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REMAINS OF A 1944 ARTILLERY POSITION IN MIEJSCE PIASTOWE, KROSNO COUNTY

ABSTRACT

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The article presents the results of rescue archaeological investigations conducted at Site 22 in Miejsce Piastowe. The excavations uncovered World War II remains associated with military activities during the Carpatho-Dukla Military Operation. A detailed analysis of the spatial organization of features and the distribution of artefacts enabled the reconstruction of the arrangement of howitzers and the associated trench infrastructure at the site. It also allowed for an estimation of the number of shells fired, thereby facilitating a reconstruction of the intensity of combat in the area. The findings confirm the presence of German artillery at this location in the second half of 1944, corroborating the course of events described in historical sources.

Keywords: artillery; archaeology of conflict; battlefield archaeology; Carpatho-Dukla Military Operation; trenches; World War II archaeology

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1. INTRODUCTION

In 2023, in connection with the construction of expressway S19, rescue excavations took place at Site 22 in Miejsce Piastowe, Krosno County, Podkarpackie Voivodeship, no. AZP 112-74/150 (Fig. 1; the excavations were conducted by the company Archeologiczny Serwis Konsultacyjno-Badawczy Mirosław Kuś; archaeological works were led by Mgr A. Lach). As a result, archaeological remains of World War II military operations were recorded in the northern and southern parts of the investigated area. During the excavations, a total of 29 ground structures related to the German artillery were uncovered and documented. The chronological attribution of the features was determined based on the historical material recovered from their fills, and in the case of twelve features – based on stratigraphic correlation (Fig. 2).

The site is located in the Jasło-Krosno Basin (Solon *et al.* 2018), on both sides of national road no. 28, between Miejsce Piastowe and Iwonicz. It is situated on a poorly pronounced fluvial terrace of the Iwoniczanka River and its minor tributaries.

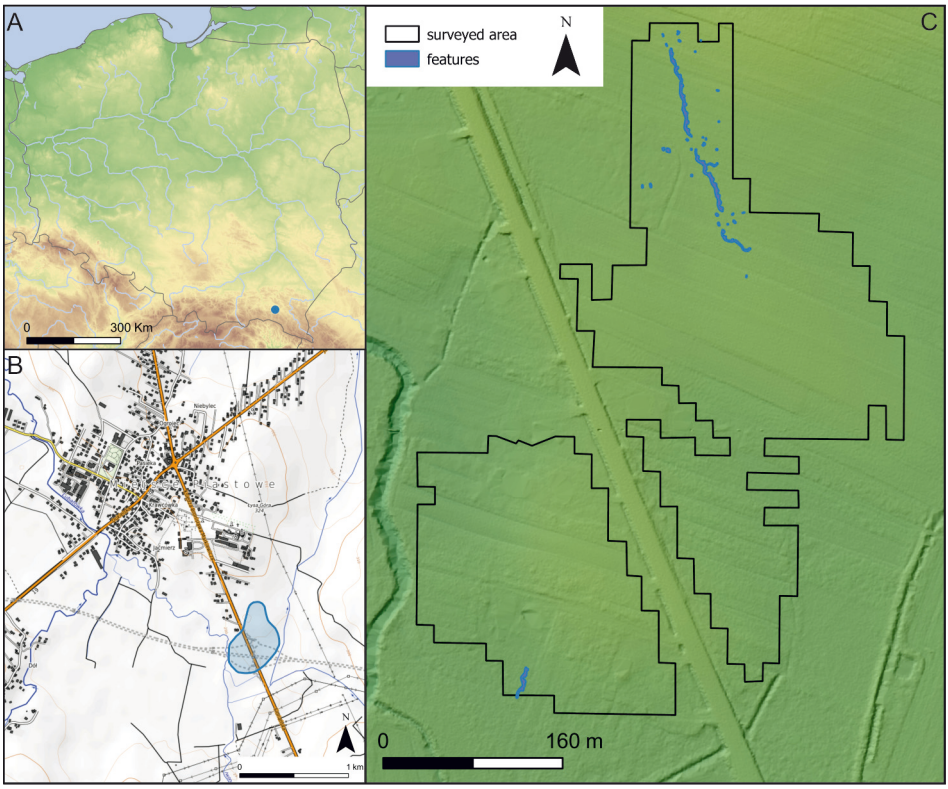

Fig. 1. Location of the site and research area coverage.
Drawing by E. Rydzewska

The most significant World War II military operations in the area took place in the second half of 1944, during the initial phase of the Carpatho-Dukla Operation (in older literature known also as the Prešov-Dukla Operation). Its aim was for the Soviets to break the line of German defence, capture the Dukla Pass and provide assistance to Slovak insurgents (Moskalenko 1974, 532-597). Miejsce Piastowe was located directly at the rear of the first line of German defences (Fig. 3), which ran from Gogołów to the western bank of the Wisłok River, then along it, through Krosno and Besko, and further to the south of Sanok. The work on the fortifications near Miejsce Piastowe did not begin until mid-August 1944. By 8 September 1944, only one-third of the planned field fortifications in this defensive section had been completed (Kotarski 1973, 235). The first line of fortifications extended from 1,200 to 2,000 m (Slipiec 2004, 89).

