	700	g
5.	Lard	40	g
6.	Fresh onions	15	g
7.	Sugar	25	g
8.	Preserved coffee	50	g
9.	Roots	0.5	g
10.	Seasoning flour	10	g
11.	Soap	5	g
12.	Vinegar	10	ml
13.	Cigarettes	10	pcs
14.	Salt	22	g
15.	Dried vegetables	1	g
16.	Matches	2	box

Source: The authors' own compilation based on organisational and technical data for army supply corps field work. Army Supply Branch, Warsaw 1939

Qualified Lieutenant-Colonel Zygmunt Plater Patonoff (Pajaczkowski, 1940) was seconded from General Staff Division 4 to coordinate the work of the distribution station in the third decade of August. According to surviving records, 210 freight carriages were expected to be used for supplying the 'Modlin' Army in the Warsaw area. For the 'Pomorze' Army, on the other hand, it was 490 carriages (they were to be allocated gradually, not immediately), 170 of which were at the army quartermaster's disposal, while 320 were commanded by Lieutenant-Colonel Platonoff. However, the size of the rolling stock envisaged for provisioning the other operational formations is unknown (Sulisławski, b.d.).

The war realities took a completely different turn, invalidating these plans, while the dynamically developing situation necessitated immediate and *ad hoc* measures, especially because, after 7 September, Warsaw's defence forces began to swell due to the stoppage of transports of the 5th Lwów Infantry Division and many other units.

After the establishment of the Command of the Defence of Warsaw led by Brigadier-General Walerian Czuma, its logistical operations had to handle several tasks at once (this was a chaotic process, partly due to contradictory orders from multiple command centres): to take over DCC 1's infrastructure; to secure supplies

for the future by capturing the resources located in the Warsaw area (including central warehouses for the 'Poznań' and 'Pomorze' Armies, which could no longer depart but stood waiting at the Warsaw train stations overflowing with vehicles); to provide daily supplies for the existing and newly-formed detachments and urban population.

All this was complicated by the unplanned evacuation of the military and civilian authorities, looking almost like an escape (the mass burning of files, the throwing of bundles of documents into the Vistula). Evacuation reached its fever pitch on 6-7 September, with the Quartermaster General's orders to evacuate Warsaw hospitals as well as Brigadier-General Trojanowski's order for military institutions under his command to leave the capital. The atmosphere was aggravated by an ill-considered radio address by the Commander-in-Chief's Head of Propaganda, qualified Colonel Roman Umiasztowski, calling all men capable of bearing arms to leave the capital.

It became a priority for the staff of the 'Warsaw' Army to curb the spreading chaos in order to be able to effectively carry out the main tasks assigned to the army commander. For this reason, priority status was given to the work of Division 4 under qualified Cavalry Lieutenant-Colonel Herman Braclawski. That commander had to prepare for long-haul defence relying on local resources which had to be captured in a very short time by tapping the supplies stored in the repositories, railway ramps, and rail carriages. Cooperation also had to be established with the army commander's civilian commissar to carry out the inspection, registration, requisitioning and collection of resources within the city and to exploit the resources located in the suburbs, increasing the food supply available to the army and population before the Germans approached. As the numbers alternately swelled and shrank, it was necessary to constantly re-calculate supply and food rations for the army and relief for the civilian population. This also involved the ordering, seizure and finally the distribution of transport resources to the commands, military units and municipal administration institutions, as well as defining the general conditions for the collection and disbursement of resources. Very quickly, it also became apparent that one of the priority tasks was to protect the army supplies (by decentralising them) from being destroyed by German aircraft and by the mounting artillery fire in the second half of September (Braclawski-Herman, 1944).

The execution of tasks during the September fighting

The food supply for the Warsaw defence units during combat was based primarily on the resources gathered by the DCC 1 supply branch. Despite the organisational adversity described earlier, the supply branch entities systematically accumulated food reserves. By the summer of 1939, the army warehouses contained flour, preserved coffee, canned meat, hardtack and oats. The other items were not yet available. They

only started to be purchased and stockpiled a few weeks before the start of the war, but this work could not be completed (Sulisławski, b.d.).

