

# Shelling of Gladkovka residential area in Donetsk city using rifled artillery on September 4, 2014

*PUBLIC INVESTIGATION*

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**ABBREVIATIONS**

UAF - Ukrainian Armed Forces

DPR - Donetsk People's Republic

IMB - Independent Mechanized Brigade

HES - high-explosive shell

## PREAMBULE

On September 4, 2014, fighting continued in the area around Donetsk airport. DPR militiamen actively assaulted positions of the Ukrainian Armed Forces. Thus, a report from the DPR Defense Ministry on 04.09.2014 reads: “The command post of the 93rd Mechanized Brigade was destroyed near Tonenkoye settlement (north-west). Two UAF mortar squads were destroyed in the airport area, also up to 15 persons (soldiers and officers) were killed. An ammunition depot was destroyed in Opytnoye settlement. A convoy of two vehicles and one armored personnel carrier, and up to 40 enemy soldiers were destroyed to the east of Severnoye settlement. In the area of Khimki settlement [in the town of Avdeevka, *author’s note*] (nearby motor transport depot district) a platoon of 152 mm howitzers and up to 30 personnel were destroyed”.<sup>1</sup>

In its turn, Ukrainian artillery actively shot back to DPR militia positions and to residential areas of the cities. In the evening of the same day, at about 17:30 (18:30 Moscow time), the Gladkovka residential area came under shelling, about 40 shells were fired there<sup>2</sup>. As a result, civilians were killed and injured. Residential buildings, school # 61 and a temple under construction were damaged.

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<sup>1</sup> Reports from the Novorossiia militia 04.09.2014 [published on 04.09.2014] E-News.su URL: <https://e-news.su/news/24184-svodki-ot-opolcheniya-novorossii-04092014.html> (accessed on 11.09.2021).

<sup>2</sup> Reports from the Novorossiia militia for September 4, 2014 [published on 05.09.2014] VOENNOE OBOZRENIE (MILITARY REVIEW) URL: <https://topwar.ru/57606-svodki-ot-opolcheniya-novorossii-za-4-sentyabrya-2014-goda.html> (accessed on 11.09.2021).

## INCIDENT LOCATION

Having studied photo and video materials published in the media and on the Internet, interviewed witnesses to and the victims of the artillery shelling of Donetsk on 04.09.2014 at approximately 18:30 (Moscow time), visited and examined the scene, we could identify 20 locations of artillery shell hits (see Fig. 1).

**Shell hits 1 to 6** (see Fig. 2). These shells exploded in the territory of garage cooperatives and warehouses, causing damage to civilian property but no civilian casualties. They will not be dealt with in detail in this investigation, but they are marked in a diagram to gain a better understanding of the full picture. It should also be noted that traces of these hits are clearly visible in the satellite image dated 06.09.2014.

**Shell hit 7** (see Fig. 3). The projectile hit the asphalt a few meters to the north of the entrance of building No. 23 in Kutuzov Street, damaging a vehicle parked at the entrance.

**Shell hit 8** (see Fig. 4). A projectile damaged the north wall of building No. 27 in Kutuzov Street. The projectile detonation created a hole in the wall at the sixth-floor level.

**Shell hit 9** (see Fig. 5 and 6). The projectile struck the ground approximately 25 meters south of building No. 25 in Kutuzov Street. Also, the funnel from the explosion of this projectile is clearly visible in the satellite image dated 06.09.2014.

**Shell hit 10** (see Fig. 7). The projectile struck a stone fence approximately 30 meters north of building No. 31 in Kutuzov Street. Part of the fence was destroyed by the blast. The north wall of building No. 31 was damaged by scattered shell fragments and has a clear mark from the main fragmentation area.

**Shell hit 11** (see Fig. 8). A projectile hit the west wall of building No. 14 in Savchenko Street near the entrance to the north side of the building. The detonation of the projectile created a hole in the wall at the ground floor level.

**Shell hit 12** (see Fig 9, 10, and 11). The projectile struck the north wall of the building No. 13 in Kutuzov Street. The detonation created a hole in the wall at the seventh-floor level. A man who was smoking on the balcony at the time was killed. Another man who was in the courtyard was seriously injured.

**Shell hit 13** (see Fig. 12 and 13). A projectile hit the western wall of the building No. 15 in Savchenko Street. The detonation created a hole in the wall at the level of the technical (attic) floor. A piece of concrete slab broke off and fell down, blocking the entrance to the building.

**Shell hit 14** (see Fig. 14). The projectile hit the asphalt a few meters to the north of the entrance of building No. 7 in Kutuzov Street.

**Shell hit 15** (see Fig. 15, 16 and 17). A shell hit the roof of a shop in 63, Zvyagilsky Street. Shell fragments damaged the canopy above the shop entrance. The place of the shell hit is not visible from the ground, but is clearly visible in the satellite image dated 06.09.2014.

**Shell hit 16** (see Fig. 17). A projectile hit the north wall of building No. 57 in Zvyagilsky Street. The projectile detonation created a hole in the wall at the first-floor level.

**Shell hit 17** (see Fig. 18-21). The projectile struck the western part of the parking area to the south of the shop in 63, Zvyagilsky Street. As a result of the detonation of the shell, a clear trace remained on the asphalt pavement. This hit is also clearly visible in the satellite image dated 06.09.2014. Apparently, fragments from this particular projectile caused the death of a woman walking nearby.

**Shell hit 18** (see Fig. 22 and 23). The projectile struck the eastern part of the car park to the south of the shop in 63, Zvyagilsky Street. The detonation of the projectile left a clear mark on the asphalt pavement. This impact can be seen in the satellite image dated 06.09.2014.

**Shell hit 19** (see Fig. 24 and 25). The shell hit the territory of the Temple of the Holy Great Martyr and Healer Panteleimon that was under construction at that time. As a result of the shell detonation of the, fragments damaged the wall and fence of the temple. The hit can also be seen in the satellite image dated 06.09.2014.