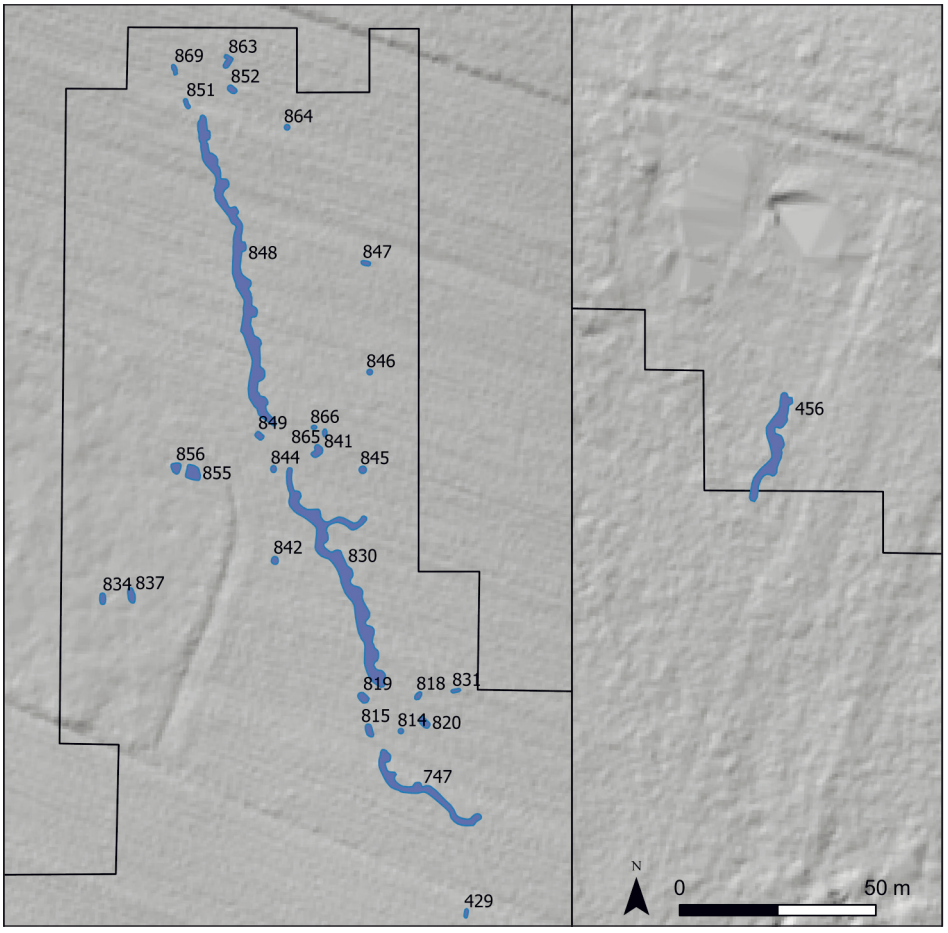

Fig. 2. Miejsce Piastowe, Krosno County, Site 22. Plan of the site.
Drawing by E. Rydzewska

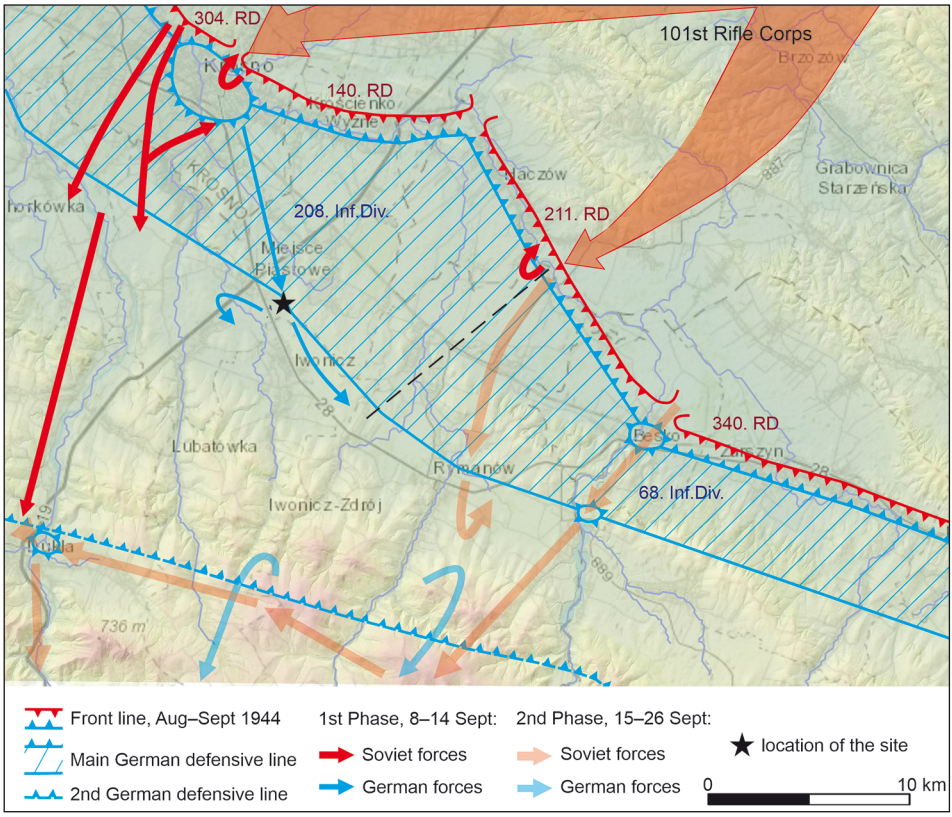

Fig. 3. Presov-Dukla operation from September 1944.
After Kotarski 1973, map 1; drawing by E. Rydzewska