The events of 1 September did not paralyse the operations of DCC 1 which, by 5 September, had deployed all the emergency units envisioned in the mobilisation plan (Pawłowski, b.d.). Also later, despite the lack of contact with the Ministry of the Army, to which it was subordinate (the Ministry had been evacuated to the building at 5 Chocimska Street, and on 5 September, without notifying DCC, it left Warsaw), it continued to carry out its assigned activities, including those associated with provisioning. This was supplemented by a new task set by the Quartermaster General (operating in the wartime headquarters of the High Command in a newly-built edifice at 6a Rakowiecka Street), which was to evacuate inland the stocks of Main Armaments Repository No. 1 in Warsaw and its branches in Palmiry and Zegrze, from where several hundred rail carriages of armaments had to be taken out. Thus, the activities of DCC 1 were not limited to the administrative functions of the territorial command but included also – with whatever modest means available – preparing the capital for defence (Aleksandrowicz, b.d.).

As far as supplying the army in the field was concerned, the primary task was to supply ammunition and food to the 'Prusy' Army (this was a retreat army at the stage of formation and did not have – unlike the other armies – 15-day reserves), send ammunition to the 'Pomorze' Army (by improvised road vehicles), and – above all – to provide the army with bread. From 2 September, the first horse-drawn carriages with grain and other products began arriving at the warehouses from the suburbs of Warsaw. These deliveries continued uninterrupted until the fifth day of the war. Field bakeries were being opened, and according to the plans Warsaw and its environs were to supply the armies with 330,000 to 350,000 loaves a day (the number of loaves supplied daily for the whole country was 1,200,000). Very soon, however, the work of DCC 1 began to be hampered by problems with telephone and telegraph communications caused by air raids.

The air bombing also significantly hampered the operation of the distribution station directed by qualified Lieutenant Colonel Zygmunt Plater Platonoff. With support from DCC 1 staff, he succeeded in securing the transport of materials to and from the capital, but due to the systematic destruction by the German air force of tracks, railway stations and the rolling stock, these efforts were becoming futile, as the transports, even when organised and sent off on their way, increasingly rarely reached their destination.

The work of the distribution station was slowly dying down. In spite of that, on 7 September the Quartermaster General, sent a Hughes truck from the new headquarters of the Commander-in-Chief in Brześć, ordering for the supply of the 'Modlin,' 'Pomorze' and 'Poznań' Armies to be continued until a distribution station could open in Brześć, where qualified Lieutenant-Colonel Platonoff was to move (Likwidacja delegatury kwatermistrzowskiej Naczelnego Wodza w Warszawie,

Archiwum Instytutu Polskiego i Muzeum gen. Sikorskiego, sygn. A.II.15.5). On 8 September, qualified Lieutenant-Colonel Waclaw Grudniewicz, the Quartermaster General's delegate, who had remained in Warsaw, reported on the actual possibilities of supplying these armies, in view of the paralysis of the Warsaw railway junction (Meldunek ppłk dypl. Waclawa Grudniewicza do płk. Józefa Wiatra z 8 IX 1939, Archiwum Instytutu Polskiego i Muzeum gen. Sikorskiego, sygn. A.II.16). In the report, he stated that in order to continue deliveries he needed 350,000 loaves of bread a day, but that realistically he could only obtain 10,000 rationed portions from bakeries in Garwolin and Praga (even that number was out-of-date on 9-10 September after the German bombardment of Garwolin), so he asked that bread be sent to Mińsk Mazowiecki. On the other hand, he estimated the stocks of other products such as pork fat, coffee, oats, sugar, salt and cigarettes would last 10 days, hardtack – 3 days, canned meat – 2 days, and vegetables – 1 one day of continuing transports (Meldunek ppłk dypl. Waclawa Grudniewicza do płk. Józefa Wiatra z 8 IX 1939, Archiwum Instytutu Polskiego i Muzeum gen. Sikorskiego, sygn. A.II.16). As Lieutenant-Colonel Grudniewicz was sending his report to Colonel Józef Wiatr, the role and position of Warsaw, and thus the tasks of the supply branch within the capital, were rapidly changing. This was due to the repulsion of the first attempt by the Germans to capture the capital (8-9 September) and the preparations being made for its long-term defence.

