

KOKNESE FRONT FORTIFICATIONS. TOO BIG TO BE SEEN

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Abstract

The article is focused on the history of Koknese Fortress Front fortifications which were built from September 1700 to May 1701 in order to enhance the defence power of Koknese Fortress. The total length of the defence line exceeded 4 km. The line contained 25 redoubts.

After the loss of Spilve battle close to Riga, the Saxon troops retreated from Koknese, on 25 July 1701 Koknese Fortress was blown up and after that was not used for military purposes anymore. The outer defence line of Koknese Fortress never faced military attacks and after 1701 was abandoned, partially levelled by agriculture work, destroyed by activities of the First and the Second World Wars, building of houses, roads and motorway, establishing a cemetery on one of the earthworks, flooding by Pļaviņas hydroelectric power station, etc.

At present the front defence system of Koknese Fortress has partially survived, but until the last years the particular system of defence line had not been clearly identified. Now it has been done comparing an image of Koknese from 1701 with the results of aerial and traditional reconnaissance.

Koknese front fortification line is a unique monument under circumstances of Latvia.

Keywords: *Northern War, front defence system, redoubt.*

Koknese is situated at the Daugava River in present day Latvia. Stone castle in Koknese was built by Riga archbishop after 1209. In the run of time, Koknese Castle many times changed its rulers. In September 1700, during the Northern War, the fortress was occupied by Russian and Saxon troops. To enhance the defence power of Koknese Fortress and following the military doctrine not to allow attackers with their cannons approach the fortress, about 10–12,000 soldiers from September 1700 up to May 1701 built Koknese Fortress front fortifications. The total length of the defence line exceeded 4 km. The line contained 25 redoubts.

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Koknese front fortification line is a unique monument under circumstances of Latvia and not only Latvia, because elsewhere, cities developing, fortifications of this kind have disappeared, but Koknese as a city wasting away, the front fortification line has largely retained its integrity.

Koknese Hillfort, stone castle with a forecourt, ancient city, their fortifications, respective ancient burial sites, cemeteries and other features are intertwined cultural values significant for Latvia and the whole Baltics as well, which is of archaeological, architectonic, historical, scenic and other importance. Koknese complex has been and is extensively studied, but still there is no uniform, summarizing monographic research of Koknese yet. Koknese as a fortress, which was situated on strategically important site at the main waterway, the Daugava, was incessantly improved according to military ideas of its time. Further transformations changed or even wiped out the military structures of bygone times. This especially refers to the final stage of the existence of Koknese Fortress in the 16th–17th cent. and the beginning of the 18th cent., when former fortifications were replaced with earth fortifications. The end of Koknese as fortress is associated with the Great Northern War, which, especially in its initial stage, took place on the territory of today's Latvia [for more detail, see: Dunsdorfs 1962].

On 7 November 1700, Koknese Fortress was reconquered from Swedes by Saxon army.¹ Following military idea of the time, in order to push off the attacking enemy and their artillery [Bürger 2014], in late autumn of 1700 and in the spring of 1701, when garrison under command of Saxon colonel Adam Heinrich Bose was in Koknese, more than 4 km long semi-circular front fortification line was built

¹ The aim of the article is not to give a broader generalization of Koknese history, but only to describe the front fortification line of Koknese Fortress in its present condition. Here and henceforth historical reference concerning the last period of the existence of Koknese Fortress and building of front fortifications, has been drawn mainly from studies by R. Malvess and J. Blese [Malvess 1968; Blese 1998].

around Koknese main fortress at a certain distance from it. The line consisted of 25 larger and smaller redoubts interconnected by ditches. Similar fortifications were built also round other important 17th–18th cent. fortifications. The task of these front fortifications was not to allow the enemy approach close to the main fortification, so that they could be efficiently fired at by the artillery. However, military praxis showed that such extended fortifications could be successfully defended only when the defenders had a large garrison at their disposal; otherwise, the long fortification line was quite easily passed by the enemy.

Koknese garrison (troops were deployed also in neighbouring manors) contained one battalion; later they were joined by another battalion, manned mainly by Russian and Lithuanian soldiers, who probably must have done the main work in building Koknese front fortification line. Living force of the garrison is estimated to have been approximately 10–12,000 men. Besides the front fortification line, in 1700/1701 fortifications of Koknese Fortress were improved and rebuilt, a closed road was fixed between the Fortress and the Daugava, which ensured undisturbed retreat of the army to the opposite bank of the Daugava.

