

# **Shelling of Voroshilovskiy District, Donetsk using 152 mm rifled artillery on August 14, 2014.**

*PUBLIC INVESTIGATION*

*Donetsk 28.01.2022*

*Author: Ivan Aleksandrovich Kopyl*

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**ABBREVIATIONS**

UAF - Ukrainian Armed Forces

DonNTU - Donetsk National Technical University

OSCE - Organization for Security and Cooperation in Europe

IMB - Independent Mechanized Brigade

HES - high explosive fragmentation shell

SPM - self-propelled mortar

SMM - Special Monitoring Mission

UAF - Ukrainian Armed Formations

ESR - electroslag remelting process

## PREAMBLE

In August 2014, active hostilities took place in the Donetsk region. On August 12 and 13, Ukrainian armed formations (hereinafter UAF) conducted offensive battles in the Donetsk direction and undertook multiple shell attacks on five cities in Donbass (Donetsk, Horlivka, Pervomaisk, Ilovaisk and Krasny Luch)<sup>1</sup>.

On August 14, UAF artillery was actively firing at residential areas of Donetsk during the whole day. Six districts of the city were affected, as a result of shelling, 11 civilians were killed and 8 got wounds of varying severity<sup>2</sup>.

Voroshilovskiy District of Donetsk also came under artillery fire at about 12:20 a.m. local time. The following civilian facilities suffered: The 1st Municipal Hospital, "Green Plaza" shopping and entertainment center, educational buildings and laboratories of the Donetsk National Technical University (hereinafter referred to as DonNTU), and the building of the city prosecution office. Significant damage was done to the housing stock.<sup>3</sup> **As a result of this shelling, three people were killed<sup>4</sup> and at least five people were injured<sup>5</sup>.**

It is worth noting that this event was recorded in the daily report of the OSCE SMM dated August 15, 2014<sup>6</sup>. The report indicated inter alia that the SMM team observed no military facilities in the vicinity the area under fire.

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<sup>1</sup> Summary reports from the Novorossiia militia as of August 14, 2014. Top War Military Review website. URL: <https://topwar.ru/56198-svodki-ot-opolcheniya-novorossii-za-14-avgusta-2014-goda4.html> (accessed on: 28.01.2022);

<sup>2</sup> 15.08.2014 Information as of 9:30. 11 civilians were killed in Donetsk in a day [archived version] Official website of the Donetsk mayor and city council [www.mer.dn.ua](http://www.mer.dn.ua) URL: [https://web.archive.org/web/20140817231555/http://www.lukyanchenko.donetsk.ua/news\\_echo.php?id\\_news=9947](https://web.archive.org/web/20140817231555/http://www.lukyanchenko.donetsk.ua/news_echo.php?id_news=9947) (accessed on: 28.01.2022).

<sup>3</sup> Novorossiia: Summary reports as of August 14, 2014 [published on 15/08/2014] Military Observer website. URL: <https://waronline.info/ukraine/novorossiia-operativnaya-svodka-za-14-avgusta-2014-goda.html> (accessed on 28.01.2022).

<sup>4</sup> Trade centers and the building of DonNTU are shelled in Donetsk [[published on 14.08.2014] URL: [http://news.sevas.com/world/obstrel\\_donecka\\_14\\_avgusta\\_2014](http://news.sevas.com/world/obstrel_donecka_14_avgusta_2014) (accessed on 28.01.2022).

<sup>5</sup> Summary reports from the Novorossiia militia as of August 14, 2014 [published on 15/08/2014] Top War Military Review website. URL: <https://topwar.ru/56198-svodki-ot-opolcheniya-novorossii-za-14-avgusta-2014-goda4.html> (accessed on: 28.01.2022).

<sup>6</sup> Latest from OSCE Special Monitoring Mission (SMM) to Ukraine based on information received as of 18:00 (Kyiv time), August 15, 2014 [published on 15.08.2014] OSCE website. URL: <https://www.osce.org/ru/special-monitoring-mission-to-ukraine/386744> (accessed on: 28.01.2022).

## INCIDENT LOCATION

This investigation will consider the shelling of the Voroshilovskiy District of Donetsk, which took place on August 14, 2014 at about 12:20<sup>7</sup> and was carried out using 152 mm rifled artillery.

After analyzing the eyewitnesses' testimony, the photo and video materials, and having examined the scene, we were able to identify **ten** shell hits (see Fig. 1).

**Shell hit 1** (see Fig. 2, Fig. 3, Fig. 4, Fig. 5). The shell hit the northern wall of a multi-storey residential building No. 58A in Artyom Str. As a result of the projectile detonation between the third and fourth floors, a recess was formed in the wall of the building, elongated along the axis of the main scatter of fragments. There is a line of potholes on the surface of the asphalt pavement in front of the said house; these potholes were left by the main stream of fragments, crossing the road diagonally. Fragments of this projectile wounded a woman, who was going in the street near the corner at 60, Artyom Str., and also killed a man who was on the street near the corner at 75/77, Artyom Str.

**Shell hit 2** (see Fig. 6, Fig. 7). A shell hit the ground surface approximately 15 meters south-east of the south-eastern corner of the residential building at 58B, Artyom Str., Donetsk. The projectile detonation resulted in a shell crater.

**Shell hit 3** (see Fig. 8). A shell hit the base of the western wall of the DonNTU educational building No. 2 (at 58V, Artyom Str). The projectile detonation resulted in a shell crater on the asphalt surface in the immediate vicinity of the wall. Multiple holes from the fragments were formed in the wall.

**Shell hit 4** (see Fig. 9, Fig. 10). A shell hit the asphalt surface at approximately 60 meters to the west from the south-western corner of the DonNTU educational building No. 2 (at 58V, Artyom Str). The blast wave and fragments destroyed part of a one-story building located to the south of the impact site.

**Shell hit 5** (see Fig. 11, Fig. 12, Fig. 13). A shell hit the window at the third floor on the western side of the DonNTU educational building No. 2 (at 58V, Artyom Str). Several rooms were damaged. Vice-rector A.V. Levshov was wounded.

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<sup>7</sup> Novorossiia: Summary reports as of August 14, 2014 [published on 15/08/2014] Military Observer website. URL: <https://warsonline.info/ukraine/novorossiia-operativnaya-svodka-za-14-avgusta-2014-goda.html> (accessed on 28.01.2022).

**Shell hit 6** (see Fig. 14). A shell hit the north-western corner of a one-story building, located about 30 meters east of the north-eastern corner of the DonNTU educational building No. 4 (at 17, Kobozev Str.). As a result of the projectile detonation, part of the wall was destroyed.

**Shell hit 7** (see Fig. 15, Fig. 16). The shell hit the roof of the ESR (electroslag remelting) laboratory building. As a result of the projectile detonation, a hole was formed in the roof.

**Shell hit 8** (see Fig. 17, Fig. 18). The shell hit occurred a few meters north of the power substation of the educational building No. 9 of DonNTU (building No. 50 in Artyom Str. The projectile detonation resulted in a shell crater. In the ground. The wall of the power substation was damaged by fragments.

**Shell hit 9** (see Fig. 19, Fig. 20). The shell hit the roof of the prosecution office building (building No. 61 in Artyom Str. As a result of the projectile detonation, a hole was formed in the roof near the east wall of the building.