**Shell hit 20** (see Fig. 26). A projectile hit the north wall of the building No. 54 in Zvyagilsky Street. The projectile detonation created a hole in the wall at the level of the technical (attic) floor.

## TYPE OF WEAPONRY

### Testimonies and physical evidence

Numerous metal fragments, both small and quite large, were found throughout the area that came under shelling (see Fig. 28-30). Fragments of this type indicate the use of at least 80-mm artillery projectiles.

No mine tailings (typical of mortar shells) or remnants of the missile part of the shells (typical of rocket launchers) were found. Aluminum shanks, typical of the smoothbore tank gun, have also not been found.

These facts allow us to conclude that rifled artillery was used.

A clear trace of the main scatter of fragments on the wall of the house can be seen at the site of shell hit No. 14. This enables to determine the projectile grazing angle (see Fig. 31 and 32), which is approximately 50 degrees. This grazing angle indicates high-trajectory shooting. The fact of using such trajectory allows us to discard the version of employing a 100-mm anti-tank gun Rapier (MT-12) for firing. The use of 203-mm rifled artillery is also unlikely, as the destructions are not as significant.

Given the Soviet-style artillery used by the Ukrainian army in 2014, the main version of this investigation is that *122mm or 152mm rifled artillery pieces were employed for this shelling.*

## 122mm and 152mm Artillery

The minimum range for either 122mm or 152mm rifled artillery is 4,200 m, with a maximum range of 15,400 m for 122 mm mortars and 28,400 m for 152mm mortars

*Table 1 – Summary table of Ukrainian 122 mm and 152mm gunnery range*

Title	Description	HES gunnery range, m	
		minimum	maximum
2S19 Msta-S <sup>3</sup>	152 mm self-propelled mortar	6500	24700
2A65 Msta-B <sup>4</sup>	152 mm howitzer	6500	24700
2S5 Giatsint-S <sup>5</sup>	152 mm self-propelled mortar	8600	28400
2A36 Giatsint -B <sup>6</sup>	152 mm gun	8600	27000
2S3 Acatsiya <sup>7</sup>	152 mm self-propelled mortar	4200	17400
D-20 <sup>8</sup>	152 mm howitzer	4600	17410
2S1 Gvozdika <sup>9</sup>	122 mm self-propelled howitzer	4200	15200
D-30 <sup>10</sup>	122 mm howitzer	4200	15400

At the same time, in the firing tables of the D-30<sup>11</sup> howitzer, a projectile grazing angle of 50 degrees corresponds to a range of 6,400 m (when using the minimum powder load). Regarding possible measurement errors, we will assume a minimum range of 6,000 m.

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<sup>3</sup> Msta-S SAU. URL: <https://militaryarms.ru/voennaya-texnika/artilleriya/sau-msta-s/> (accessed on 01.09.2021).

<sup>4</sup> 152mm Msta-B Howitzer (2A65). Gunnery range. Dimensions. Weight. Ammunition. URL: <http://oruzhie.info/artilleriya/583-msta-b> (accessed on 04.09.2021).

<sup>5</sup> Artillery. Large caliber. Giatsints. URL: <https://topwar.ru/143897-artilleriya-krupnyy-kalibr-giacinty.html> (accessed on 01.09.2021).

<sup>6</sup> The 1976 Soviet 2A36 Giatsint -B 152 mm gun - the world's most powerful wheeled, towed artillery system. URL: <https://gunsfriend.ru/152-mm-puska-2a36-giacint-b-1976-goda/> (accessed on 04 September 2021).

<sup>7</sup> 2S3 Akatsiya Self-propelled Howitzer. URL: <https://military-informant.com/art/2s3-sp-1538262475.html> (accessed 04 Sep. 2021).

<sup>8</sup> Soviet 152 mm 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>9</sup> Gvozdika Military Hardware: history, characteristics, application of SAU. Arsenal. URL: <https://metarsenal.ru/artilleriya/gvozdika-tank.html> (accessed on 11.09.2021).

<sup>10</sup> 122mm. Firing Tables of 122-mm D-30 Howitzer. TS No.145. URL: <https://booksee.org/book/539323> (accessed on 11.09.2021).

<sup>11</sup> 122mm. Firing Tables of 122-mm D-30 Howitzer. TS No.145. URL: <https://booksee.org/book/539323> (accessed on 11.09.2021).

## A PROBABLE SECTOR OF SHELLING

As for the direction from which this artillery shelling was carried out, the first thing to note here is that the shells hit the northern and western walls of the buildings, which indicates the direction of the shelling from the northwest to the southeast. In the case of shell hit 19, a trace from the main scatter of fragments is clearly visible on the temple wall. At the same time, the angle of fragmentation can be determined (40 degrees). In addition, we can see that the trace from the main scatter of fragments intersects the horizontal plane near the northern corner of the hexagonal turret (see Fig. 33). Remarkably, both the turret and the crater from the projectile are clearly visible in the satellite image. This makes it possible to plot the scheme of fragment dispersion and determine the direction of shelling (see Fig. 34). The azimuth along which the shelling was carried out is **approximately 325 degrees**. For the interest of this investigation, we will consider a direction determination error of 15 degrees. Having the above information, we can mark the probable shelling sector on the map (see Fig. 35).

For the version of shelling with 122 mm guns, this is the Spartak - Severnoye - Avdeevka sector. And for the version of shelling from 152 mm guns, this is the Spartak - the first Novosyolovka - Novokalinovo sector.