On the German side, the main task on this section of the front was to prevent the Soviet troops from reaching the Dukla Pass, as it was the main passage leading to Slovakia. The region was defended by the 208th Infantry Division of the XI SS Corps (17th Army), which reached the Krosno area in mid-August. According to historical sources, the artillery was very weak in this section of the defence line. It consisted of 221 field guns and 140 mortars, which gave an average of 4.5 guns and mortars per 1 km of the front (Kotarski 1973, 234). On this section of the front, the Germans were opposed by the soldiers from the 101st Rifle Corps of the Red Army. The fighting began in the early morning of 8 September 1944. After a preparatory artillery barrage, the Soviet infantry, supported by tanks, attacked the front of the 208th Infantry Division. By the evening, it had managed to break through the German lines over an area of 8 km in width and 9 km in depth (Lexikon der Wehrmacht). After three days of fighting, the Russians captured Krosno, and a multi-day battle for the Dukla-Żmigród road began. The Dukla operation is considered one of the bloodiest battles of World War II on Polish soil.

2. RESEARCH RESULTS

Trenches

Four sections of fire trenches were discovered at the site. Three of them were found in the northern part of the investigated area (Fig. 4), and one shorter section was located in the southern part, approximately 420 m away from the others.

The northernmost, full-profile section of the trench (Feature 848) was approximately 55 m long. The trench ran in a zigzag pattern along a north-south axis, with a slight deviation. The individual bends were spaced 5-7 m apart. The width of the trench at the detection level for most of its length was about 1.2-1.4 m. The sides were mostly sloped, narrowing the width at the floor of the trench to about 0.6 m. In some sections on the western side, a small shelf was formed at a height of approximately 0.6 m from the floor of the trench. The maximum recorded depth of the trench was 1.17 m. Steps leading into the trench were located at its northern and southern ends. In its northern section, over a length of approximately 25 m, the floor of the trench was lined with concrete paving slabs. On the eastern side of the trench, 10 firing positions in the form of quadrilateral niches were dug, one in each section between the bends of the trench. Their shape in the upper part was disturbed, most likely due to the corners at the junction between the niche and the trench collapsing. Relative to the floor of the trench, the firing positions were shallower by about 0.2-0.3 m. Twelve artillery shell cases, a transport crate partition and a 23 mm aircraft shell were recovered from the feature.

Fig. 4. Miejsce Piastowe, Krosno County, Site 22. Aerial photo of the site: Feature 830 on the left, Feature 747 on the right. Photo by A. Lach

The next section of a full profile fire trench (Feature 840) was approximately 41 m long. The trench ran in a zigzag pattern from north-west to south-east. Its individual bends were spaced 4-6 m apart. The width of the trench at the detection level for most of its length was approximately 1.2-1.4 m. The sides were sloped, narrowing the width at the floor of the trench to 0.5-0.75 m. The maximum recorded depth of the trench was 1.14 m. On the northern side, the trench ended in a narrow corridor of 4 m in length and up to 1 m in depth. Steps leading into the trench were recorded at both its northern and southern ends. On the eastern side, 10 firing positions (analogous to those in the previous trench) were dug, one in each section between the bends of the trench. Relative to the floor of the trench, the niches were shallower by about 0.2-0.5 m. At 16 m on the northern side, a narrow corridor, approximately 7 m long and approximately 0.75 m deep, diverged from the trench and zigzagged in an eastward direction. A total of 131 artillery shell cases, the fin of a mortar shell with several fragments, metal remains of an artillery shell casing and a pocket knife were discovered in the fill of this feature.

The last fire trench (Feature 747) in this part of the site was approximately 23 m long. The trench ran in an irregular zigzag pattern from north-west to south-east. The width of the trench at the detection level for most of its length was between 0.7 m and 1.2 m. The sides were sloped, narrowing the width at the floor of the trench to 0.35-0.55 m. The maximum recorded depth of the trench was 0.93 m. Steps leading out of the trench were recorded at its northern end. Three firing positions were dug on the eastern side. Relative to the floor of the trench, the niches were shallower by about 0.3-0.5 m. The fill of this feature yielded 39 artillery shell cases, 6 primers and 3 bottle fragments.

The remote fire trench, recorded in the southern part of the excavated area (Feature 456), was approximately 20 m long. It ran in a zigzag pattern along a north-south axis. The width of the trench at the detection level for most of its length was between 0.7 m and 2.30 m. The sides were sloped, narrowing the width at the floor of the trench to 0.40-0.55 m. The maximum recorded depth of the trench was 0.86 m. Four fire steps in the form of quadrangular niches were dug on the eastern side of the trench. Relative to the floor of the trench, the niches were shallower by about 0.3 m. No archaeological material was recovered from this feature.

Trench infrastructure

The uncovered trenches were accompanied by 20 foxholes (Table 1). They were all oval or quadrangular pits, oriented along the NE-SW axis. Most of them were located in the gaps between the trenches.

Two features, most likely associated with ammunition storage, were discovered halfway along the northern line of trenches. They were located in the rear of the trenches, approximately 10 m from the main line of the installation. The larger of the two (Feature 855) was quadrangular in shape, measured 2.49 x 2.29 m and was 0.12 m deep. Its fill

contained charcoal and numerous burnt remains. Two artillery shell cases and completely corroded remains of at least four transport crate covers were discovered inside it. The second example (Feature 856) was in the shape of an irregular, shallow pit measuring 1.77 x 1.64 m. A layer of burnt material and the remains of three completely corroded transport crate covers were discovered inside its fill.