**Shell hit 10** (see Fig. 21). The shell hit the yard of the First Donetsk Municipal Hospital (between residential buildings at 59, Artyom Str. and 48, Postyshev Str.). The projectile detonation resulted in a shell crater in the ground, a tree was knocked down by a blast wave and fragments, the glazing of the hospital was damaged.

## **WEAPON TYPE**

### **Projectile debris**

In case of shell hit 5, the projectile did not explode, splitting into several large fragments (see Fig. 22, Fig. 23), one of which is still kept in the museum of DonNTU<sup>8</sup>.

We went out to the above museum and took measurements (see Fig. 24). The width of the fragment near the copper belt is approximately 15 cm. This allows us to conclude that the artillery shelling in question was carried out using 152 mm rifled artillery.

### **152mm Artillery**

In 2014, the Ukrainian army was armed with the following types of 152mm artillery: a) 2S19 Msta-S self-propelled howitzer; b) 2A65 Msta-B howitzer; c) 2S5 Giatsint-S self-propelled mortar; d) 2A36 Giatsint-B gun; e) 2S3 Akatsiya self-propelled howitzer; f) D-20 howitzer.

The characteristics of these guns are similar; however, their firing ranges differ (see Table 1).

The bottom of the projectile is flat. This fact makes it possible to discard the version of using 2S19 Msta-S self-propelled mortar (hereinafter referred to as SPM) and 2A65 Msta-B howitzer, since the projectiles fired from these mortars have a characteristic recess in the bottom, which serves to increase the firing range. As for the Hyacinths, they arrived in Donbass only in mid-October 2014<sup>9</sup>. Thus, the version of their application can also be discarded.

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<sup>8</sup> Museum of the History of the Technical University. Yandex maps. URL: <https://yandex.ua/profile/133683948334> (accessed on 28.01.2022).

<sup>9</sup> 44-Th COUNTER-BATTERY [archived version] People's Army. URL: <https://web.archive.org/web/20150105172625/http://narodka.com.ua/13062-44-ta-kontrbatarejna> (accessed on 28.01.2022).

*Table 1 – Gunnery range of 152mm artillery being in service at the Ukrainian AF in 2015.*

	2C19 Msta-S <sup>10</sup>	2A65 Msta-B <sup>11</sup>	2C5 Giatsint-C <sup>12</sup>	2A36 Giatsint-B <sup>13</sup>	2C3 Akatsiya <sup>14</sup>	D-20 <sup>15</sup>
Minimum HES gunnery range, meters	6,500	6,500	8,600	8,600	4,200	4,600
Maximum HES gunnery range, meters	24,700	24,700	28,400	27,000	17,400	17,410
The most common HES for this weapon	3OF45 <sup>16</sup> 3OF64 <sup>17</sup>		3OF29 <sup>18</sup>		3OF25 <sup>19</sup>	

Thus, it can be argued that **in the case under consideration the 2C3 Akatsiya self-propelled howitzers or the D-20 howitzer guns were used.** These types of artillery pieces have similar ballistic characteristics, as they are made on the basis of the same barrel<sup>20</sup>.

<sup>10</sup> Msta-S SAU. [published on 22.11.2018] Militaryarms.ru website. URL: <https://militaryarms.ru/voennaya-tehnika/artilleriya/sau-msta-s/> (accessed on 01.09.2021).

<sup>11</sup> 152mm Msta-B Howitzer (2A65). Gunnery range. Dimensions. Weight. Ammunition. Oruzhie.info website. URL: <http://oruzhie.info/artilleriya/583-msta-b> (accessed on 04.09.2021).

<sup>12</sup> Artillery. Large caliber. Giatsints. [Published on 04.06.2018] Top War Military Review website. URL: <https://topwar.ru/143897-artilleriya-krupnyy-kalibr-giacinty.html> (accessed on 01.09.2021).

<sup>13</sup> The 1976 Soviet 2A36 Giatsint-B 152mm gun - the world's most powerful wheeled, towed artillery system. Gunsfriend.ru website. URL: <https://gunsfriend.ru/152-mm-puska-2a36-giacint-b-1976-goda/> (accessed on 04.09.2021).

<sup>14</sup> 2S3 Akatsiya Self-propelled Howitzer. Military-informant website. URL: <https://military-informant.com/art/2s3-sp-1538262475.html> (accessed on 04.09.2021).

<sup>15</sup> Soviet 152mm Towed Howitzer Cannon D-20. The Third World War (Politico-Military Review). URL: [https://3mv.ru/publ/vooruzhenie/sovetskaja\\_152\\_mm\\_buksiruemaja\\_pushka\\_gaubica\\_d\\_20/21-1-0-12462](https://3mv.ru/publ/vooruzhenie/sovetskaja_152_mm_buksiruemaja_pushka_gaubica_d_20/21-1-0-12462) (accessed on 04.09.2021).

<sup>16</sup> 152-mm rounds of 3VOF58, 3VOF72, 3VOF73 with high-explosive fragmentation projectile 3OF45 Namestnik-1. BOEPRIPASNIK website. URL: [http://soviet-ammo.ucoz.ru/index/152\\_of45/0-171](http://soviet-ammo.ucoz.ru/index/152_of45/0-171) (accessed on 07.10.2021).

<sup>17</sup> 152,4-mm rounds of 3VOF96, 3VOF97 and 3VOF98 with high-explosive fragmentation projectile 3OF64 Khrebet-M. BOEPRIPASNIK website. URL: [http://soviet-ammo.ucoz.ru/index/152\\_of64/0-172](http://soviet-ammo.ucoz.ru/index/152_of64/0-172) (accessed on 07.10.2021).

<sup>18</sup> 152,4-rounds of 3VOΦ39, and 3VOF40 with high-explosive fragmentation projectile 3OF29 Bekas. BOEPRIPASNIK website. URL: [http://soviet-ammo.ucoz.ru/index/152\\_of29/0-310](http://soviet-ammo.ucoz.ru/index/152_of29/0-310) (accessed on 07.10.2021).

<sup>19</sup> 152-Mm rounds of 3VOΦ32, and 3VOF33 with high-explosive fragmentation projectile 3OF25 Grif. BOEPRIPASNIK website. URL: [http://soviet-ammo.ucoz.ru/index/152\\_of25/0-168](http://soviet-ammo.ucoz.ru/index/152_of25/0-168) (accessed on 07.10.2021).

<sup>20</sup> Akatsiya SPM — a 6-inch caliber flower. The Book of War. URL: <https://warbook.club/voennaya-tehnika/artilleriya/sau-2s3/> (accessed on 28.01.2022).

## PROBABLE SECTOR OF SHELLING

All hits of the shelling under consideration can be inscribed in an oval, elongated along an axis directed from the north-west – north to south-east – south (see Fig. 25). It is noteworthy that hits from a single gun are usually elongated along the direction of fire.

In the case of shell hit 1, a clear trace of the explosion, stretched along the main stream of fragments, remained on the wall of the building. This makes it possible to determine the line of intersection of the plane of the main scatter of fragments with the building wall. This line is inclined relative to the horizon by about 24 degrees. This indicates a deviation of the line perpendicular to the building wall from the shelling direction also by 24 degrees. By superimposing these lines on the map, we determine the shelling direction. According to our measurements, the azimuth was 336 degrees (see Fig. 26).