The Command of the Defence of Warsaw, established on 4 September, was of a fully improvised nature, with all the possible consequences that this entailed. From the point of view of battlefield logistics, one of the major consequences was the coexistence of two command centres in one area for several days, which resulted in the overlapping of powers, further complicating an already confused situation. Despite the secondment of some personnel from DCC 1, including army supply corps staff, the CDW staff initially had little knowledge of the state of the resources located in Warsaw. For this reason, one of Brigadier-General Walerian Czuma's first decisions was to set up a task force headed by Major Władysław Płóciennik (he belonged to the team of the General Staff's delegate to the Warsaw Regional Railway Directorate) and assigned to inspect evacuation transports and select resources that could be used in the following days by the troops defending Warsaw. In turn, a group headed by qualified Lieutenant-Colonel Władysław Winiarski and supported by Major Juliusz Ulatowski received orders to identify and register the existing repositories and warehouses as quickly as possible, and to ensure that they were manned (Nawrocki, Fechner, 2004).

This was made difficult by the fact that, in obedience to General Trojanowski's order to evacuate military institutions from Warsaw, on 9 September at 5 AM a large part of the staff of the Army Supplies Repository in Jagiellońska Street left the city by car, followed an hour later by another column of 75 bakers and cooks marching along the route: Siedlce – Łuków – Lublin – Kowel to establish a new repository

there (Noyszewski, 1943). As a result, the main army supplies repository in Warsaw was left unmanned.

At the beginning of the main phase of the defence of the capital, thanks to the earlier efforts by DCC 1's supply branch office, CDW and civil administration, the 'Warsaw' Army had the following stock of food in the early second decade of September: hardtack, canned meat, preserved coffee, cigarettes and salt (600 thousand portions), baking flour and oats (2,500 tonnes). Thanks to daily deliveries of cattle to the slaughterhouse in Praga, the number of livestock ranged from 170 to 500 head, and of wounded horses from 200 to 500, with 50 head of cattle and about 30 horses slaughtered daily. The quantity of groats, seasoning flour (legumes) was estimated at 150 tonnes, and of rice at 500 tonnes; the quantity of sugar in the repository in Jagiellońska Street was 300 tonnes, and in the Prague harbour warehouses – 500 tonnes; there were about 150 tonnes of fresh lard and canned smoked lard, plus 100 tonnes of bacon (Goebel, n.d.).

At the time, the number of troops to be fed was estimated at around 100-120,000. Nevertheless, it was gradually increasing as a result of divisions, subdivisions and even individual soldiers arriving in Warsaw (survivors were gathered mainly at the Citadel and in the Powiśle district, in the 1st Cavalry Regiment and 1st Cavalry Artillery Division barracks). For this reason, in the second half of September, after the entry of Major-General Tadeusz Kutrzeba's troops into the garrison, the number of fed soldiers exceeded 180,000 (Pawłowski, b.d.). According to 'Warsaw' Army service corps estimates, the food supplies in its possession, even with slightly increasing manning levels, could allow, with the observance of pre-September standards, for the provision of food for some 30-40 days.

Nevertheless, the operational situation deteriorated with each passing day. Above all, at the end of the first half of September, the Germans, by encircling Warsaw, succeeded in cutting off the city from outside food supplies. On top of this, they are consistently and with great intensity conducted air bombings followed by artillery shelling. In many ways, these actions targeted the defenders' logistics chain and were supported by the German agents deployed in the city. On 12 September, the military mill at the Army Supplies Repository was put out of service due to damage, followed at the end of the second decade of September by another mill, leased by the army and also located in Praga. A few dozen hours after the artillery shelling began, the Germans completely destroyed the military bakery in Praga, producing 20,000 loaves a day, and soon, as a result of air bombing, they severely damaged the city bakery in Prądzyńskiego Street, producing 40,000 loaves daily. They also damaged numerous bakeries of the Warsaw magistrate and continuously bombed food warehouses in Jagiellońska and Ratuszowa Streets, the city slaughterhouse in Sierakowskiego Street, warehouses in Stawki Street, in Powązki and supplies packed into rail carriages at the Warsaw stations. During the air raids, the filter station facilities were damaged, including the fast filter factory, clean water tanks, slow filter factory and

large sections of the distribution network. This eventually led, after 24 September, to a complete lack of water in the water supply network and, in view of the small number of wells, to a very difficult living and epidemiological situation. There were also difficulties in the supply of electricity (Goebel, n.d., Braclawski-Herman, 1944).