In the foreground of the trench line, three features of an almost circular shape and with similar diameters of approximately 0.75 to 1 m and depths of approximately 0.8-0.9 m were discovered (Features 845, 846, 864). A single primer was found in the fill of one of them. Given the nature and location of the features, it appears that they may be the remains of cesspits, probably constructed during the digging of the trenches.

Table 1. List of foxholes from Site 22 in Miejsce Piastowe

Feature	Shape	Profile	Dimensions in cm	Depth in cm	Inventory
429	rectangular	concave	140x51	7	7 artillery shell casings
814	rectangular	rectangular	79x58	19	9 primers
815	oval	irregular	216x107	63	
818	oval	rectangular	216x107	63	
819	oval	rectangular	172x120	79	3 primers
820	oval	rectangular	202x115	69	artillery shell casing; 9 primers
831	rectangular	rectangular	148x53	61	
834	oval	rectangular	174x90	64	
837	oval	irregular	174x90	59	
841	L-shaped	irregular	211x157	91	8 primers
842	oval	concave	101x119	79	
844	rectangular	concave	172x1202	7	
847	rectangular	concave	144x70	51	
849	rectangular	stepped	134x89	83	7 artillery shell casings
851	rectangular	stepped	159x63	51	22 primers
852	rectangular	stepped	150x92	68	fragments of a stick grenade; 2 artillery shell casings
863	L-shaped	irregular	194x141	111	3 burnt boards from ammunition boxes; 8 steel shell cases; 3 transport crate covers; fragment of a bottle
865	oval	concave	115x55	18	3 primers
866	oval	concave	80x57	72	
869	rectangular	stepped	166x64	51	6 artillery shell casings

Description of artefacts

10.5 cm shell cases

The most numerous among the artefacts recovered are the remains of German 10.5 cm calibre cases used in the leFH 18, leFH 18(M) and leFH 18/40 light field howitzer (Pataj 1975, 270, 291). A total of 210 such items were found, with Feature 830 yielding their largest number (131 pieces, Fig. 5). All the specimens recovered were made of steel (*cf.,* German... 148-151, figs 105-107). The shells were either one-piece specimens, made from a single piece of steel; two-piece specimens, with the casing and the base pressed together (Fig. 6: b); or consisted of multiple parts joined with screws (Fig. 6: a). Due to advanced corrosion, no stamped markings have been preserved on their bases. Most of the uncovered shell cases had primers installed, and, because they were fired, they bear an impact mark left by the firing pin. In the case of 11 shell cases, their primers had been unscrewed.

Primers

Apart from the shell cases, the most common artefacts are primers (62 pieces; German... 148, 155, figs 105 and 107), which are directly associated with the former items. On two primers unscrewed from their cases, it was possible to partially read the markings in the form of digits: 1944, which indicate the year of their manufacture (Fig. 6: c-d). Considering that primers were screwed into shell cases during production, the large number of artefacts of this type discovered at the site is puzzling.

Fig. 5. Artefacts from the features: 10.5 cm artillery shells discovered in Feature 830. Photo by A. Lach

Fig. 6. Artefacts from the features: shells from Feature 722 (a) and 820 (b); primers from Feature 820 (c-d). Photo by A. Lach

Artillery shell

During the exploration of Feature 830, an artillery shell packaged in a special individual box was recovered from the bottom of the feature (German... 146, 147, fig. 104; see Figs 7 and 8). This packaging was made of wooden slats joined together by metal bars forming its frame. The projectile was placed in a stabilising clamp and secured with a webbing or leather belt. It was packaged with the fuse already installed and set for immediate action. After removing it from the box, the shell was instantly ready for use. The find is no longer extant, upon discovery in the excavation, sappers were called in; they removed the shell from the packaging and took it away. What remained of the packaging were nine metal components of the container in the form of destroyed frame fragments and locking elements (Fig. 9).

Fig. 7. Firing position, summer 1941.
After: Engelmann 1995

Fig. 8. leFH 18 gun on the Oder front. Under the foot, a carrier for six shells.
After: Engelmann 1995