Koknese front fortifications did not witness direct military activities. Greater part of Koknese Saxon garrison at the beginning of the summer of 1701, went to Riga, where on 9 July they suffered a heavy defeat in Spilve meadows. On 24 July 1701, A. H. Bose, commander of Koknese garrison, fearing attack by the Swedes and realizing that he would not be able to defend Koknese with their own forces, retreated across the Daugava to Courland along a previously built raft bridge. On the next day, Koknese Castle was blown up when a fuse lighted up by the Saxons reached the explosives. After that the Fortress was not maintained anymore; front fortification also lost their significance.

It should be assumed that Koknese Fortress had been earlier encircled by earth fortifications built either by defenders of the Castle or assailants, because in the 17th cent. Koknese Castle was several times captured and reconquered in mutual Swedish – Polish – Russian wars.

A lithograph depicting blowing up Koknese Fortress in 1701 is essential in understanding and investigating Koknese front fortification line, which has been accurately displayed in the lithograph (Figure 1). Author of the lithograph is not known with certainty; it is possible that the author was Swedish engineer Johan Liten [Malvess 1968a: 43–44]. J. C. Brotze wrote that this copper engraving was wrong in many ways, and J. C. Brotze's commentators agree with him [Broce 2002: 259], but R. Malvess asked them to be critical about such statement [Malvess 1968a: 43–44]. Possibly depiction of blowing up the fortress and movement of the troops might be treated more critically, but depiction of redoubts of the front fortification line at least on the right bank of the Pērse at Koknese church seems quite feasible.

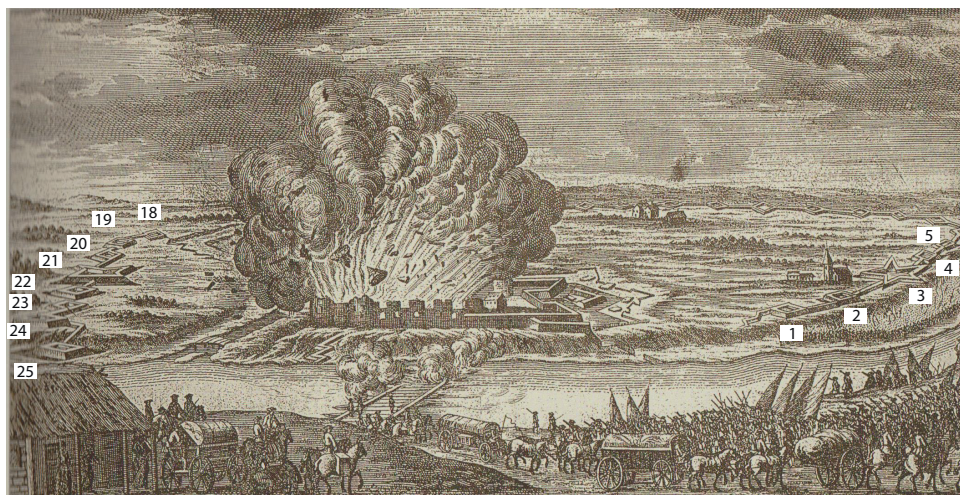


Figure 1. Koknese Fortress with front fortification line in 1701 (in: Broce, 2002, 259), with the present numbering of localized and matched redoubts. Prepared by J. Urtāns, drawn by R. Delters.

Comparing the location of redoubts of the right bank of the Pērse with the redoubts shown in the lithograph, it can be stated that type of redoubts and their layout both in the depiction and *in situ* is appropriate. In the lithograph, the central four-pointed redoubt has been shown as the largest, as it is also *in situ*. However, in NE part of the front fortification system in the lithograph, more redoubts have been shown than exist in reality.

On the whole, Koknese front fortifications have not attracted greater researchers' interest, because this interest has always been connected rather with Koknese Castle itself, castle forecourt and site of the city. Evidence of more recent condition of Koknese front fortification has been provided in work by student of local history J. Blese. He noted that in the most artificially built front fortification – corner fortification at Koknese church – in 1896, graveyard of Löwenstern family, owners of Koknese manor, was fixed, later – churchyard and Koknese village cemetery [Blese 1998: 63]. J. Blese wrote also about fortification line and its condition in N Koknese and on the right bank of the Pērse [Blese 1998: 63–64, 116]. For the time being, results of Koknese front fortification research have been published only in short thesis articles [Urtāns 2010; Urtāns 2020]. Military fortifications of the beginning of Early Modern Times in Latvia have not been much studied in a broader sense either [Brežgo 1936; Stubavs 1974; Ose 2007; Ose 2008].