## MILITARY PRESENCE

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>12</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 Peski was taken.<sup>13</sup> DPR supporter+s retreated closer to Donetsk city limits.<sup>14</sup>

It should be mentioned that before the arrival of longer-range guns in October, it was the 93rd AFU artillerymen who were working in the vicinity of Donetsk airport.<sup>15</sup> Satellite images dated 06.09.2014 show traces of artillery work in the sector between the settlements of Severnoye and Avdeevka (see Fig. 36).

The 2S3 Akatsiya self-propelled mortars headed by Aleksey Leonidovich Dubovik (code name: Squall) were deployed at these positions<sup>16</sup>. This man was on site nearby Donetsk airport from July to November 2014, where he was in charge of artillery of the 93rd IMB.<sup>17</sup>

The overall leadership of the Donetsk airport defense from late summer 2014 to October 3, 2014<sup>18</sup> was exercised by the commander of the 3rd Kirovograd Special Forces Regiment, Aleksandr Sergeyevich Trepak (code name: Reduit).<sup>19</sup> “I knew and controlled the entire airport: the perimeter, Peski, the entry and exit of the columns, all

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<sup>12</sup> Donetsk Airport Assault 2014-2015, Soldiers of the Russian Federation. 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 01.09.2021).

<sup>13</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 URL: <https://donbass-info.com/content/view/31070/31081/> (accessed on 01.09.2021).

<sup>14</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 01.09.2021).

<sup>15</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 01.09.2021].

<sup>16</sup> Dubovik Alexei Leonidovich. Wikipedia Free Encyclopaedia URL: [https://uk.wikipedia.org/wiki/Дубовик\\_Олексій\\_Леонідович](https://uk.wikipedia.org/wiki/Дубовик_Олексій_Леонідович) (Dubovik Alexei Leonidovich) (accessed on 01.09.2021).

<sup>17</sup> Brave hearts. Gunners. YouTube Video hosting URL: <https://youtu.be/DFwCG19BArs> (accessed on 01.09.2021).

<sup>18</sup> News from Donetsk and the Region as of January 24, 2016. Battle for Donetsk airport. Unknown details of ATS most tragic special operation [published on 21.01.2016] donbass-info.com URL: <https://donbass-info.com/content/view/26433/26444/> (accessed on 01.09.2021).

<sup>19</sup> Oleksandr Sergiyovych Trepak. Wikipedia Free Encyclopaedia URL: [https://uk.wikipedia.org/wiki/Трепак\\_Олександр\\_Сергійович](https://uk.wikipedia.org/wiki/Трепак_Олександр_Сергійович) (Trepak Aleksandr Sergeyevich) (accessed on 01.09.2021).

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>20</sup>

Thus, the following can be stated:

1) The probable shelling sector was entirely under the control of Ukrainian armed formations.

2) There were 152mm self-propelled howitzers 2S3 Acatsiya in the sector.

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

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<sup>20</sup> Donetsk Airport Defense Commander, the Hero of Ukraine Reduit: “I’m not a cyborg. I was scared too”. [published on 17.06.2015] URL: [https://m.censor.net/resonance/340362/komandir\\_oborony\\_donetskogo\\_aeroporta\\_geroyi\\_ukrainy\\_redut\\_ya\\_ne\\_kiborg\\_mne\\_t\\_oje\\_bylo\\_strashno](https://m.censor.net/resonance/340362/komandir_oborony_donetskogo_aeroporta_geroyi_ukrainy_redut_ya_ne_kiborg_mne_t_oje_bylo_strashno) (accessed on 01.09.2021).

## CONCLUSIONS

It follows from the above that on September 4, 2014 at around 17:30 local time, the Gladkovka residential area in the city of Donetsk came under shelling with 122mm or 152mm rifled artillery, resulting in the civilians' deaths and injuries.

The analysis of video news reports and information from the Internet revealed that a howitzer division of the 93rd IMB under the command of Aleksey Leonidovich Dubovik (code name: Squall) could have been located in the probable sector of shelling. This unit was armed with the 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 Trepak (code name: Redit), who was at the time in charge of the combined group of Ukrainian formations near Donetsk airport.

## LEGAL QUALIFICATION

The indiscriminate shelling of a densely populated residential area, resulting in civilians' deaths and injuries, is a crime which is punishable under Ukrainian and international law.

In compliance with **Art. 438 of the Criminal Code of Ukraine**, "... 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 the 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.

## REFERENCES

### Sources used in the text

1. 04.09.2014 - Shelling of Donetsk (Gladkovka) [published on 04.09.2014] Moi Mir Social Network. URL: <https://my.mail.ru/mail/molegka/video/105/143.html> (accessed on 11.09.2021).
2. 122mm. Firing Tables of 122-mm D-30 Howitzer. TS No.145. Booksee.org, ebook library website. URL: <https://booksee.org/book/539323> (accessed on 11.09.2021).
3. 18+ Gladkovka. Donetsk. Mortar shelling on 04.09.14 [published on 04.09.2014] Rutube Video hosting. URL: <https://rutube.ru/video/4a75c470d19c5910ffff6dba4551e18e/> (accessed on 11.09.2021).
4. 2014.09.05 Effects of shellfire of Gladkovka settlement in the city of Donetsk 2. [published on 05.09.2014] YouTube Video hosting URL: <https://youtu.be/weLsgEga9Js> (accessed on 11.09.2021).
5. September 4, 2014. Donetsk. Effects of shellfire, Gladkovka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).
6. Artillery. Large caliber. Giatsints. Top War Military Review website. URL: <https://topwar.ru/143897-artilleriya-krupnyy-kalibr-giacinty.html> (accessed on 01.09.2021).
7. Gvozdika Military Hardware: history, characteristics, application of SAU. Arsenal website. URL: <https://metarsenal.ru/artilleriya/gvozdika-tank.html> (accessed on 11.09.2021).
8. Gastronome from the inside and some garages of the “Rubin” block, not anon. [published on 06.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2881](https://vk.com/wall-48331364_2881) (accessed on 11.09.2021).