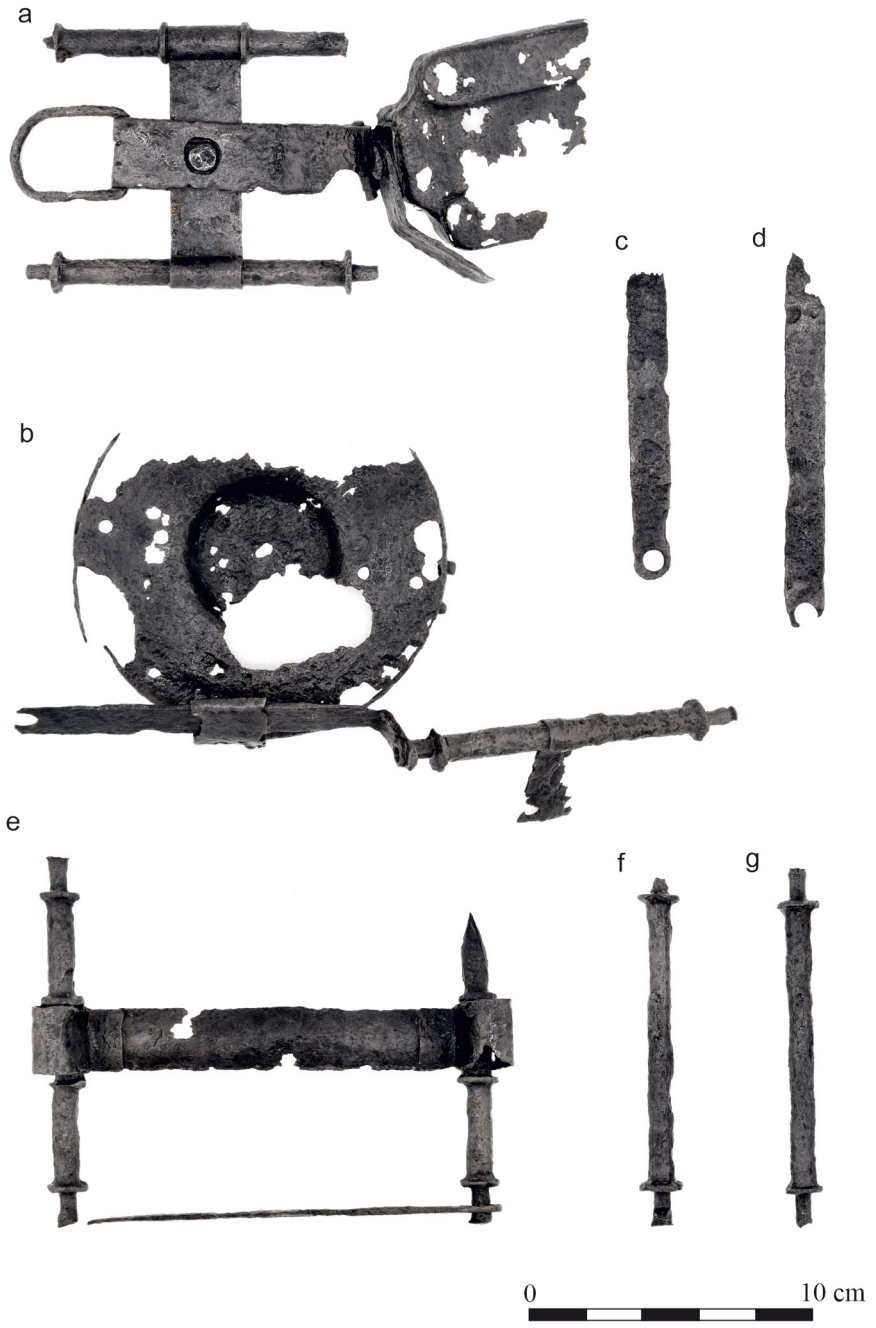

Fig. 9. Metal element of artillery shell packaging from Feature 830.
Photo by A. Lach

Ammunition boxes

The excavations at the site yielded three fragments of burnt boards from ammunition boxes. As indicated by the circular grooves on the inside of the boards, they came from boxes designed for 10.5 cm shell cases. Preserved on two of the fragments are markings drawn in white paint. The first fragment bears the inscription in the form of letters "le. F. H." (Leichte Feldhaubitze), indicating that the contents were intended for a light field howitzer (Fig. 10: a). A fragment of the marking preserved on the second board is in the form of two rows of letters: "Heer..." at the top is the remnant of the inscription Heeres-Munition, indicating that the crate contained military ammunition, while "Gesa..." in the lower row is the remnant of the word Gesamtgew, meaning total weight (Fig. 10: b). This was standard information placed on ammunition boxes.

Fig. 10. Artefacts from the features: fragments of ammunition crates from Feature 863 (a-b); 23 mm shell from Feature 848 (c). Photo by A. Lach