Koknese front fortification line – redoubts and moats connecting them – had been built in very short time in order to push off possible attackers – Swedes – from opportunity to get nearer Koknese Fortress defended by the Saxons and to fire at

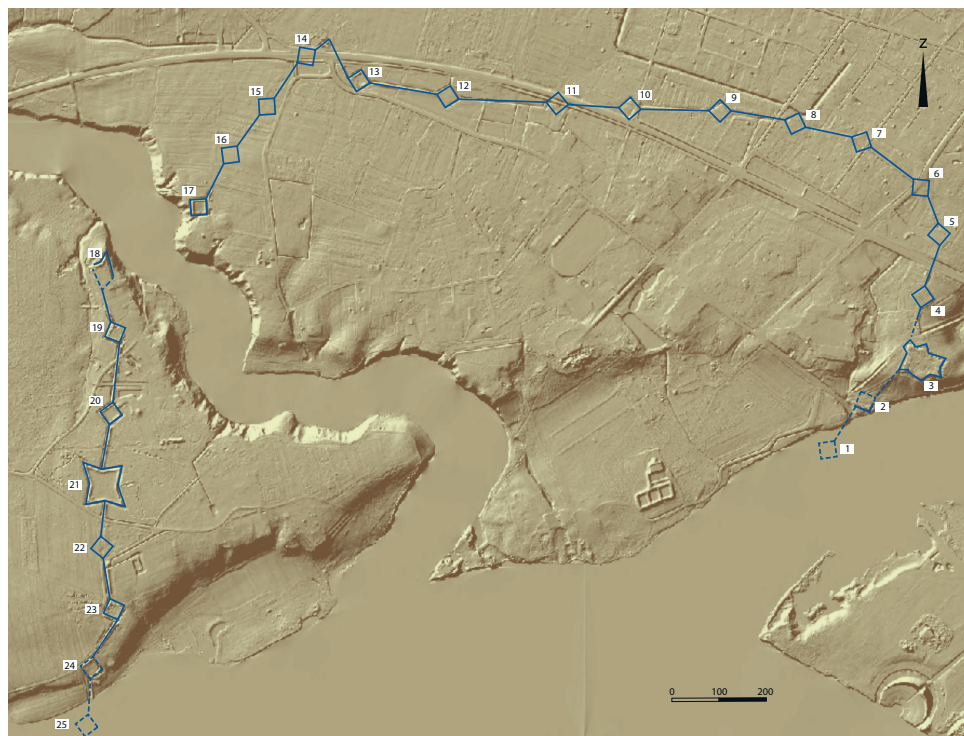


Figure 2. Koknese front fortification line in aerial laser scanning with the present numeration of redoubts. Prepared by J. Urtāns, drawn by R. Delves.

them directly. Redoubts had been shaped in such a way that from each redoubt they could flank and fire at approach to neighbouring redoubt and so not to allow approaching of enemy. The line of redoubts to E from Koknese Fortress behind the valley of the Pērse River in direct line is situated approximately 0.8 km from the Fortress, on N – at a distance of about 1.1–1.2 km, but on NE side the line is farther from the Fortress, about 1.3–1.4 km. All the redoubts had been connected by a fortification ditch (Figures 2, 3); earth dug out from the ditch seems to have been thrown on the inner side of the ditch throughout the whole system, making a parapet. The present width of the ditch is about 5–6 m, width of the parapet is about 8–9 m. Redoubts generally are all alike according to their shape and size. In the plan they are square-shaped, although the square is not always geometrically precise, one glacis is approximately 40 m long (Figure 4). The redoubt was encircled by a ditch on all four sides (Figures 5, 6), but inside the redoubt there had been a parapet which has hardly ever survived. The redoubts are interconnected by ditch which normally begins from a corner of the redoubt. Distances between redoubts are not equal; they vary from about 90 to about 150 m (where distance can be detected).



Figure 3. Koknese front fortification line on contemporary map with the present numeration of redoubts. Prepared by J. Urtāns, drawn by R. Delvers.