9. 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).
10. Dubovik Alexei Leonidovich. 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).
11. Donetsk Airport Defense Commander, the Hero of Ukraine Reduit: "I'm not a cyborg. I was scared too" [published on 17.06.2015] Censor NET website. URL: [https://m.censor.net/resonance/340362/komandir\\_oborony\\_donetskogo\\_aeroporta\\_ge\\_royi\\_ukrainy\\_redut\\_ya\\_ne\\_kiborg\\_mne\\_toje\\_bylo\\_strashno](https://m.censor.net/resonance/340362/komandir_oborony_donetskogo_aeroporta_ge_royi_ukrainy_redut_ya_ne_kiborg_mne_toje_bylo_strashno) (accessed on 16.09.2021).
12. On the eve of the announced ceasefire, a district of Donetsk - Gladkivka - was shelled [published on 06.09.2014] YouTube Video hosting URL: <https://youtu.be/YkzAr3yAom8> (accessed on 11.09.2021).
13. Found near my house, 23 Severskaya St. [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2403](https://vk.com/wall-48331364_2403) (accessed on 11.09.2021).
14. 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).
15. 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).
16. Shelling of Gladkovka, Donetsk 04 09 2014 [published on 04.09.2014] Odnoklassniki Social Network. URL: <https://ok.ru/video/33091883362> (accessed on 11.09.2021).
17. Shelling of the Temple in Gladkovka, Donetsk [published on 09.11.2014] VKontakte Social Network. URL: [https://vk.com/video275914949\\_171140632](https://vk.com/video275914949_171140632) (accessed on 11.09.2021).

18. Person of the year [published on 30.12.2014] New Time website URL: <https://nv.ua/ukr/project/person-of-the-year-40003280.html> (accessed on 16.09.2021).

19. Shelling the city center with GRADs [published on 06.09.2014] LiveJournal Online Journal Service. URL: <https://www.liveinternet.ru/users/rarewolf/post336031793/#comment662190160> (accessed on 11.09.2021).

20. 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).

21. About the shelling of Gladkovka on the eve of the ceasefire [published on 14.09.2014] YouTube Video hosting. URL: <https://youtu.be/-Rjq1aa5lRc> (accessed on 11.09.2021).

22. 2S3 Akatsiya Self-propelled Howitzer. Military-informant website. URL: <https://military-informant.com/art/2s3-sp-1538262475.html> (accessed on 04.09.2021).

23. Msta-S SAU. Militaryarms.ru website. URL: <https://militaryarms.ru/voennaya-texnika/artilleriya/sau-msta-s/> (accessed on 01.09.2021).

24. Status reports from Novorossiia militia forces dated 04.09.2014 [published on 04.09.2014] E-News.su URL: <https://e-news.su/news/24184-svodki-ot-opolcheniya-novorossii-04092014.html> (accessed on 11.09.2021).

25. 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).

26. 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).



27. TYPICAL GLADKOVKA | DONETSK [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2455](https://vk.com/wall-48331364_2455) (accessed on 11.09.2021).

28. TYPICAL GLADKOVKA. DONETSK. A shell splinter near the market [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2772](https://vk.com/wall-48331364_2772) (accessed on 11.09.2021).

29. 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).

30. Photo report: Donetsk shelling - burning cars and destroyed houses | Photo gallery [published on 05.09.2014] Argumenty i Fakty v Ukraine. URL: <https://aif.ua/society/social/1331985> (accessed on 11.09.2021).

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

32. Donetsk Airport Assault in 2014-2015. Soldiers of the Russian Federation. 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).

33. How Ukrainian artillerymen defend the outskirts of Donetsk [published on 16.10.2014] YouTube Video hosting URL: <https://youtu.be/DofEc-Hm5cI> (accessed on 16.09.2021).

### **Additional sources**

34. 04 09 2014 Today's Mortar Shelling of Donetsk. YouTube Video hosting URL: <https://youtu.be/W7zTf0CLIJY> (accessed on 16.09.2021).

35. 04.09.2014 Gladkovka residential area, Donetsk came under routine shelling [published on 04.09.2014] YouTube Video hosting URL: <https://youtu.be/emqandbJniI> (accessed on 16.09.2021).

36. 2014 09 05 Effects of shelling Gladkovka settlement, Donetsk 1 [published on 05.09.2014] YouTube Video hosting URL: [https://youtu.be/JkmdI\\_AKDZ8](https://youtu.be/JkmdI_AKDZ8) (accessed on 16.09.2021).

37. September 4, Donetsk. Effects of shellfire, Gladkovka. (PHOTO) [published on 13.11.2014] Donetsk Top News. URL: <https://doneck-news.com/main/photo-of-donetsk/photo-of-donecka-after-a-fire/489-4-sentyabrya-doneck-posledstviya-obstrelya-gladkovka-foto.html> (accessed on 16.09.2021).

38. Residential buildings got under shellfire in Donetsk, there are killed and wounded. [published on 04.09.2014] YouTube Video hosting URL: <https://youtu.be/U4ke2ELgB7E> (accessed on 16.09.2021).

39. Garage cooperative. Gladkovka. After shelling on 16.11.2014 [published on 04.09.2014] YouTube Video hosting URL: <https://youtu.be/Kt8jBMKzWic> (accessed on 16.09.2021).

40. Gladkovka Donetsk 4.09.2014 [published on 05.09.2014] YouTube Video hosting URL: <https://youtu.be/NtkqZ9uVPPQ> (accessed on 16.09.2021).

41. Gladkovka shelling on 04 09 2014 let let this never happen again ... [published on 31.08.2016] YouTube Video hosting URL: <https://youtu.be/nQ-YEIIINcFs> (accessed on 16.09.2021).

42. Gladkovka under mortar fire [published on 04.09.2014] YouTube Video hosting URL: <https://youtu.be/RMXmBddjbmA> (accessed on 16.09.2021).