Fig. 11. Remains of transporting crates from Feature 848.
Photo by A. Lach

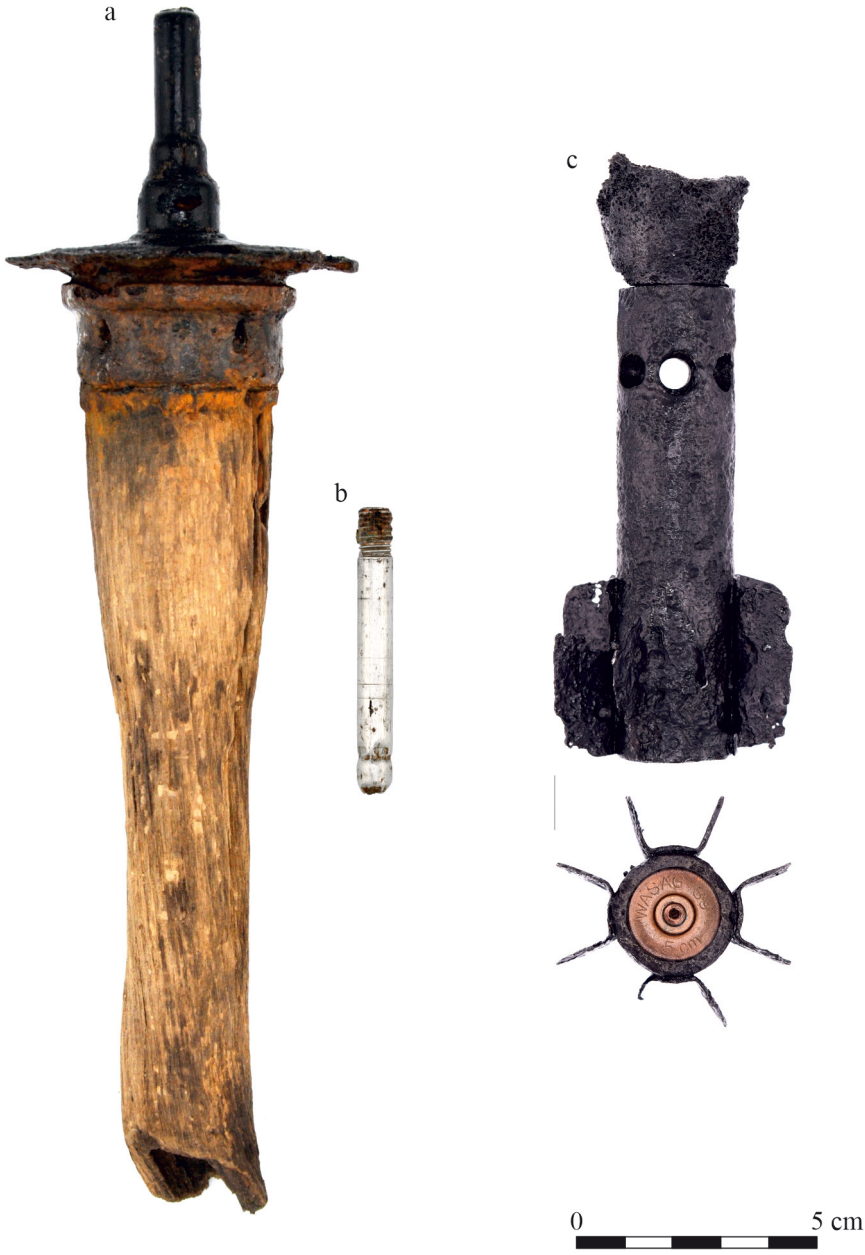

Fig. 12. Artefacts from the features: stick grenade from Feature 852 (a-b); mortar grenade from Feature 830 (c). Photo by A. Lach

Transport crates

The site also yielded the remnants of three steel covers (Feature 863; Fig. 11: a) and an aluminium partition (Feature 848; Fig. 11: b). The remains of covers of this type were also recorded in the top levels of Features 855 and 856; however, they were completely corroded. The pieces in question are the remains of transport crates used to carry six shell cases with a propelling charge. Such a case had a wood and metal frame, two covers on leather straps, an aluminium inner partition and webbing straps for carrying the crate (Fig. 8).

Mortar shell

A stabiliser of a German 5cm calibre mortar shell was discovered in Feature 830 (Fig. 12: c; *cf.*, GEO, 530, fig. 542). Together with a small, preserved fragment of the casing, it measures approximately 10 cm in length. An eight-fin assembly and six gas ports arranged circumferentially in a single row have been preserved. As indicated by the state of the primer, the projectile had been fired. The primer bears the following legible markings: WASAG – 39 – 5 cm. The marking on the body above the flash holes is illegible. Three shrapnel pieces, probably from the explosion of the projectile, were also discovered a short distance from the tail. Rounds of this type were intended for the 5cm leGr Wr 36 mortars, used by the German army during the early stage of World War II. Towards the end of the War, line units replaced it with the heavier 81mm calibre mortar (Bryja 1996, 118).

Stick hand grenade

Feature 852 yielded a destroyed German Model 39 stick hand grenade (Stielhandgranate 39). The bottom part of the head, with a detonator socket, set on a wooden handle and two small fragments of the handle's lower body with a cut-out for a ferrule have been preserved (Fig. 12: a). Discovered inside the handle was a destroyed Bz. 39 fuse in the form of an aluminium tube (Fig. 12: b). The artefact represents the basic type of grenade used by the German army during World War II (see Skotnicki 1997, 64-63).

23 mm projectile

Discovered in the fill of Feature 848, in are M81, was a Soviet BZ shell, a newer-type armour-piercing incendiary shell for a 23 x 152 mm B cartridge (Fig. 10: c; *cf.*, Koll 2009, 186-188). The preserved length of the projectile is approximately 8 cm. It has a hardened steel core with a remnant of a windshield and incendiary compound. The projectile has a driving band with visible grooves left by the barrel thread, indicating that it had been fired. This type of round was developed for the VYa-23 autocannon, 23 mm calibre, used from 1942 in the Soviet Union as an on-board weapon of the Il-2 ground-attack aircraft (Shirokorad 1999, 112-115).

Pocket knife

Found in one of the trenches (Feature 830) was a small, folded penknife, about 6.5 cm long (Fig. 13: b). Its handle scales are flat and made of light-coloured plastic, probably celluloid. They were attached with three copper rivets. The penknife most likely had only one blade, residually preserved inside the handle. It is impossible to say with certainty whether the uncovered knife was the property of a German soldier or some civilian who lost it when backfilling the trenches. During World War II, the German army did not have a regulation penknife (Sáiz 2009, 266-267), and knives obtained from the civilian market were in common use.