In the case of shell hit 8, there was a clear trace from the main scatter of fragments on the walls located near the explosion of buildings. At the same time, on one of the buildings, the trace intersects with the ground surface at the north-western corner of the wall (see Fig. 27), and on the second building (power substation) the intersection is at a distance of about one third of the total wall size from the north-western corner (see Fig. 28). This enables us to build a line between the two points above, which will be perpendicular to the shelling direction (see Fig. 29). The plotted azimuth was 333 degrees.

Summarizing the above, we can argue that **the shelling in question was carried out in the direction from the north-west – north to south-east – south, and the azimuth was approximately 335 degrees.**

Considering the minimum (4.6 km) and maximum (17.4 km) ranges of the 2S3 Akatsiya MLRS or the D-20 howitzer, and the measurement error of plus or minus 15 degrees, it is possible to map the shelling sector.



In addition, maps of hostilities in the territory of the DPR and LPR on August 16-22<sup>21</sup>, created by a blogger under the nickname “kot\_ivanov”, allow us to assess the location of the units of the warring parties in those days and map the line of contact.

The sector designated by us **has the shape of a truncated triangle and covers the settlement of Severnoye - the center of Avdeyevka - the Mayak market in Donetsk**. The southern quarter of the sector was under the control of the armed formations of the DPR. The northern part of the sector (three quarters) was under the control of the UAF (see Fig. 30).

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<sup>21</sup> Maps of hostilities in the territory of DPR and LPR on August 16-22 [published on 18.08.2014] LiveJournal Online Journal Service. URL: <https://kot-ivanov.livejournal.com/2014/08/18/> (accessed on 28.01.2022).

## MILITARY PRESENCE

We did not find any information about the presence of units of the DPR armed formations armed with 152 mm rifled artillery in the above-mentioned sector on the dates in question.

As for the motive, the representatives of the DPR armed formations had no motive to fire at their fellow citizens; however, the prosecution office building (at 61, Artyom Str.) could be the target of the UAF artillery. This building was occupied at that time by the representatives of the DPR power structures.

At the end of June 2014, the Right Sector and Dnipro-1 units were redeployed to Donetsk airport. The 93rd Independent Kholodnyi Yar Mechanized Brigade arrived there along with the 17th Separate Kryvyi Rih Tank Brigade<sup>22</sup>.

At the end of July, the offensive was actively deployed toward the airport de-blocking. In a short time, the villages of Tonenkoye, Orlovka and Severnoye were captured in a short jerk by the 93rd IMB. On July 21 the village of Piski was taken<sup>23</sup>. DPR armed formations retreated closer to Donetsk city limits<sup>24</sup>.

It should be mentioned that before the arrival of longer-range guns in October, it was the 93rd AFU (hereinafter IMB) artillerymen who were working in the vicinity of Donetsk airport<sup>25</sup>. Satellite images dated 06.09.2014 show caterpillar tread marks from an armored vehicles similar to the traces of SPM work to the north of Opytnoye settlement (see Fig. 31). The 2S3 Akatsiya self-propelled mortars headed by Aleksey Leonidovich Dubovik (code name: Squall) were deployed at these positions<sup>26</sup> This man

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<sup>22</sup> Storming the Donetsk airport 2014-2015. RF Soldiers. URL: [https://www.soldati-russian.ru/index/shturm\\_doneckogo\\_aehroporta\\_2014\\_2015/0-788](https://www.soldati-russian.ru/index/shturm_doneckogo_aehroporta_2014_2015/0-788) (accessed on 16.09.2021).

<sup>23</sup> News from Donetsk and the Region as of August 1, 2016. Peski: the beginning of the legend. Informative Donbass - a guide to the Donetsk Region website. URL: <https://donbass-info.com/content/view/31070/31081/> (accessed on 16.09.2021).

<sup>24</sup> Why Donetsk airport fell five years ago and why the legend of cyborgs was born [published on 21.01.2020] LiveJournal Online Journal Service URL: <https://varjag2007su.livejournal.com/5933960.html> (accessed on 16.09.2021).

<sup>25</sup> How Ukrainian artillerymen defend the outskirts of Donetsk [published on 16.10.2014] YouTube Video hosting. URL: <https://youtu.be/DofEc-Hm5cl> (accessed on 28.01.2022).

<sup>26</sup> Oleksiy Leonidoych Dubovik. Wikipedia Free Encyclopaedia. URL: [https://uk.wikipedia.org/wiki/Дубовик\\_Олексій\\_Леонідович](https://uk.wikipedia.org/wiki/Дубовик_Олексій_Леонідович) (accessed on 16.09.2021).

was on site nearby Donetsk airport from July to November 2014, where he was in charge of artillery of the 93rd IMB<sup>27</sup>.

The overall leadership of the Donetsk airport defense from May 26, 2014 to October 3, 2014<sup>28</sup> was exercised by the commander of the 3rd Kirovograd Special Forces Regiment, Aleksandr Sergeevich Trepak (code name: Redit)<sup>29</sup>. I knew and controlled the entire airport: the perimeter, Piski, the entry and exit of the columns, all the artillery. Everything was closing in on me,” Trepak said in his interview to “Censor.net”. He stressed that he had ordered the firing toward Donetsk on his own, without orders from the headquarters<sup>30</sup>.

Thus, the following can be stated:

There were units of the UAF, armed with 152mm 2C3 Akatsiya self-propelled howitzers in the sector of shelling.

The responsibility for this shelling lies primarily with the officers who headed the actions of the Ukrainian armed formations, namely the commander of the 3rd Kirovograd Special Forces Regiment, Alexander Sergeevych Trepak (code name: Redit), and the commander of the 93rd IMB howitzer battalion, Aleksey Leonidovych Dubovik (code name: Squall).

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<sup>27</sup> Brave hearts. Gunners. YouTube Video hosting. URL: <https://youtu.be/DFwCG19BArs> (accessed on 16.09.2021).

<sup>28</sup> News from Donetsk and the Region as of January 24, 2016 Battle for Donetsk airport. Unknown details of the ATS most tragic special operation [published on 21.01.2016] Informative Donbass - a guide to the Donetsk Region website. URL: <https://donbass-info.com/content/view/26433/26444/> (accessed on 01.09.2021).

<sup>29</sup> Oleksandr Sergiyovych Trepak. Wikipedia Free Encyclopaedia. URL: [https://uk.wikipedia.org/wiki/Трепак\\_Олександр\\_Сергійович](https://uk.wikipedia.org/wiki/Трепак_Олександр_Сергійович) (accessed on 01.09.2021).

<sup>30</sup> Donetsk Airport Defense Commander, the Hero of Ukraine Redit: “I’m not a cyborg. I was scared too”. [published on 17.06.2015] Censor Net. URL: [https://m.censor.net/resonance/340362/komandir\\_oborony\\_donetskogo\\_aeroporto\\_geroyi\\_ukrainy\\_redut\\_ya\\_ne\\_kiborg\\_mne\\_toje\\_bylo\\_strashno](https://m.censor.net/resonance/340362/komandir_oborony_donetskogo_aeroporto_geroyi_ukrainy_redut_ya_ne_kiborg_mne_toje_bylo_strashno) (accessed on 16.09.2021).