In the second decade of September, supply branch officers took action to decentralise the supplies, concentrated mainly in Praga, by transporting and dispersing them in the left-bank area of Warsaw, in the City Centre, where tall tenement houses protected the *ad hoc* warehouses and their staff from artillery fire. From 14 to 22 September, several columns of cars and horse-drawn carriages were set up to serve the needs of the supply branch, transporting food continuously day and night. The largest depots were then established in the YMCA buildings, the Council of Ministers building, the Malicka Theatre, the Royal Castle, the Oaza restaurant in Wierzbowa Street and the municipal courts building in Leszno Street. In total, there were more than 30 of them. This made it possible to save a considerable part of the supplies, but it was also a great inconvenience for the defenders, as the individual improvised depots rarely contained all the articles, and the supplying troops had to go to several depots in order to receive all of the one- or two-day's supplies they were due. The fact that these depots were often spread out throughout the city (for safety reasons rather than any planning logic) made it difficult, or even impossible, to obtain all the supplies.

In order to regulate cooperation between the army and the civilian population, whose living conditions had deteriorated considerably as a result of the German encirclement, the army supply corps cell of the Civil Commissar was set up on 12 September through the efforts of the 'Warsaw' Army Supply Corpse, operated by Division 4 staff officers (among them qualified Captain Zygmunt Stablewski). In cooperation with the Civil Commissar, it was responsible for carrying out requisitions and payment of dues for seized materials and equipment, exploitation of resources, including food, in the foreground of the city, and the securing of materials requisitioned by the army (the requisitioning troops were headed by qualified Lieutenant-Colonel Władysław Winiarski). The army supply corps cell of the Civil Commissar also identified the needs of the civilian population, to whom the army provided mainly flour, sugar and rice. In view of the shortage of meat and the surplus of military horses, in the second decade of September, 200 to 300 wounded horses were handed over to the slaughterhouse every day, and the meat thus obtained was mostly provided to the civil authorities (Braclawski-Herman, 1944).

The growing difficulties in supplying both the combatants and the civilian population prompted the Army Commander to convene a briefing with the commanders and the Mayor of Warsaw, Stefan Starzyński, where it was decided to reduce the nutritional standards for the army by half with regard to bread and meat (to be partly replaced by rations of rice and sugar, of which there were plenty in storehouses) (Braclawski-Herman, 1944, Goebel, n.d., Likwidacja delegatury

kwaterymistrzowskiej Naczelnego Wodza w Warszawie, Archiwum Instytutu Polskiego i Muzeum gen. Sikorskiego, sygn. A.II.15.5, Pawłowski, b.d.). It should be noted, however, that these arrangements, which *de facto* came into force, were for unspecified reasons not reflected in the army order referred to by the researchers, according to which the feeding of troops was to continue in accordance with the 'W' duty standard and reduced only by 50 g of bread (Rozkaz Armii „Warszawa” 14 IX 1939, Centralne Archiwum Wojskowe, sygn. II/18/1, k. 4.).

A problem that many commanders had to face, especially where there were no field kitchens (the improvised units on the march did not have them, others lost them when breaking through to the capital), was cooking meals. This is where the civilian population came to their aid. A company commander from Mokotów recalls: “The food was delivered to the company dry, and the cooking was done on the spot by ladies from the Polish Red Cross who, with great sacrifice and risking their lives at the front line, cooked and served the food in basements with admirable punctuality.” (Chlebowski, 1945).

Along with the necessary restrictions on rations, strict control and recording of food stocks was introduced from 14 September. On that day, Colonel Goebel cancelled CDW's supply branch chief qualified Major Zygmunt Kawecki's right to issue rations to CDW troops and took direct control of the Castle warehouse. He also strictly forbade the issuing of reserve rations. As he himself recalled: ‘[...] the Rationing Office [the ‘Warsaw’ Army Rationing Office located in the building at 30 Kopernika Street], having at all times accurate records of food stocks levels in each warehouse, issued ration orders centrally to the managers of food warehouses, slaughterhouses, bakeries, and petroleum products warehouses, by keeping track of the warehouse stocks on an ongoing basis, and informed the army supply branch chief daily of the quantities of food still remaining.’ The troops collected supplies from the warehouses by their own means of transport. At the separate request of the divisions, the army quartermaster assigned car and horse columns to the great military unit or the divisions at his disposal (Goebel, n.d.).