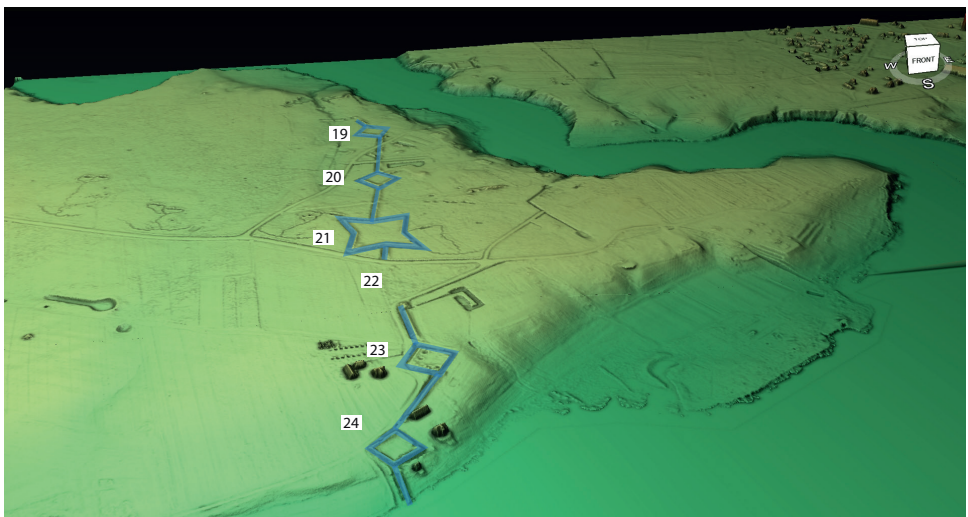


Figure 4. Redoubts 19–24. 3D model. Developed by G. Kalniņš.



Figure 5. East fortification ditch of redoubt 3, with a breach and today's cemetery.
Photo by J. Urtāns.



Figure 6. North glacis of redoubt 17 and ditch. Photo by J. Urtāns.

Two redoubts in E and W parts of the fortification line (redoubts 3 and 21) were larger and shaped differently; they had significance of a more central fortification (Figures 4, 5). Koknese front fortification line has not been shaped with geometric accuracy.

In order to understand the fortification system easier, each redoubt localized *in situ* has been given a consecutive number; this redoubt, if its conformity is grounded, has been allotted the same number in the lithograph as well. Concordance of redoubts 5–17 cannot be stated with certainty, that is why they have not been numbered in the lithograph. In the lithograph, part of the front fortification line is covered up by the smoke column rising from the blown-up Koknese Fortress. The redoubts have been numbered from the bank of the Daugava above the Fortress, then consecutively along a large semicircle through today's Koknese to the Pērse River, across the river and then as far as the Daugava below Koknese Fortress (Figures 1–3). Description of each redoubt is followed by characterisation of the fortification ditch leading to the next redoubt. In localization of the redoubts, aerial laser scanning data and aerial photograph taken for needs of reconnaissance during the Second World War (hereinafter – aerial photograph), have been used.

Redoubt 1. In the lithograph, the four-cornered redoubt on the high bank of the Daugava to NW from Koknese Lutheran church was depicted as the extreme one in the fortification line. This redoubt seems to have been levelled in later times – its outline cannot be seen on maps before flooding, now probable remains of the redoubt are covered by Pļaviņas water-reservoir.

Remains of **Redoubt 2** had not been previously noticed. It is located to SE from Koknese Lutheran church. In the lithograph the redoubt has been depicted four-cornered. *In situ* the redoubt is marked by one corner with glacis¹, directed towards the Daugava; SE glacis and the ditch have been partly preserved. Both glacis of the redoubt connect at the corner towards the Daugava. Ditch that should lead to redoubts 1 and 3 along the slope of the Daugava Valley, has not survived. Redoubt 2 had been situated where relief of the earth has been considerably transformed in later times.