## CONCLUSIONS

It follows from the above that on August 14, 2014 at around 12:20 local time, the Voroshilovskiy District of the city of Donetsk came under shelling with 152mm rifled artillery, resulting in the civilians' deaths and injuries.

As a result of the analysis of news videos and information from the Internet, it was found that the 93rd IMB howitzer battalion under command of Aleksey Leonidovych Dubovik (code name: Squall) could be located in the sector from which the shelling was carried out. This unit was armed with 152mm 2S3 Akatsiya self-propelled howitzers. Colonel Oleg Mykhailovych Mikats was in command of the 93rd IMB of the UAF. Operational command of the artillery could be exercised by the commander of the 3rd Kirovograd SFR, Alexander Sergeevych Trepak (code name: Redit), who was at the time in charge of the combined group of Ukrainian formations near Donetsk airport.

## LEGAL QUALIFICATIONS

Indiscriminate shelling of a densely populated residential area in the town of Makeyevka, in which civilians were killed and injured, is a crime for which responsibility is provided by the norms of national legislation of Ukraine and by the norms of international law.

In compliance with **Art. 438 of the Criminal Code of Ukraine**, for “... use of methods of the warfare prohibited by international instruments, or any other violations of rules of the warfare recognized by international instruments consented to be binding by the Verkhovna Rada (Parliament) of Ukraine, and also giving an order to commit any such actions”, shall be punishable by imprisonment for a term of eight to twelve years., and if he same acts accompanied with an intended murder, shall be punishable by imprisonment for a term of ten to fifteen years, or life imprisonment.

In compliance with **Art. 13 of Additional Protocol II to the Geneva Conventions** of 12 August 1949, concerning the protection of victims of armed conflicts of a non-international character, dated 8 June 1977: “The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited”.

In compliance with **Rule 71 of Customary International Humanitarian Law** (Volume 1, ICRC, 2006): “States must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets”

“The use of weapons which are by nature indiscriminate is prohibited”.

In compliance with part 2 (c), (e) of **Art. 8 of the Rome Statute**, war crimes also include acts committed in the event of an armed conflict not of an international character and which constitute a serious violation of Art. 3, which is common to the four Geneva Conventions of August 12, 1949, namely, any of the following acts committed against persons taking no active part in the hostilities, including members

of armed forces who have laid down their arms and those placed hors de combat by sickness, wounds, detention or any other cause:

**Part 2 (c) i)** violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and torture;

**Part 2 (e) i)** intentionally directing attacks against the civilian population as such or against individual civilians not taking direct part in hostilities;

**Part 2 (e) iv)** intentionally directing attacks against buildings dedicated to religion, education, art, science or charitable purposes, historic monuments, hospitals and places where the sick and wounded are collected, provided they are not military objectives;

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## ANNEXES

## Annex 1

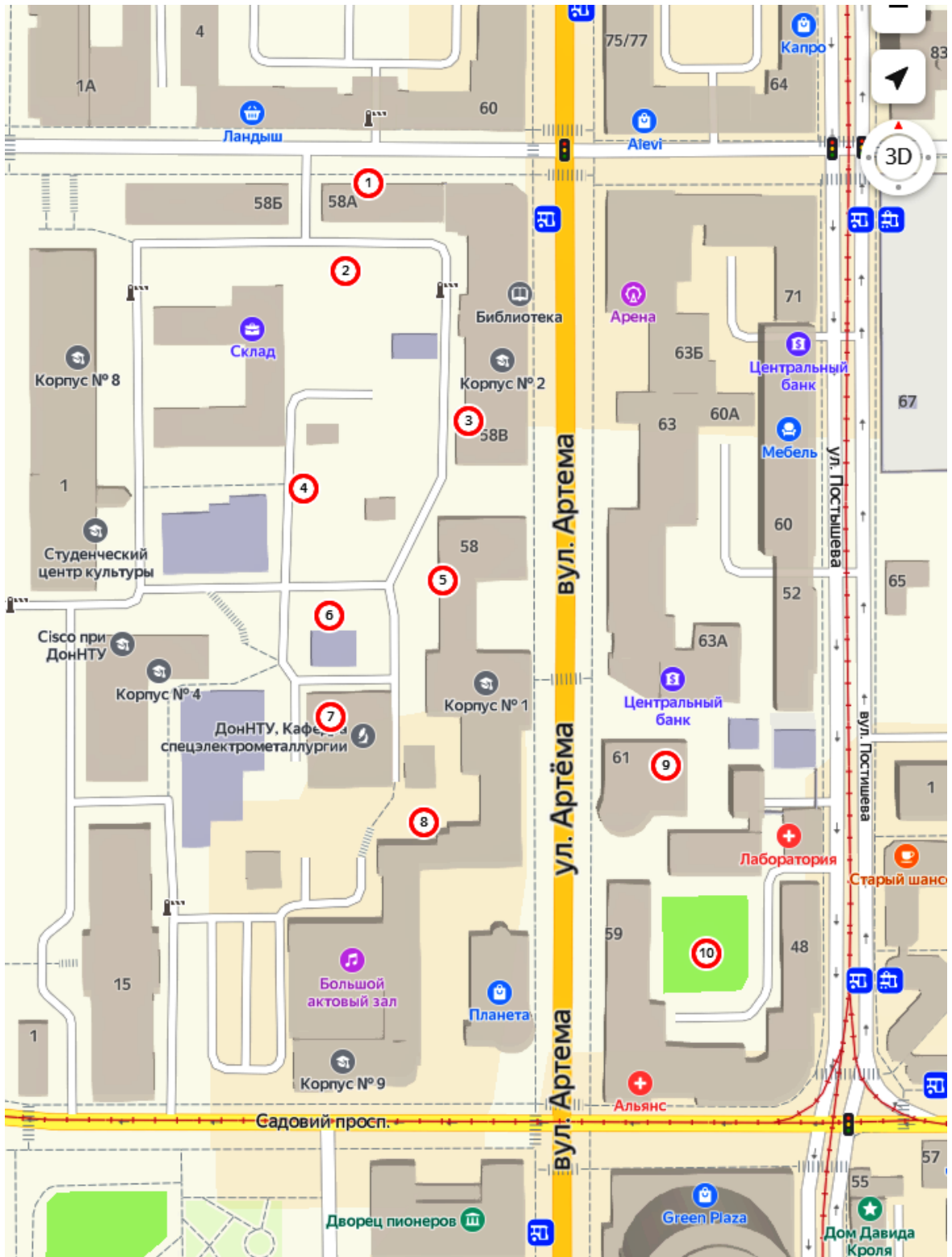


Fig. 1 - The scheme of shelling of the Voroshilovskiy district of Donetsk, which happened on 14.08.2014 at about 12:20.





*Fig. 2 – Shell hit (1) on the northern wall of a multi-storey residential building No. 58A in Artyom Str. Between the third and fourth floors<sup>31</sup>.*



*Fig. 3 – A hole formed on the building wall as a result of shell hit 1<sup>32</sup>.*

<sup>31</sup> Donetsk 14.08.2014. The shelling of the city center [published on 15.08.2014] VKontakte Social Network. URL: [https://vk.com/album-75166498\\_200808514](https://vk.com/album-75166498_200808514) (accessed on 28.01.2022).