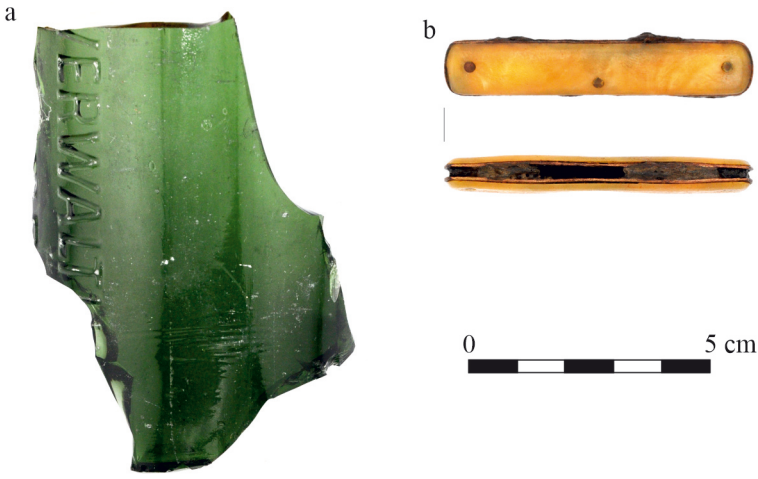

Fig. 13. Artefacts from the features: bottle fragment from Feature 747 (a); pocket knife from Feature 830 (b). Photo by A. Lach

Fig. 14. Bottom of Feature 848 lined with concrete paving slabs. Photo by A. Lach

Bottles

During the excavation of the site, three bottle fragments were recovered from Feature 747, while one bottle fragment was found in Feature 863. On the body fragment of a green bottle from Feature 747, there is a fragmentarily preserved inscription: "VERWALTU..." (Fig. 13: a). The full inscription most likely read: GRAFENORTER SAUER – BRUNNEN VERWALTUNG – FRIEDRICH WEBER (*cf.* MyViMu, FRIEDRICH WEBER), which means that the artefact is a German bottle from the mineral water bottling plant at 31 Klasztorna Street in Wrocław (Wenzel 1906, 175, 409, 410).

Paving slabs

At its northern end, the bottom of Feature 848 – a fire trench – was lined over a length of about 25 m with approximately 150 concrete paving slabs (Fig. 14). The slabs were squares with a side of 30 cm and thickness of 4.5 cm. They had been laid in two rows. Most of the slabs used were whole, and only a few were fragmented.

3. ANALYSIS

The recovered artefacts clearly indicate that the discovered features date to the Second World War, specifically the second half of 1944. Most of the features are the remains of ground positions of a German leFH 18 gun battery protected by an accompanying line of trenches.

The position uncovered consisted of at least three howitzers arranged in a straight line at intervals of 30 to 60 metres, which can be concluded based on the spatial layout of the features at the site and the structure of artillery regiments comprising German infantry divisions, known from the literature. Howitzer batteries in the infantry divisions of the *Wehrmacht* ordinarily consisted of four guns; however, as a result of losses incurred, maintaining the default status proved impossible in many cases, and most infantry divisions had three-gun batteries (Bryja 1996, 25).

For divisional artillery guns, round or roughly triangular dug-in firing positions (German: Geschützestellung) were constructed, which were usually surrounded by solid parapets providing protection against counter-battery fire (Rottman 2004, 36). No gun emplacements of individual cannons have been preserved at the site, which may mean that the guns stood directly on the ground or were only slightly dug into the topsoil, thus leaving no characteristic traces. Based on the uncovered spatial layout of the features at the site and the diagrams available in German sources (*cf.*, Bildheft..., figs 30 and 31; Fleischer 2004, 52, 53), it was possible to reconstruct the positioning of the individual guns. According to the artillery position layout schemes used by the Wehrmacht, the guns were most probably located in the gaps between individual sections of the rifle trench (Fig. 15). Each gun was accompanied by dug-in structures intended to serve as shelters (German: Unterschiupfe),