43. Gladkovka – fires, shelling, Kievskiy District, Donetsk 04 09 2014 [published on 05.09.2014] YouTube Video hosting. URL: <https://youtu.be/1-WhK9oIWLU> (accessed on 16.09.2021).

44. DPR. Gladkovka. Nazis shelled an Orthodox church. 05.09.2014 [published on 06.09.2014] Moi Mir Social Network. URL: <https://my.mail.ru/mail/anatolij.fuks/video/24429/25303.html> (accessed on 16.09.2021).

45. DPR. Gladkovka. Effects of shelling. 05.09.2014 [published on 06.09.2014] Moi Mir Social Network. URL:

<https://my.mail.ru/mail/krivosheya85/video/112/26153.html> (accessed on 16.09.2021).

46. Donetsk. Gladkovka. 4.09.2014 [published on 06.09.2014] Rutube Video hosting. URL: <https://rutube.ru/video/5f51d4f9df518c2ccfd4a1b4dc085aaf/> (accessed on 16.09.2021).

47. Donetsk. Shelling of Kievsky District. Gladkovka. Shelling of peaceful neighborhoods. 18+ [published on 05.09.2014] YouTube Video hosting URL: [https://www.youtube.com/watch?v=cafcc\\_GI9BE](https://www.youtube.com/watch?v=cafcc_GI9BE) (accessed on 16.09.2021).

48. The sounds of shelling GLADKOVKA, Kievsky District, Donetsk. 04.09.14. YouTube Video hosting. URL: <https://youtu.be/dcqKbhzyZxw> (accessed on 16.09.2021).

49. New. Gladkovka after the shelling. 05.09.2014. [published on 06.09.2014] YouTube Video hosting. URL: <https://youtu.be/pzFf7aQ-3Fo> (accessed on 16.09.2021).

50. New. Gladkovka. Shelling of the garage cooperative. 05.09.2014. [published on 06.09.2014] YouTube Video hosting. URL: <https://youtu.be/Sf7x25tp3p4> (accessed on 16.09.2021).

51. Status reports from Novorossiia militia forces as of September 4, 2014 [published on 05.09.2014] Military Review. URL: [https://www.dialog.ua/news/16621\\_1409846254](https://www.dialog.ua/news/16621_1409846254) (accessed on 16.09.2021).

52. Securocrats opened volley fire on residential buildings in Donetsk [published on 05.09.2014] Odnoklassniki Social Network. URL: <https://ok.ru/video/5783946710> (accessed on 16.09.2021).

53. The list of buildings in Donetsk destroyed by shelling on 04.09 [published on 04.09.2014] Dialog.ua website. URL: [https://www.dialog.ua/news/16621\\_1409846254](https://www.dialog.ua/news/16621_1409846254) (accessed on 16.09.2021).

54. TYPICAL GLADKOVKA | DONETSK on 04.09.2014 at 20:24 [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2421?w=wall-48331364\\_2421](https://vk.com/wall-48331364_2421?w=wall-48331364_2421) (accessed on 16.09.2021).

55. TYPICAL GLADKOVKA | DONETSK on 04.09.2014 at 20:47 [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2455?w=wall-48331364\\_2455](https://vk.com/wall-48331364_2455?w=wall-48331364_2455) (accessed on 16.09.2021).

56. TYPICAL GLADKOVKA | DONETSK on 04.09.2014. Shelling. Photos. [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2388](https://vk.com/wall-48331364_2388) (accessed on 16.09.2021).

57. TYPICAL GLADKOVKA | DONETSK on 05.09.2014 at 13:53 [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2762?w=wall-48331364\\_2762](https://vk.com/wall-48331364_2762?w=wall-48331364_2762) (accessed on 16.09.2021).

58. TYPICAL GLADKOVKA | DONETSK 5 on 05.09.2014 at 13:53 [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2761?w=wall-48331364\\_2761](https://vk.com/wall-48331364_2761?w=wall-48331364_2761) (accessed on 16.09.2021).

59. TYPICAL GLADKOVKA | DONETSK on 05.09.2014 at 23:37 [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364?day=05092014&w=wall-48331364\\_2856](https://vk.com/wall-48331364?day=05092014&w=wall-48331364_2856) (accessed on 16.09.2021).

60. Ukrainian artillery started fire at Donetsk on the eve of peace talks [published on 05.09.2014] Odnoklassniki Social Network. URL: <https://ok.ru/video/2826244537> (accessed on 16.09.2021).

61. Explosion epicenter in Gladkovka, Kievsky District, Donetsk on 04.09.2014 Odnoklassniki Social Network. URL: <https://youtu.be/U1vWgIlgIy8> (accessed on 16.09.2021).

## ANNEXES

## Annex 1



*Fig. 1 – Scheme of the places of shell hits detected after shelling Gladkovka residential area that occurred on 04.09.2014 at 18:30 (MSC).*





*Fig. 2 – Shell hits from 1 to 6 in the satellite image dated 06.09.2014.*



*Fig. 3 – Shell hit No. 7: 23, Kutuzov Street. Left - general view against the background of the vehicle damaged by the blast<sup>21</sup>, on the right - the crater itself.<sup>22</sup>*

<sup>21</sup> 18+ Gladkovka. Donetsk. Mortar shelling. 04.09.14 [published on 04.09.2014] Rutube Video hosting. URL: <https://rutube.ru/video/4a75c470d19c5910ffff6dba4551e18e/> (accessed on 11.09.2021).

<sup>22</sup> On the eve of the announced ceasefire, a district of Donetsk - Gladkovka - was shelled [published on 06.09.2014] YouTube Video hosting. URL: <https://youtu.be/YkzAr3yAom8> (accessed on 11.09.2021).