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*Fig. 4 – A woman who sustained a fragmentation wound at the corner of building No. 60 in Artyom Str.<sup>33</sup>.*



*Fig. 5 – A man killed at the corner of building No. №75/77 in Artyom Str.<sup>34</sup>.*

<sup>33</sup> I am a witness. Film 21. The shelling of Donetsk on August 14, 2014. I came under this shelling then. YouTube Video hosting. URL: <https://youtu.be/gQGqs51eztE> (accessed on 28.01.2022).

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*Fig. 6 – Shell hit (2) in the ground surface about 15 meters south-east of the south-western corner of building No. 58B in Artyom Str<sup>35</sup>.*



*Fig. 7 – Blood, thrown money and bread near the swing in the courtyard of Building No. 58B in Artyom Str.<sup>36</sup> (several meters south of shell hit 2).*

<sup>35</sup> Bombardement de l'Université Nationale Technique de Donetsk par l'armée ukrainienne. SANS FRONTIÈRES ISSN 2519-2639 URL: <http://sf.donntu.org/sf041501.html> (accessed on 28.01.2022).

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Fig. 8 – Shell hit (3) in the base of the western wall of the DonNTU educational building No. 2<sup>37</sup>.



Fig. 9 – Shell hit (4) about 60 meters west of the south-east corner of the DonNTU educational building No. 2<sup>38</sup>.

<sup>37</sup> I am a witness. Film 21. The shelling of Donetsk on August 14, 2014. I came under this shelling then. YouTube Video hosting. URL: <https://youtu.be/gQGqs51eztE> (accessed on 28.01.2022).

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*Fig. 10 – A crater created as a result of the projectile detonation about 60 meters west of the south-east corner of the DonNTU educational building No. 2<sup>39</sup> (shell hit 4).*



*Fig. 11 – Shell hit (5) in the window at the third floor on the western side of the DonNTU educational building No. 1<sup>40</sup>.*

<sup>39</sup> The shelling of the city center on 14/08/2014 [published on 16.08.2014] YouTube Video hosting. URL: <https://youtu.be/PjjHGd9rMHk> (accessed on 28.01.2022).

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*Fig. 12 – One of the DonNTU premises, destroyed as a result of shell hit 5<sup>41</sup>.*



*Fig. 13 – Vice-rector of DonNTU A.V. Levshov injured as a result of shell hit 5<sup>42</sup>.*

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<sup>41</sup> Effects of DonNTU shelling (Donetsk) on August 14, 2014. [published on 14.08.2014] Odnoklassniki Social Network. URL: <https://ok.ru/video/1457235431928> (accessed on 28.01.2022).

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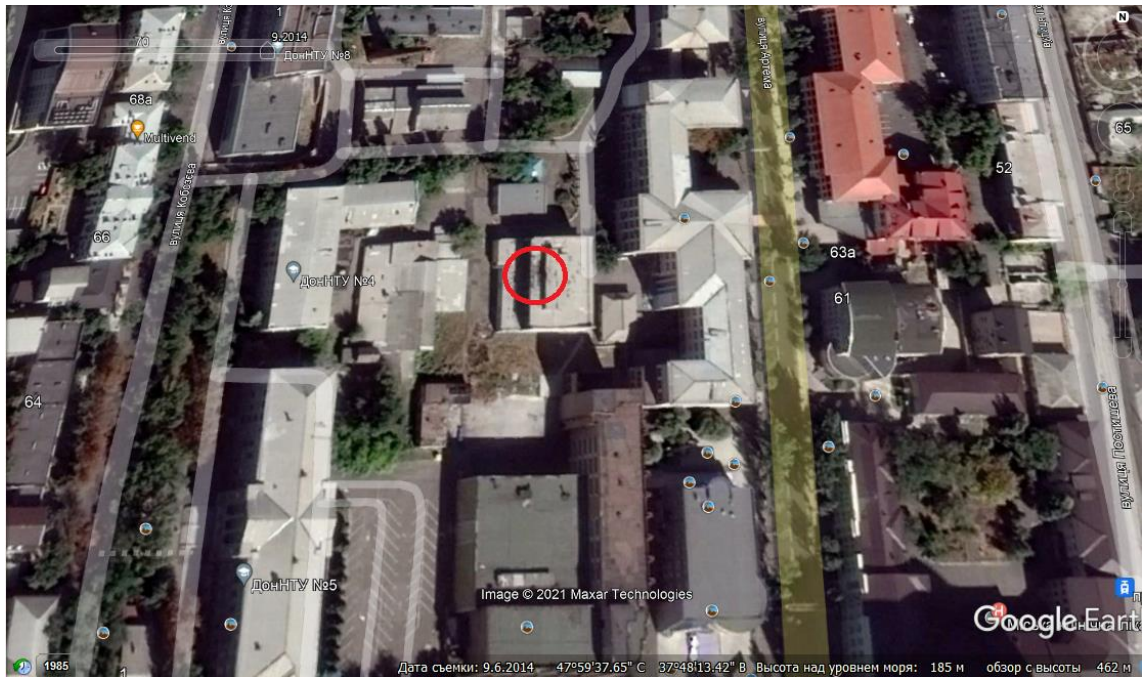
*Fig. 14 – Shell hit 6 that destroyed the north-west corner of a one-story building<sup>43</sup>.*



*Fig. 15 – A hole in the roof of the DonNTU ESR laboratory building, formed as a result of shell hit 7<sup>44</sup>.*

<sup>43</sup> Donetsk hell (photo, video) [published on 14.08.2014] Mining Region website. URL: [http://girnyk.dn.ua/news/doneckij\\_ad\\_foto\\_video/2014-08-14-4860](http://girnyk.dn.ua/news/doneckij_ad_foto_video/2014-08-14-4860) (accessed on 28.01.2022).

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*Fig. 16 – The trail of a shell hit (7) on the roof of the ESR Laboratory on the satellite image dated 06.09.2014.*



*Fig. 17 – The trail of a shell hit (8) nearby the power substation of the DonNTU educational building No. 9<sup>45</sup>.*

<sup>45</sup> The shelling of the city center on 14/08/2014 [published on 16.08.2014] YouTube Video hosting. URL: <https://youtu.be/PjjHGd9rMHk> (accessed on 28.01.2022).