Redoubt 3 in the lithograph has been depicted as a fortification in the shape of a five-pointed star, where each point of the star could be regarded as a separate bastion. Site of the redoubt was later adjusted to fixing up a cemetery, therefore the common shape of the redoubt as a five-pointed star, separate glacis and ditches cannot be discerned with certainty anymore. Outer shape of the redoubt has been best preserved in the direction towards the Daugava, where a bastion and its glacis on NE (Figure 5) and SW sides has been fairly well preserved, as well as a ditch to NE

¹ Hereinafter glacis – a levelled slope of redoubt.

and SW from the bastion. To S the ditch of the redoubt turns, possibly, pointing at S bastion, but it has been largely levelled and transformed because of the cemetery. It is possible that half of SW bastion has survived. Inside of the redoubt and all the corner bastions is occupied by graves. The fortification ditch in the direction to redoubt 4 is not visible. Redoubt 3 has been one of the two main redoubts of the fortification line, the most important one on E side of the fortification system, it is estimated to have been 130 m across. Redoubt 3 was situated on a high bank of the Daugava; it had a good command of vast surroundings.

Redoubt 4 had been situated between redoubt 3 and the present Rīga – Daugavpils motorway. On site of the redoubt, relief has been transformed; now there is a field there and the redoubt cannot be seen. Its outline is fairly well visible in aerial photograph and aerial laser scanning, by which it can be judged that the redoubt had been four-cornered. The same can be seen in the lithograph.

Redoubt 5 – its site can be only suspected; it does not appear in aerial laser scanning either, but it can be identified in aerial photograph. On its probable site there is a wavy field with several ditches, but their association with redoubt 5 cannot be detected. It is possible that next to the motorway on the Daugava side, some features of fortification ditch have been preserved; on the other side of the motorway the ditch is not visible. It is possible that between redoubts 5 and 6, there had been one more redoubt, but the relief there is so much transformed that for the time being it cannot be verified.

Redoubt 6 and the appropriate fortification ditches have not been preserved and cannot be discerned *in situ*. Judging by the aerial photograph where the place of redoubt can be suspected, it had been situated on the intersection of *1905. gada, Mednieku* and *Māras* streets, in place where *1905. gada* street makes a small S-shaped bend. The redoubt had been built in the place where the fortification line turns to W. The ditch between redoubts 6 and 7 has been partly preserved, visually distinguishable, parallel to *Māras* street.

Redoubt 7 had been located in territory covered with private houses, in the vicinity of *Saules* and *Hanzas* street crossing, has not survived, but in aerial photograph and aerial laser scanning its outline can be discerned.

Redoubt 8 has not survived, its outline can be traced in aerial photograph, on the site of the redoubt, next to *Poruka* street, now private houses are situated. In aerial laser scanning the ditch between redoubts 7 and 8 can be traced, as well as between redoubts 8 and 9; *in situ* this ditch cannot be perceived.

Redoubt 9 is situated in territory of allotments (Figure 7). The redoubt is well marked by the corner directed to N with ditches and glacis on both sides. The redoubt had been quadrangular, its S side has been levelled and cannot be discerned. The fortification ditch from redoubt 9 against redoubt 8 fairly well marks itself only



Figure 7. Remains of redoubt 9 and fortification ditches from bird's eye view.

Photo by J. Urtāns.

as far as *Poruka* street; beyond *Poruka* street, where redoubt 9 must have been, the ditch does not mark itself anymore.

Redoubt 10 had been situated near the crossroads of *Zemeņu* street and Daugavpils motorway; *Zemeņu* street crosses the redoubt levelling its E edge. N part of the redoubt has been preserved, which also has been levelled out, but the corner and both glacis of the redoubt can be distinguished. The ditch between redoubts 10 and 11 can be seen well, it is a border between allotments in N and vacant territory in S.

Redoubt 11 had been situated exactly on the site of Rīga – Daugavpils motorway, it was destroyed by construction of the motorway. Probably some remains of the redoubt can be observed next to the motorway, on its S side. In more recent times, a footpath above the place of possible remains of the redoubt was built. The ditch between redoubts 10 and 11 had been in the place of the motorway or next to it, and has not been preserved.

Redoubt 12 is situated on S side of Daugavpils motorway, to E from Raģāļu inn. The redoubt has been well preserved, all four ditches and glacis of the redoubt are distinguishable, as well as ditch between redoubts 11 and 12. The redoubt is likely to have been levelled out in more recent times. Ditches of N corner of the redoubt have been joined by amelioration ditch, dug in more recent times.



Figure 8. Redoubt 13 and fortification ditches from bird's eye view. Photo by J. Urtāns.