*Fig. 4 - Shell hit No. 8:27 Kutuzov St.<sup>23</sup>*



*Fig. 5 - Shell hit No. 9: approximately 25 meters south of building No. 25 in Kutuzov St.<sup>24</sup>*

<sup>23</sup> 4 September 2014. Donetsk. Effects of shellfire, Gladkivka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).

<sup>24</sup> About the shelling of Gladkivka [published on 14.09.2014] YouTube Video hosting. URL: <https://youtu.be/-Rjq1aa5IRc> (accessed on 11.09.2021).





*Fig. 6 – Shell hit No. 9 in the satellite image dated 06.09.2014.*



*Fig. 7 – Shell hit No. 10: approximately 30 meters south of building No. 31 in Kutuzov St.<sup>25</sup>*

<sup>25</sup> September 4, 2014. Donetsk. Effects of shelling Gladkivka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).





*Fig. 8 – Shell hit No. 11: 14, Savchenko St.<sup>26</sup>*



*Fig. 9 – Shell hit No. 12: 13, Kutuzov St.<sup>27</sup>*

<sup>26</sup> 2014 09 05 Effects of shellfire in Gladkovka settlement, Donetsk 1 [published on 05.09.2014] YouTube Video hosting. URL: [https://youtu.be/Jkmdl\\_AKDZ8](https://youtu.be/Jkmdl_AKDZ8) (accessed on 11.09.2021).

<sup>27</sup> September 4, 2014. Donetsk. Effects of shellfire, Gladkivka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).



*Fig. 10 - Body of a man perished on the balcony as a result of a shell detonation at shell hit No. 12<sup>28</sup>*



*Fig. 11 - Militiamen trying to resuscitate a man injured near building No. 13 in Kutuzov Street as a result of a shell detonation at the shell hit No. 12<sup>29</sup>*

<sup>28</sup> Shelling of Donetsk Gladkovka 04 09 2014 [published on 04.09.2014] Odnoklassniki Social Network. URL: <https://ok.ru/video/33091883362> (accessed on 11.09.2021).

<sup>29</sup> 04.09.2014 - Donetsk shelling (Gladkovka) [published on 04.09.2014] Moi Mir Social Network. URL: <https://my.mail.ru/mail/molegka/video/105/143.html> (accessed on 11.09.2021).





*Fig. 12 – Shell hit No. 13: 15, Savchenko St.<sup>30</sup>*



*Fig. 13 - Piece of concrete slab that fell on the driveway in shell hit No. 13<sup>31</sup>.*

<sup>30</sup> September 4, 2014. Donetsk. Effects of shellfire, Gladkovka [published on 20.07.2019] VKontakte social network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).

<sup>31</sup> Photo report: Donetsk shelling - burning cars and destroyed houses | Photo gallery [published on 05.09.2014] Argumenty i Fakty v Ukraine. URL: <https://aif.ua/society/social/1331985> (accessed on 11.09.2021).