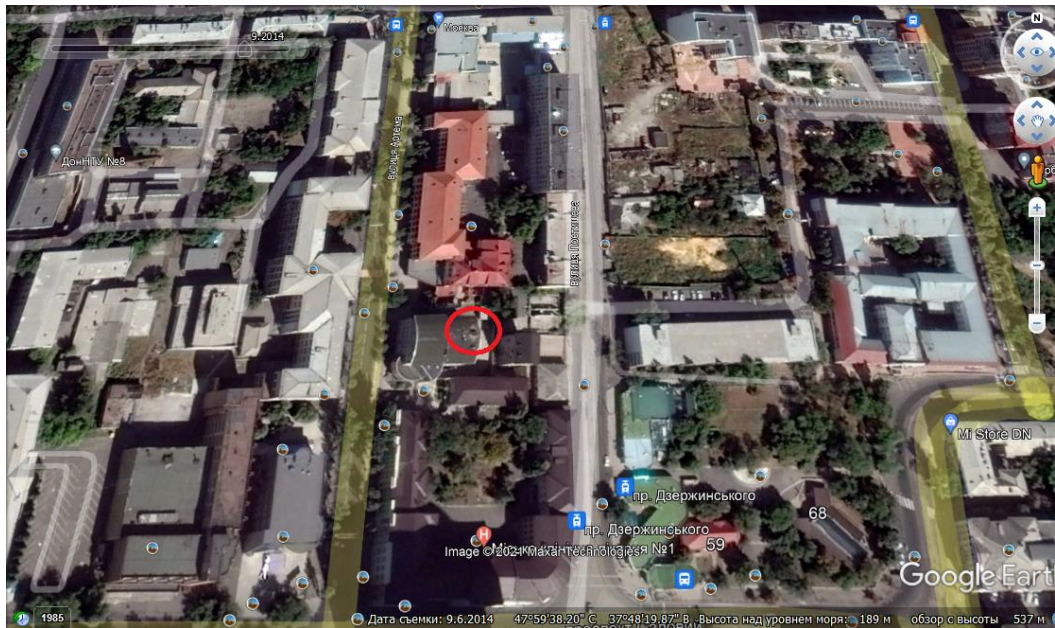
*Fig. 18 – A crater from shell hit 8<sup>46</sup>.*



*Fig. 19 – The roof of the prosecution office, destroyed by shell hit 9<sup>47</sup>.*

<sup>46</sup> Video from Nikolay Shlyupkin [published on 18.08.2014] VKontakte Social Network. URL: [https://vk.com/video25851411\\_169404006](https://vk.com/video25851411_169404006) (accessed on 28.01.2022).

<sup>47</sup> CONSEQUENCES OF A SHELL HITTING THE DONETSK CITY PROSECUTION OFFICE ON AUGUST 14 PHOTO [archived version] Donbass News. URL: <https://web.archive.org/web/20201201211646/https://novosti.dn.ua/news/214872-posledstvyiya-popadaniya-snaryada-v-doneckuyu-gorodskuyu-prokuraturu-14-avgusta> (accessed on 28.01.2022).



*Fig. 20 – The trail of a shell hit (9) on the roof of the prosecution office building on the satellite image dated 06.09.2014.*



*Fig. 21 – Shell hit (10) in the yard of the First Municipal Hospital<sup>48</sup>.*

<sup>48</sup> Donetsk 14.08.2014. The shelling of the city center [published on 15.08.2014] VKontakte Social Network. URL: [https://vk.com/album-75166498\\_200808514](https://vk.com/album-75166498_200808514) (accessed on 28.01.2022).



*Fig. 22 – The fragments found at the site of shell hit 3<sup>49</sup>.*

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<sup>49</sup> EFFECTS OF DONNTU SHELLING (DONETSK) BY THE UKRAINIAN ARMY ON AUGUST 2014. Donetsk National Technical University Website. URL: <http://alumni.donntu.org/war.html> (accessed on 28.01.2022).



*Fig. 23 – A fragment found near the north-eastern corner of the ESR Laboratory<sup>50</sup>.*



*Fig. 24 – Measurement of a fragment kept in the museum of DonNTU.*

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<sup>50</sup> The shelling of the city center on August 14 (photo) [published on 14.08.2014] ARCHIVES OF THE DPR OFFICIAL WEBSITE. URL: <https://doc.dnronline.su/news/obstrel-centra-goroda-14-avgusta/> (accessed on 28.01.2022).

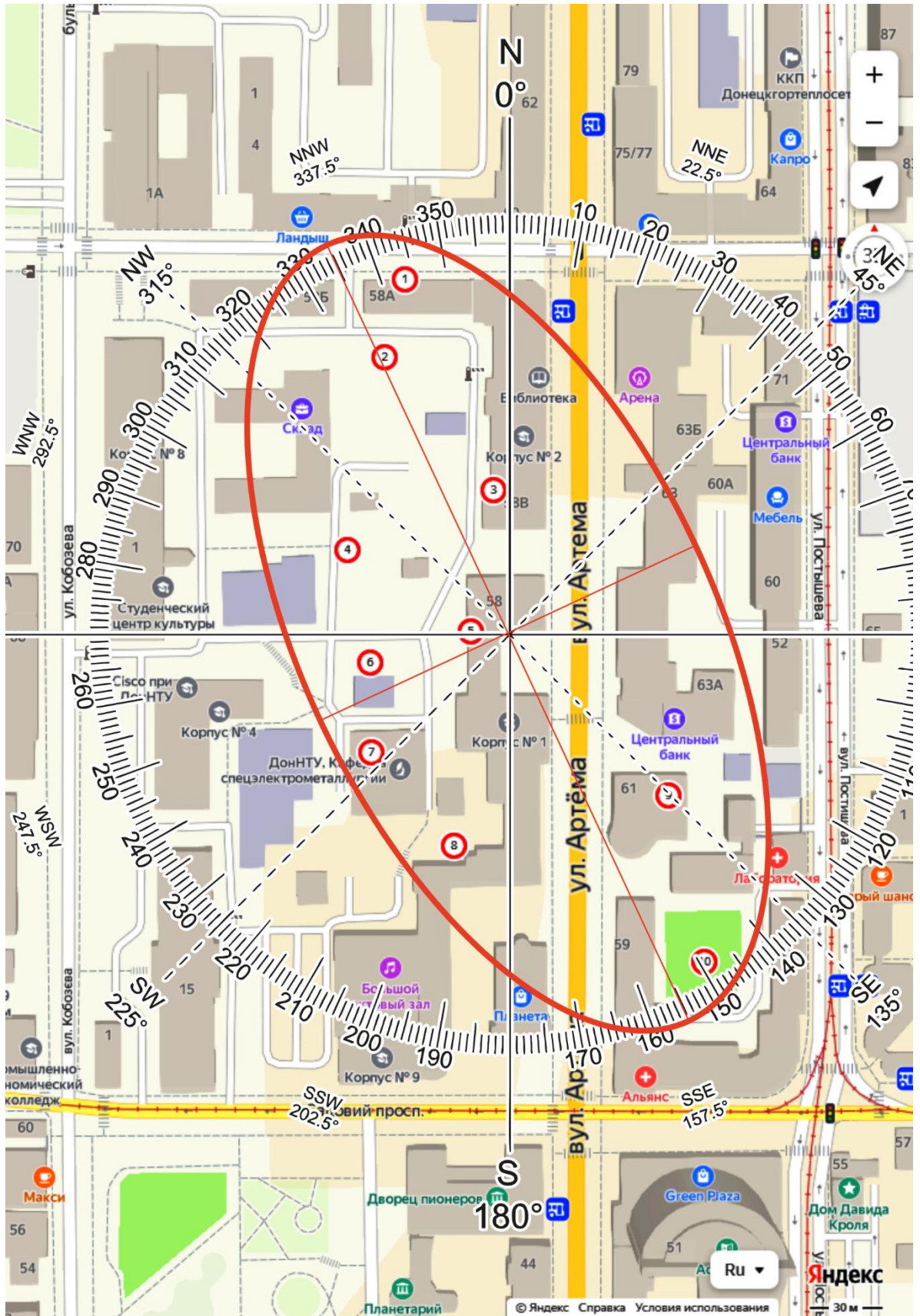
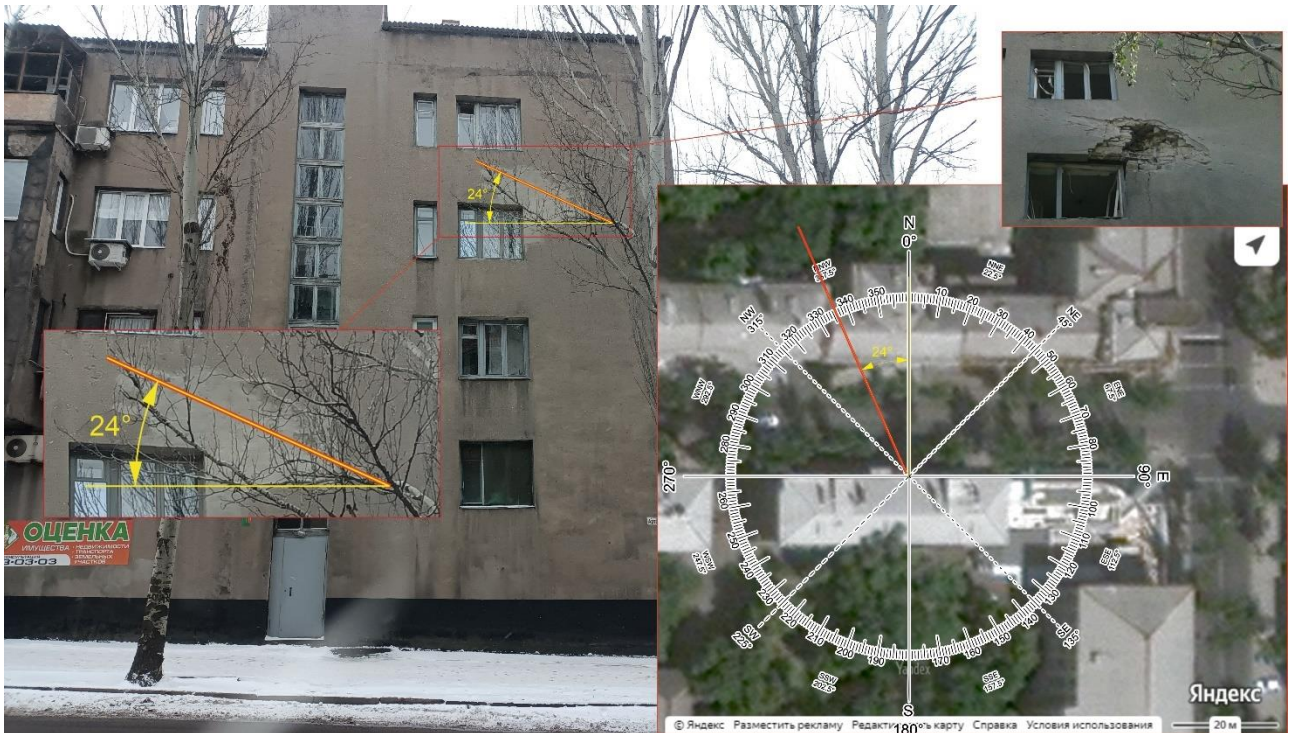