Redoubt 13 is situated between the old and the new Rīga – Daugavpils motorway (Figure 8). The redoubt, like the fortification ditch between redoubts 12 and 13, can be well distinguished. It is not quite clear how the fortification ditch joins the W corner of the redoubt. There is a ditch, dug in more recent times, which at N corner of the redoubt is connected with amelioration ditch, which as a culvert runs below the new Rīga – Daugavpils motorway. If it is assumed that this ditch had been built in the place of the old fortification ditch, it might direct to redoubt 14. This ditch can be suspected also in the aerial photograph.

Redoubt 14 and its vicinity in the lithograph is covered by smoke and fire column of the blown-up Koknese Fortress, that is why situation of the redoubt in this area cannot be detected in the lithograph. Aerial laser scanning as if shows triangle-shaped dug-up ground on N side of the motorway at the garden edge of a house, but this ditch has been shaped in a different manner and cannot be associated with the old fortification system. Looking at the aerial laser scanning, on site of redoubt 15, the ditch from its N corner is directed towards redoubt 14. Outline of the redoubt can be discerned in aerial photograph; a road ran across the place of the redoubt at that time. Nowadays Rīga – Daugavpils motorway goes across redoubt 14, completely destroying it.

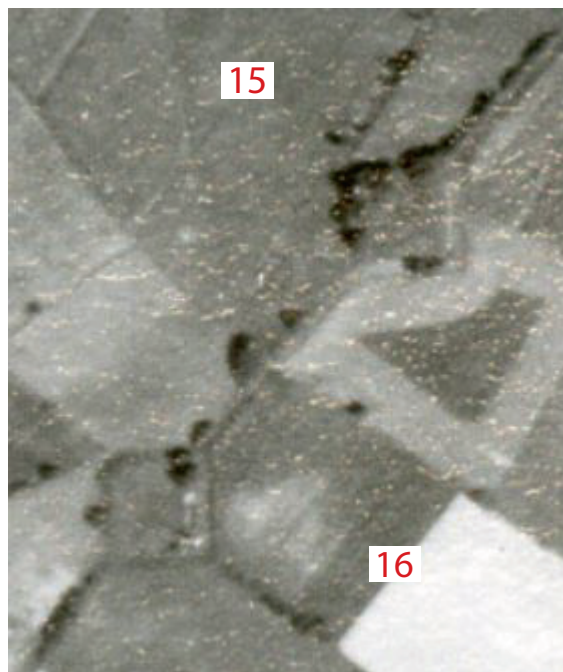


Figure 9. Redoubts 15 and 16, and connecting ditches, not levelled yet. Aerial photograph of the Second World War.

Redoubt 15 and its ditches have been completely levelled, it has no outer visual signs, but in the aerial photograph, aerial laser scanning and modern aerial fixation, the four-cornered redoubt and its N side ditch can be unmistakably distinguished. On the site of the redoubt, which is situated next to *Daugavas* street, there is a field and a small protrusion in relief. The ditch connecting redoubts 15 and 16 cannot be distinguished in aerial laser scanning; it is well visible in aerial photograph. It is likely to have been destroyed by construction of *Daugavas* and *Blaumaņa* streets, because the probable route of the ditch should lead exactly along these streets.

Redoubt 16 has been totally levelled, now in its place there is a small protrusion in relief and a field. Outline of the redoubt can be noticed in aerial laser scanning; it can be seen also in aerial photograph (Figure 9).

Redoubt 17 is situated on the left bank in the former Valley of the Pērse River between *Krasti* and *Smaidas* homesteads. Four-cornered redoubt has retained all four glacis and a ditch (Figure 6), only N glacis and the ditch have been disturbed by some older dug-ups. The ditch encircles the whole redoubt, but opposite the steep bank of the Pērse, where it was of less importance, the ditch is shallower. Inside the redoubt, a parapet has been preserved at 1–1.5 m height, which might have been its initial height. In direction towards redoubt 16, at NE corner of redoubt 17, a ditch

begins, which ends at the driveway to *Krasti* homestead, but this ditch seems to have been dug in more modern times. Redoubt 17 is the last one on the left bank of the Pērse River. It is not visible in the lithograph, because it is screened by the smoke column of the explosion. Redoubt 17 has been best preserved of all the redoubts of the line.