*Fig. 14 – Shell hit No. 14: 7, Kutuzov St.<sup>32</sup>*

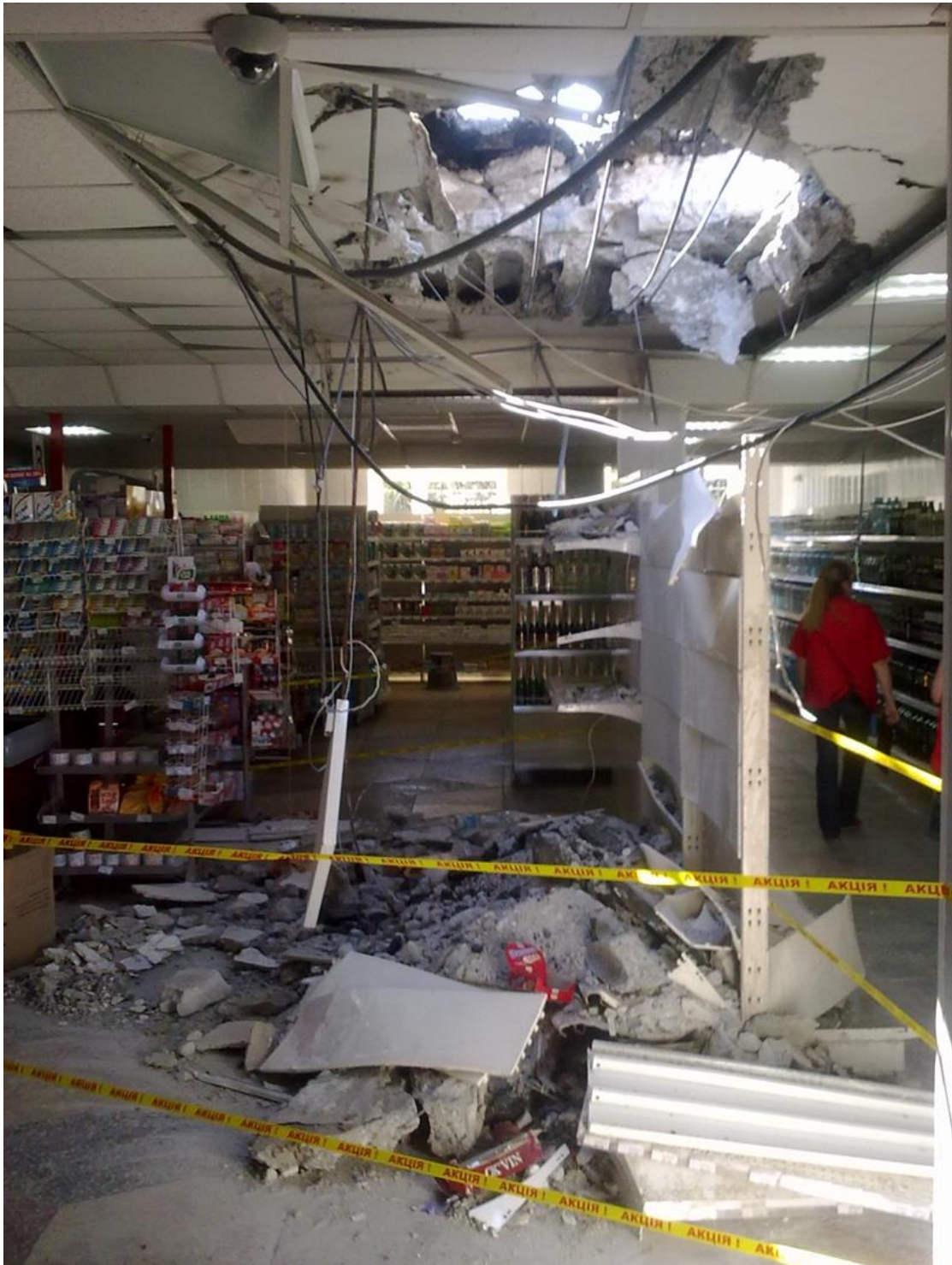


*Fig. 15 – Shell hit No. 15: 63, Zvyagilsky St.<sup>33</sup>*

<sup>32</sup> About the shelling of Gladkovka on the eve of the ceasefire [published on 14.09.2014] YouTube Video hosting. URL: <https://youtu.be/-Rjq1aa5IRc> (accessed on 11.09.2021).

<sup>33</sup> 2014 09 05 Effects of shelling of Gladkovka settlement in Donetsk 2 [published on 05.09.2014] YouTube Video hosting. URL: <https://youtu.be/weLsgEga9Js> (accessed on 11.09.2021).





*Рис. 1 – Shell hit No. 15: inside view<sup>34</sup>.*

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<sup>34</sup> Gastronome from the inside and some garages of the "Rubin" block, not anon. [published on 06.09.2014] VKontakte Social network. URL: [https://vk.com/wall-48331364\\_2881](https://vk.com/wall-48331364_2881) (accessed on 11.09.2021).



*Fig. 17 – Shell hit No. 15 in the satellite image dated 06.09.2014.*



*Fig. 18 – Shell hit No. 16: 57, Zvyagilsky St<sup>35</sup>.*

<sup>35</sup> 2014 09 05 Effects of shellfire of Gladkovka settlement, Donetsk 2 [published on 05.09.2014] YouTube Video hosting. URL: <https://youtu.be/weLsgEga9Js> (accessed on 11.09.2021).



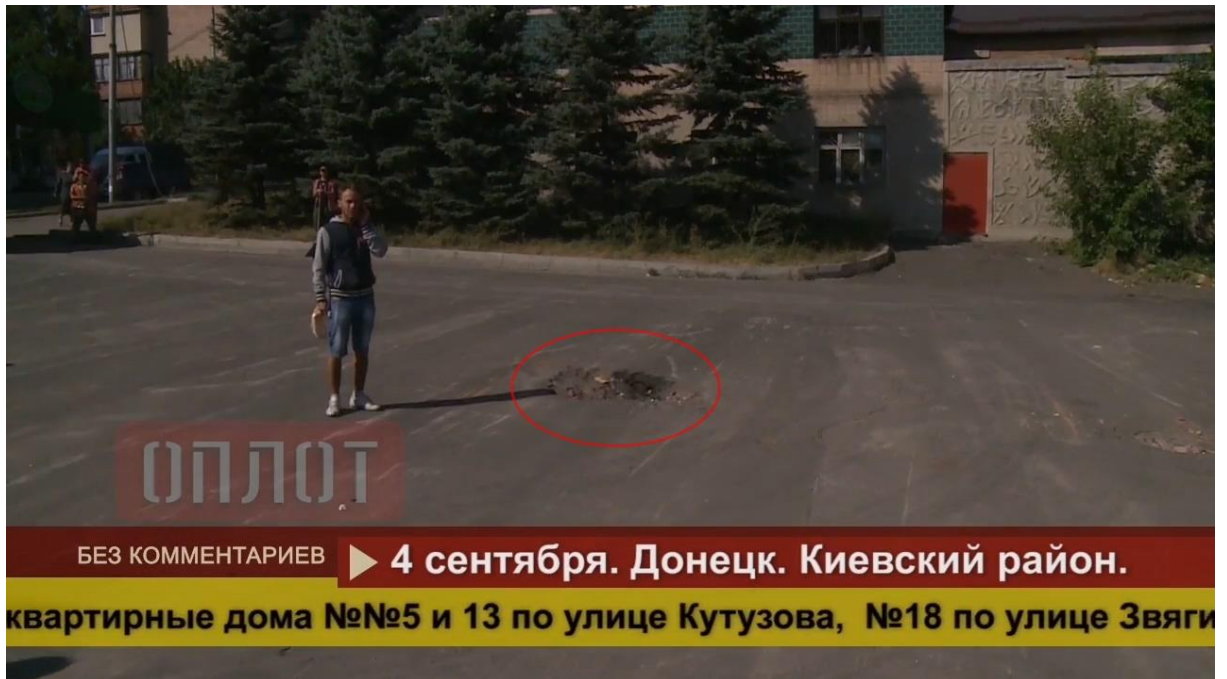
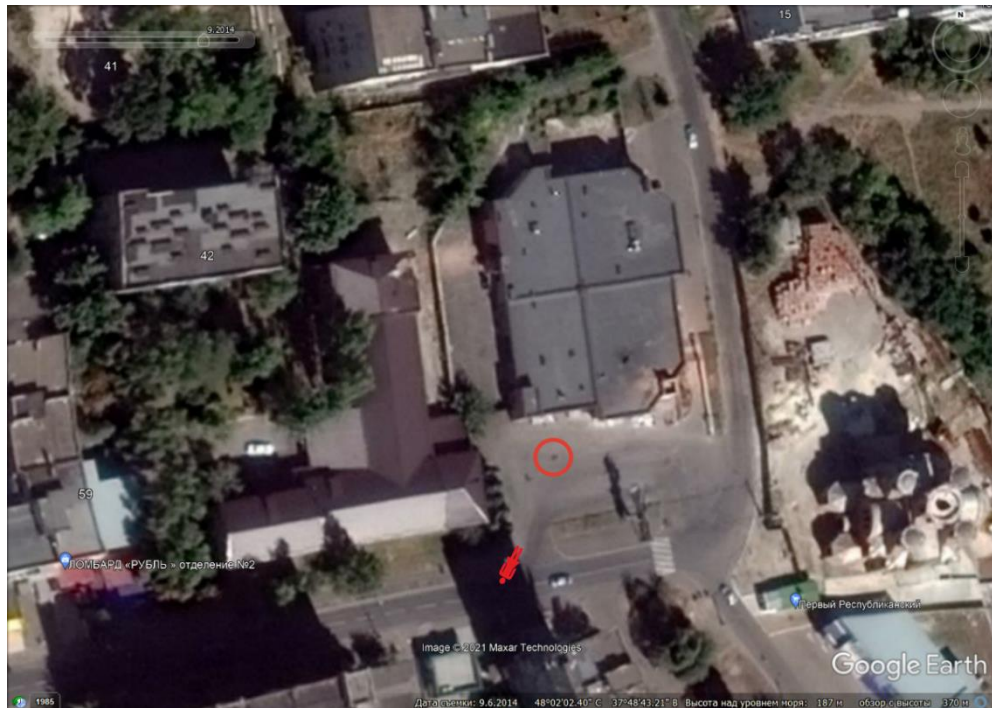