Fig. 25 – Hits of the shelling under consideration can be inscribed in an oval.



*Fig. 26 – Fire angle determination for shell hit 1.*



*Fig. 27 – Traces from the main scatter of fragments on the wall to the east of shell hit 8 (photo from January 24, 2022).*



Fig. 28 – Traces from the main scatter of fragments on the wall to the south of shell hit 8 (photo from January 24, 2022).

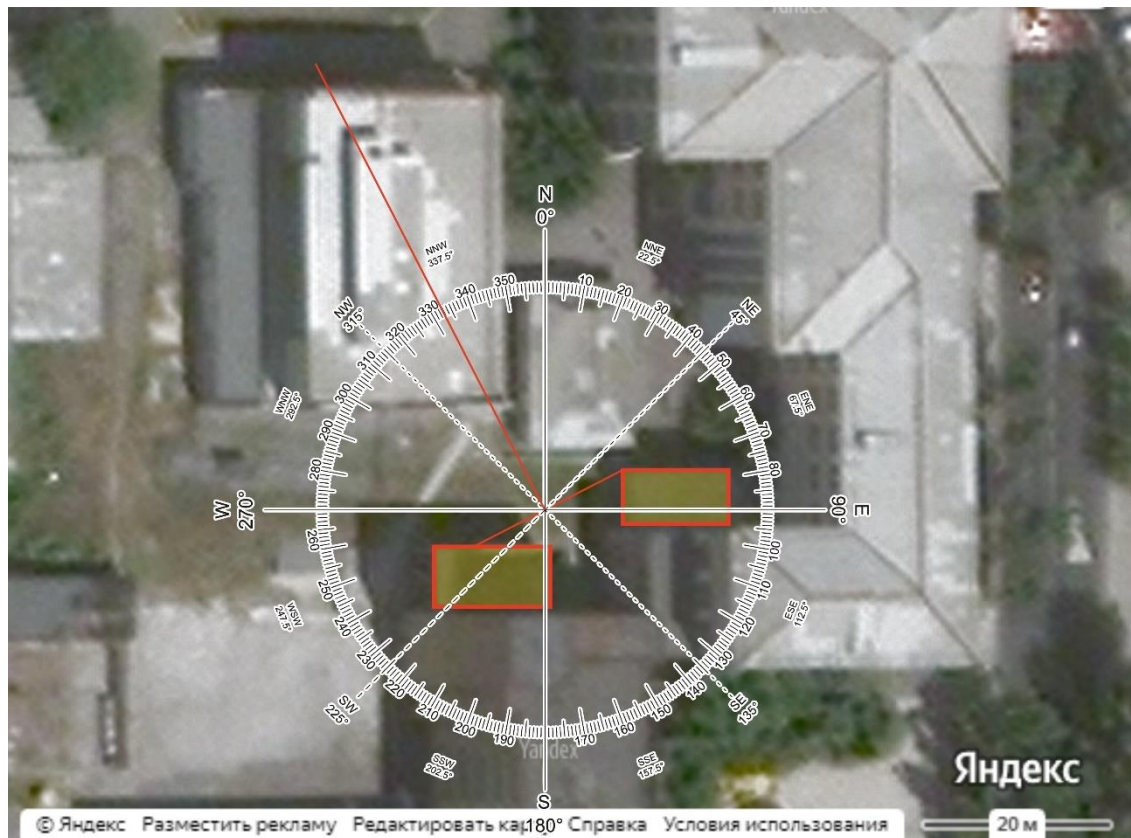


Fig. 29 – Shelling direction in the case of shell hit 8.