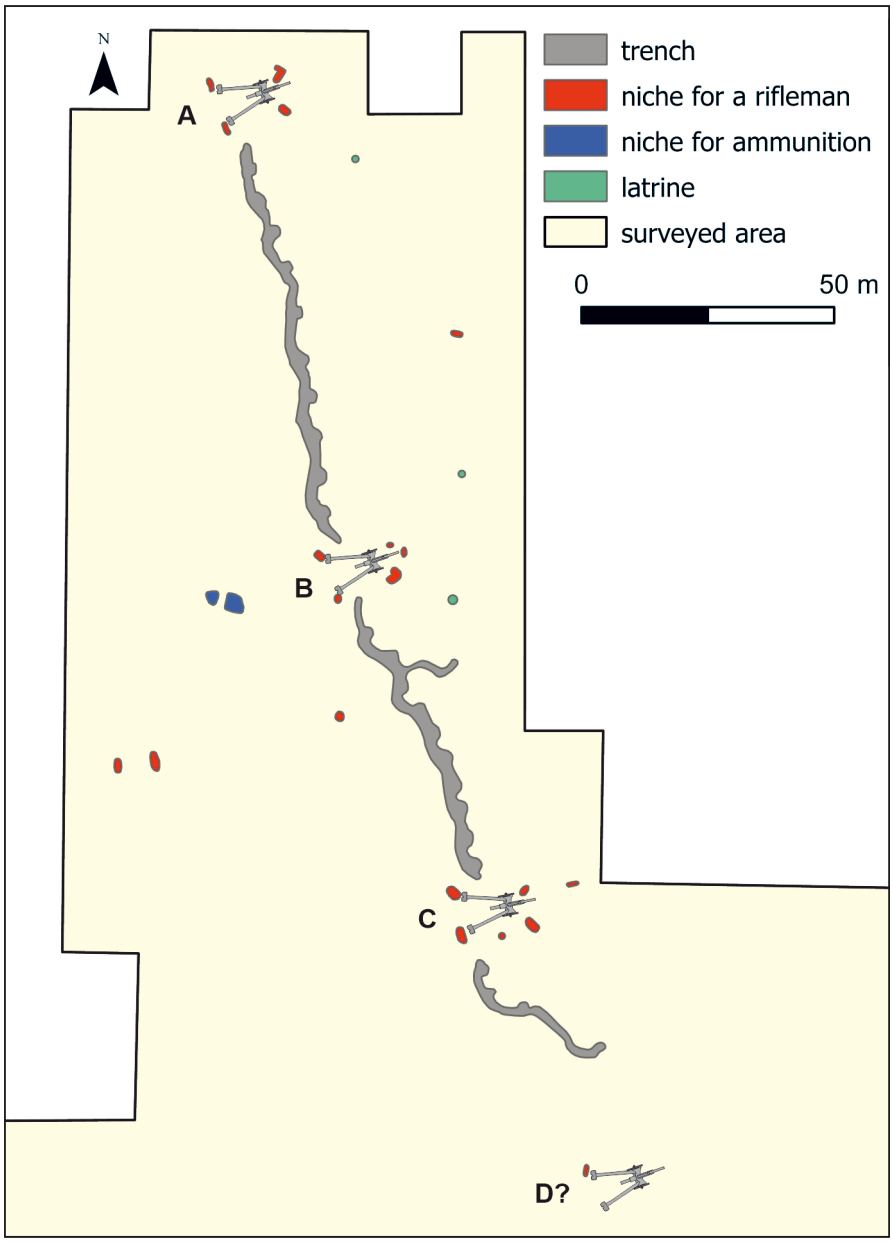

Fig. 15. Reconstruction of the artillery arrangement at Miejsce Piastowe, Krosno County, Site 22. Drawing by E. Rydzewska

ammunition niches (German: Munitionsnischen) and anti-tank positions (German: Panzerdeckungslöchern) for a soldier with an anti-tank weapon.

For the purposes of this study, the guns have been assigned the letters from A to D. The northernmost Gun A was located between Features 851, 852, 863 and 869. Gun B was positioned in a gap in the trench line, between Features 841, 844, 849, 865 and 866. Gun C, like the previous ones, stood in a gap in the communication trench, between Features 814, 815, 818, 819 and 820. If the battery had consisted of four cannons, it can be assumed that the fourth gun was located near Feature 429 (Gun D).

A full-profile fire trench with east-facing fire steps (Feature 848) was constructed between Gun A and Gun B. A similar trench (Feature 830) was dug between guns B and C. Another trench, which, due to its shape and size, should be considered unfinished, ran from Gun C in a southerly direction (Feature 747). Taking all this into account, it can be assumed that the small-sized Features 814 and 866 (Table 1) are probably imprints left by the foot of one of the gun supports rather than destroyed remains of foxholes. Feature 456, a short fire trench the furthest removed from the others, was probably constructed to secure the battery position from the Iwonicz side or it may be the remains of a subsequent artillery position under preparation.

The vast majority of the World War II artefacts discovered during the excavations are related to the German field howitzer positions and their shelling attacks. The investigated site yielded 210 artillery shell cases; however, it should be assumed that the battery stationed at this location could have fired significantly more shells. This possibility is indicated by the very uneven distribution of the shell cases discovered at the site. Most cases, as many as 139, were found near Gun B, then near Gun C – 51 cases, and near guns A and D – 18 and 7 cases, respectively. The 139 shell cases found in the features near Gun B may indicate that a similar number of shells were fired from the other howitzers. It is difficult to determine what percentage of shell cases was deposited in the features. Therefore, it can be estimated that the number of shells fired ranged from about 50 to about 150 per gun. The leFH 18 howitzer had a range of 10.675 to 12.325 kilometres, depending on the variant (Engelmann 1995, 13-18).

4. CONCLUSION

The artillery position uncovered was most likely constructed in the last days of August 1944. It was built following the standard principles employed by German troops at the time for establishing such positions; however, all evidence indicates that the work was not completed. According to an account by a resident of Miejsce Piastowe, Józef Rajs (2014, 31), before the start of the Soviet offensive, the Germans established a field depot for artillery ammunition in the parish cemetery in Miejsce Piastowe. During the day, in the adjacent fields, German soldiers would arrange positions for the guns that were soon to arrive.

One day, the Germans who were working in the fields were attacked by two Soviet planes that arrived unexpectedly from the east. The Germans, who suffered from the airborne gunfire and light bombs, supposedly incurred heavy losses in the raid. The positions mentioned in the account are probably the discovered site, located approximately 500 m from the cemetery. A remnant of the aforementioned raid may be the Soviet BZ missile, used in the Il-2 aircraft, which was found in Feature 848.

The artillery battery that was stationed at the discovered position was most likely part of the 208th Artillery Regiment of the 208th Infantry Division that defended this section of the front. The battery fired from this position during the initial period of the offensive of the Prešov-Dukla Operation, *i.e.*, on 8-9 September 1944. After the Soviet army broke through the defence line, the Germans withdrew from Miejsce Piastowe, abandoning their positions and ammunition depot. The artillery ammunition left behind by the German troops was taken by the Russians to the Łężany airfield and detonated there (Rajs 2014, 31). Over time, the area of the artillery position was cleaned up by collecting and burning the wooden pieces of artillery ordnance. The remaining artillery shell cases were thrown into the nearby structures, which were then levelled.

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