Redoubt 18 is the first one on the right bank of the Pērse River. Of this redoubt a triangular projection on N side, enclosed by a ditch, and a ditch on E side opposite the Pērse, have been preserved. W part of the redoubt has been dug off, its inner and S part have been levelled; now there is a homestead yard here. Formations cannot be surely associated with the old fortification, because the ditch opposite the Pērse is too long to be one glacis of the redoubt, but only two key redoubts have the large triangular projection; however, redoubt 18 in the lithograph has been depicted as a simple four-cornered fortification (Figure 1). It can be assumed that there is a mistake in the lithograph, and redoubt 18 also had been one of key sites of the fortification line. Ditch to redoubt 19 is not visible *in situ*, but it as if marks itself in aerial laser scanning; closer to redoubt 19, the ditch marks itself better.

Redoubt 19 has well-preserved W part with corner protuberance, ditches and edge embankment, but in E part, approximately 1/3 of the redoubt has been dug up and levelled out; a homestead road leads past the redoubt here. S corner of the redoubt marks itself, too. Ditch from redoubt 19 to redoubt 20 is well marked, a parapet has been preserved on E side. The ditch is crossed by homestead roads in two places. It seems that between these two roads now in use, there had been an older road, where the ditch has become shallow. The road in S part has been built in more recent times, in order to make direct access to recreation home.

In the spring of 2004, a profile of the ditch and parapet was filed in digging over this road in the course of archaeological supervision (Figure 10). It turned out that the rampart at its base was approximately 8–9 m wide, but fortification ditch – 5.5 m wide. The depth of the fortification ditch from surface level of water at the moment of fixation exceeded one metre, however, it must be taken into account that the ditch might have become shallow in more modern times. Height of the rampart above the former soil level is 1.8 m. Judging by the profile of section, the process of building the rampart might have been as follows: at the beginning turf was dug off the surface of the ditch to-be, and was thrown where the rampart would be, close to the ditch on undisturbed layer of turf (dug-off layer of turf is slightly thicker where it is closer to the ditch); then the loamy soil dug out of the ditch was put on the black layer of turf and filled the nucleus of the rampart to-be. It is possible that there had been some kind of fencing (*fascine* ?), which kept together the soil thrown out of the ditch. This delimiting enclosure is probably indicated by a steep abrupt edge or step in the section of rampart. Defenders of the fortification could move along it. When



Figure 10. Section of rampart between redoubts 19 and 20. Photo by J. Urtāns.

the upper part of the fortification rampart was built, sand was poured there, which had been transported from some other place, because there is no light sand in the proximity of rampart section. The rampart had been built in such a way that it was steeper against the ditch, but gently sloping on the opposite side. It is possible that the sand had not been heaped up simultaneously with construction of the lower part of the rampart, i. e., sand had not been put immediately on the black and loamy soil dug out of the ditch, but sometime a bit later. Perhaps this could be explained by building of the rampart in two stages – in the autumn of 1700 and then in the spring and the beginning of summer of 1701. The heaped-up rampart started to subside in the course of time, filling up and covering the step. On checking both dug-up edges and section site with metal detector, no metal objects were found that might be associated with the time of building the fortification line.

Redoubt 20 has been well preserved. All four glacis and ditches are clearly outlined (Figure 4). In more recent times soil has been shoved on its NE glacis and the ditch from outside. Inside the redoubt, a parapet up to one metre high has been preserved. The ditch to S of the redoubt has also been well preserved. It runs against the breach of the central part of redoubt 21, not the corner as in other redoubts. The ditch between both the redoubts has been ravaged by a road, once used, which is now overgrown, possibly associated with the First World War.

Redoubt 21 should be considered to be one of the two key redoubts, it is large and differently shaped from other redoubts (Figure 4). Possibly, by importance on W side of the fortification line, it has been similar to redoubt 3 on E side of the fortification line. Redoubt 21 has been preserved relatively well. It had been four-cornered, but each glacis had a breach in the central part. Therefore, the four corners of the redoubt resemble bastions. Inner parapet has survived in places inside the redoubt. NW corner has been damaged by dug-up ground which has been connected to, possibly, trenches of the First World War. Similarly, but to less extent, E glacis and SE and SW corners of the redoubt have been damaged. The redoubt is larger than other redoubts by its dimensions (approximately 130 and 140 m between opposite corners), but the height and sizes of the ditches are roughly the same as other redoubts. From the breach point of S glacis of the redoubt, a ditch splits off towards redoubt 22, which ends at the road that leads to Bilstiņi. On the other side of the road there is a field where the ditch is not visible anymore.