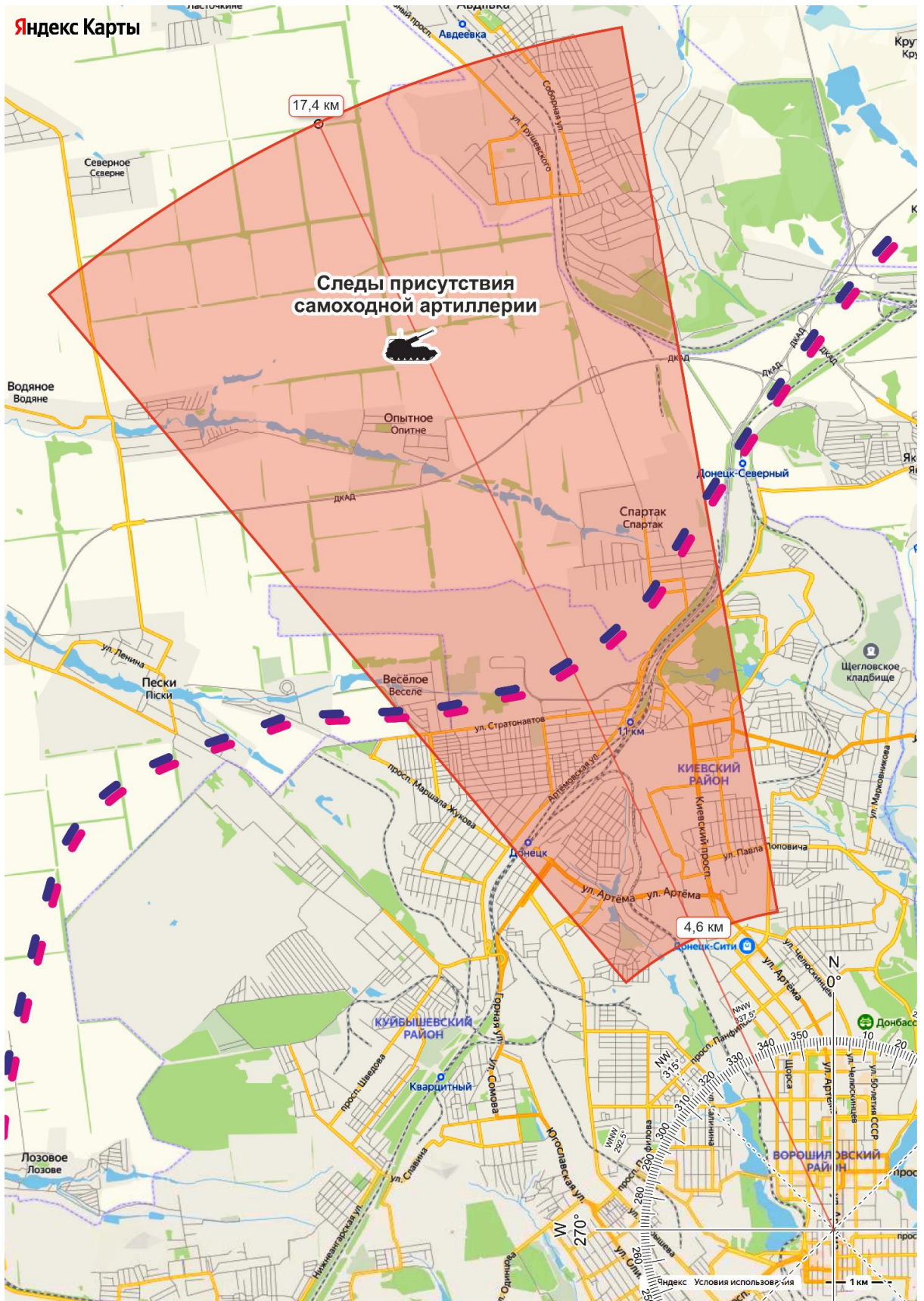
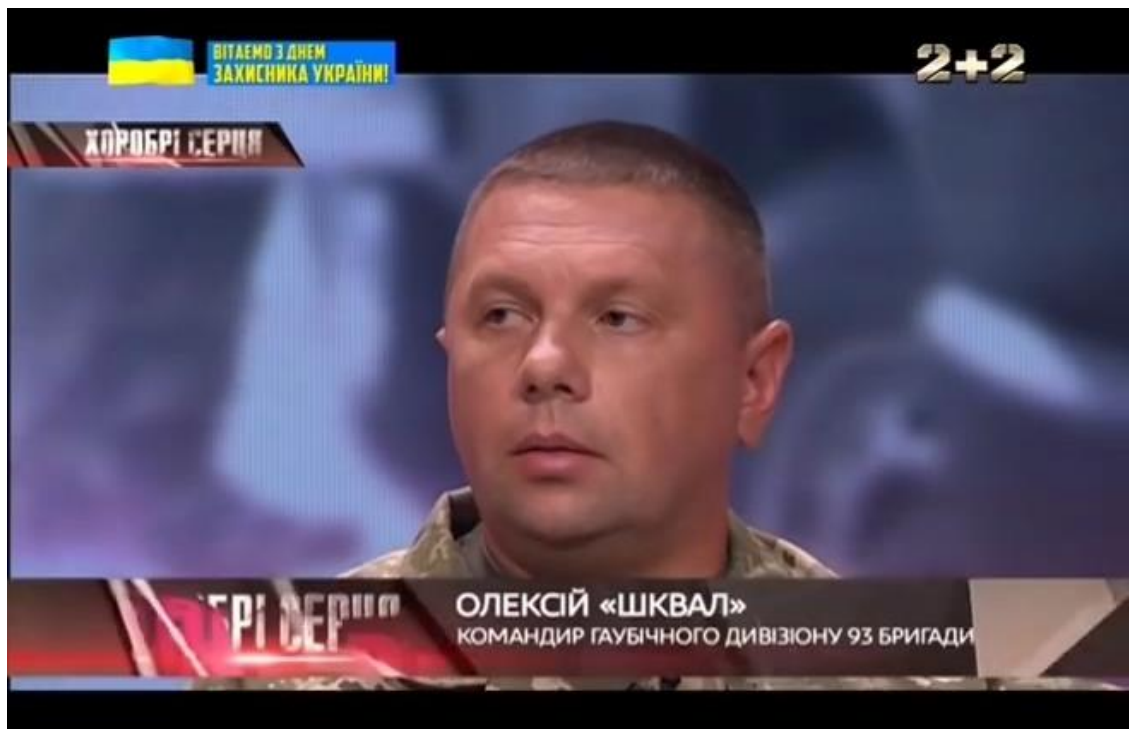


Fig. 30 – A scheme of the shelling sector





*Fig. 31 – The traces of artillery work to the north of Opytnoye settlement on the satellite image dated 06.09.2014.*



*Fig. 32 – The 93rd IMB Howitzer Division Commander, Aleksey Leonidovych Dubovik<sup>51</sup>.*

<sup>51</sup> Brave hearts. Gunners. YouTube Video hosting. URL: <https://youtu.be/DFwCG19BArs> (accessed on 28.01.2022).



*Fig. 33 – Commander of the 3rd Kirovograd Special Forces Regiment Alexander Sergeevych Trepak<sup>52</sup>.*



*Fig. 34 - Right to left: Oleg Mikats, Dmitry Yarosh, Lyudmila Negriu<sup>53</sup>.*

<sup>52</sup> The Person of the Year. NV website. URL: <https://nv.ua/ukr/project/person-of-the-year-40003280.html> (accessed on 28.01.2022).

<sup>53</sup> Lyudmila Negriu: I want all the guys to be alive ... KHERSON URL: [https://kherson.net.ua/news/ljudmila\\_negriu\\_ja\\_hochu\\_chtoby\\_vse\\_rebjata\\_byli\\_zhivy](https://kherson.net.ua/news/ljudmila_negriu_ja_hochu_chtoby_vse_rebjata_byli_zhivy) (accessed on 28.01.2022).