At the turn of the second and third decades of September, changes were once again made to food rations. The largest rations were allotted to the fighting troops and the wounded, with rations of bread increased from 400 to 700 g and the reduced meat rations of 100 g maintained (see Table 2). Slightly smaller rations were set for the rear troops and the rallying stations (see Table 3), but still remaining at a relatively good level that did not cause dissatisfaction among the defenders of the capital, as confirmed by numerous memoirs. This is confirmed by the account of qualified Captain Stanisław Furmański, 5th Infantry Division quartermaster, and later of Brigadier-General Juliusz Zulauf's Operational Group: ‘[...] The food supply functioned efficiently throughout the siege and was sufficient despite the reduction in rations. The water situation was worse. After the destruction of the waterworks,

the few wells could not suffice for the civilian population and the army, so that water had to be drawn from the Vistula (Furmański, 1945).⁷ The size of these rations did not change until the capitulation. When the surrender was announced, the army quartermaster issued an order commanding all troops defending Warsaw to take food from the warehouses for the period up to and including 30 September. The remaining supplies were distributed to the civilian population.

In contrast to such issues as organisation, tactics or the course of combat operations, which have a rich literature, the logistics of the defence of Warsaw in September 1939, despite its fundamental importance for the survival of the defenders and civilians of the Polish capital, is a poorly researched subject. This article, based on a number of sources, including many hitherto unknown, fills this gap while showing the great importance of the human factor in the conduct of combat operations.

Table 2. Food rations for combat troops and military hospitals

No.	Food	Basic ration	Unit of measurement
1.	Army bread	700	g
2.	Meat	100	g
3.	Legumes	125	g
4.	Potatoes	700	g
5.	Lard	30	g
6.	Fresh onions	15	g
7.	Sugar	25	g
8.	Preserved coffee	50	g
9.	Roots	0.5	g
10.	Seasoning flour	10	g
11.	Soap	5	g
12.	Vinegar	10	ml
13.	Cigarettes	10	pcs
14.	Salt	22	g
15.	Dried vegetables	1	g
16.	Matches	1	box

Source: The author's own compilation based on data from the 'Warsaw' Army quartermaster's order of 20 September 1939

Table 3. Food rations for rear troops and formations

No.	Food	Basic ration	Unit of measurement
1.	Army bread	500 g	g
2.	Meat	100	g
3.	Legumes	100	g
4.	Potatoes	700	g
5.	Lard	25	g
6.	Fresh onions	15	g
7.	Sugar	15	g
8.	Preserved coffee	50	g
9.	Roots	0,5	g
10.	Seasoning flour	10	g
11.	Soap	5	g
12.	Vinegar	10	ml
13.	Cigarettes	10	pcs.
14.	Salt	22	g
15.	Dried vegetables	1	g
16.	Matches	1	box

Source: The author's own compilation based on data from the 'Warsaw' Army quartermaster's order of 20 September 1939

Conclusions

The organisation in September 1939 of food supplies for the Polish Army by the logistics services in Warsaw encountered numerous planning, organisational and practical problems. The greatest difficulties arose from the underestimation of supply and evacuation in operational planning, from the basing of supply chains almost exclusively on rail transport and the overdue mobilisation of the logistics services. This was compounded by the lack of a clear delineation of responsibilities, mutual dependencies and division of tasks among DCC 1 (which was preparing the defence of the capital city in addition to its regular administrative duties), CDW and the Command of the 'Warsaw' Army.

DCC 1 army supply corps, including the supply branch, was not fully prepared before September 1939 to carry out its tasks which were poorly designed and never tested in practice (the need to feed several battle operational formations using a supply system based on the railways very quickly paralysed by the German air force).

As Warsaw was not prepared for defence, no preparations were made to disperse and adequately secure food stores.

It was only thanks to the daring and resourcefulness of the officers and the dedication of the rank-and-file soldiers of the supply branch that it was possible to bring the chaos under control and, despite some difficulties, to organise adequate food for the defenders of the city and, in part, for the civilian population throughout the fighting. Nevertheless, if it had not been for qualified Colonel Jan Hyc and Colonel Władysław Goebel and their personnel, who used their knowledge and experience to build up an efficient service for the 'Warsaw' Army's supply branch, supply would have been paralysed and the defence of the city would probably have ended earlier.

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