Redoubt 22 has not been preserved; there is a field in its place, but the redoubt can be seen well in aerial photograph; remains of the redoubt mark themselves in aerial laser scanning. Existence of the redoubt on this site is also confirmed by the lithograph. S corner of the redoubt had been in the place where there is a sharp bend of the road to homestead. Here parallel to the homestead road, on its e side, a ditch begins with a parapet on E side, which further joins redoubt 23. Ditch at the N corner of redoubt 23 has been filled up and levelled.

Redoubt 23 is marked by breach fortification system; here the fortification line turns more to the W. Fortification ditches and glacis of the redoubt are well outlined (Figure 4). Inside the redoubt, in its NW and SW there are pits of more recent dug-ups. From NW and SW right past the redoubt, partly levelling the fortification ditch, leads the homestead road, which is further parallel to the ditch with a parapet between redoubts 23 and 24. In the place where the ditch is connected with redoubt 24, it has been filled up, building the driveway into the yard of *Circeņi* homestead.

Redoubt 24 is situated next to *Circeņi* homestead, to W from the latter and joins in the household. Well outlined redoubt (Figure 4) has become a peculiar yard enclosed by the rampart with several dug-up places. NE glacis of the redoubt had been levelled lower in earlier times. There is a dug-up of the rampart at SE corner of the redoubt, which allows entrance inside the redoubt. Inner parapet in SE part on the top has been dug over with war-time trenches. A bigger dug-up is also in SW glacis of the redoubt. To S from the corner of the redoubt, unmistakable fortification ditch with a parapet on E side stretches as far as the edge of the Daugava water-reservoir.

Existence of **Redoubt 25** is confirmed by lithograph. The existence of redoubt 25 is indirectly testified also by a ditch that had been dug to S from redoubt 24 (Figure 4). The outline of the redoubt is probably shown in aerial photograph.



Figure 11. View of probable redoubt 25 and fortifications on the slope of the Daugava Valley. Postcard. 1930s. J. Urtāns' collection.

A protuberance in probable place of redoubt 25 is seen also in an old postcard (Figure 11). This place has been flooded, but it is not unlikely that the redoubt has been preserved under the water.

In Koknese front fortification line seven (12–13, 17, 20–21, 23–24) redoubts with appropriate ditches and inner formation have been well preserved, five (2–3, 9–10, 18) redoubts have been partly preserved, in aerial laser scanning materials sites of six redoubts (5–8, 11, 15–16, 22) can be suspected, there is lack of convincing information concerning two (1 and 25) redoubts, because the sites have been flooded by waters of the Daugava water-reservoir (Figures 2, 3).

Koknese front fortification as a historical monument has been included in lists of cultural monuments protected by the State, which were published in 1959 [*Kultūras pieminekļu saraksts Latvijas PSR teritorijā* 1959: 153, Nr. 13] and 1969 [*Latvijas PSR kultūras pieminekļu saraksts* 1969: 188, Nr. 1052]; in further lists of cultural monuments under state protection, this monument has not been included anymore. Judging by the first two lists of the monuments, it was not the whole Koknese front fortification system that was protected, but the redoubt in which

later Koknese cemetery was fixed up. Koknese front fortifications have never been protected by the state as a uniform complex; now this complex has altogether fallen out of the protection system of cultural monuments. Nowadays according to data of aerial laser scanning and other surface-based technologies, it is possible to specify the condition of Koknese front fortifications, thus preparing material for possible state protection of Koknese front fortifications as a cultural monument. If decision were made concerning partial protection of the fortification line as a cultural monument, then better-preserved parts of the line should be more likely put under protection; the lost parts of the system might be marked. Existence and condition of preservation of the fortification system in the Daugava river-bed should be verified if there such opportunity arose.

Protection of Koknese front fortification line as a probable cultural monument is hindered by different degrees of preservation of the line elements, lack of information and certain ignorance among the local community, inexistent opportunity to perceive the whole line as entirety, the vast dimensions of the line, fragmented ownership of land, different ways of land usage, development of Koknese as a populated place, and other factors.

Koknese front fortification line can be traced in the whole length, more than 4 km, this is a unique monument under circumstances of Latvia and not only Latvia, because, for example, Rīga front fortifications have completely disappeared in the course of the city development, but while Koknese as a city was falling into decay, the fortification line has largely retained its integrity. Koknese front fortifications are grand by their size and as a whole can be perceived only with the help of modern technologies, because otherwise the observer sees only a couple of fortification redoubts.

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