Fig. 19 – Shell hit No. 17: west side of the car park next to the food shop in 63, Zvyagilsky St.<sup>36</sup>



Fig. 20 – Shell hit No. 17 in enlarged view.

<sup>36</sup> 2014 09 05 Effects of shellfire of Gladkovka settlement, Donetsk 2 [published on 05.09.2014] YouTube Video hosting. URL: <https://youtu.be/weLsgEga9Js> (accessed on 11.09.2021).



*Fig. 21 – Shell hit No. 17 in the satellite image dated 06.09.2014.*



*Fig. 22 - Body of a woman, perished not far off shell hit No. 17<sup>37</sup>.*

<sup>37</sup> Shelling the city center with GRADs [published on 06.09.2014] LiveJournal Online Journal Service. URL: <https://www.liveinternet.ru/users/rarewolf/post336031793/#comment662190160> (accessed on 11.09.2021).





Fig. 23 – Shell hit No. 18: East side of the car park next to the food shop in 63, Zvyagilsky St. <sup>38</sup>.



Fig. 24 – Shell hit No. 18 in the satellite image dated 06.09.2014.

<sup>38</sup> September 4, 2014. Donetsk. Effects of shelling Gladkovka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).



*Fig. 25 – Shell hit No. 19: Temple of the Holy Great Martyr Panteleimon the Healer. On the left: a crater from the projectile and damage on the wall of the temple<sup>39</sup>; on the right: crater enlarged view<sup>40</sup>.*



*Fig. 26 – Shell hit No. 19 in the satellite image dated 06.09.2014.*

<sup>39</sup> September 4, 2014. Donetsk. Effects of shelling Gladkovka [published on 20.07.2019] VKontakte Social Network. URL: [https://vk.com/album-143481906\\_266188694](https://vk.com/album-143481906_266188694) (accessed on 11.09.2021).

<sup>40</sup> Shelling of the Temple in Gladkovka, Donetsk [published on 09.11.2014] VKontakte Social Network. URL: [https://vk.com/video275914949\\_171140632](https://vk.com/video275914949_171140632) (accessed on 11.09.2021).





*Fig. 27 – Shell hit No. 20: 54, Zvyagilsky St. <sup>41</sup>.*



*Fig. 28 - Projectile splinters found near building No. 23 in Severskaya St. <sup>42</sup>.*

<sup>41</sup> 2014.09.05 Effects of shellfire of Gladkovka settlement, Donetsk 2 [published on 05.09.2014] YouTube Video hosting. URL: <https://youtu.be/weLsgEga9Js> (accessed on 11.09.2021).

<sup>42</sup> Found near my house, 23 Severskaya St. [published on 04.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2403](https://vk.com/wall-48331364_2403) (accessed on 11.09.2021).



*Fig. 29 - Projectile splinter found near “Gladkovski” market <sup>43</sup>.*



*Fig. 30 – Shell fragments found in the territory of Gladkovka that had been hit by artillery fire <sup>44</sup>.*

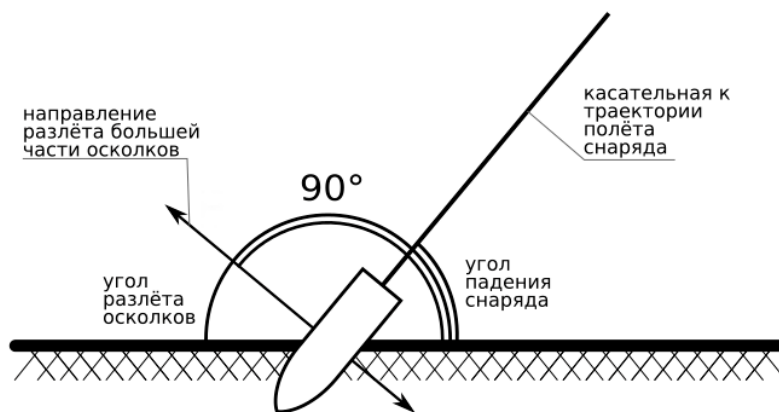
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<sup>43</sup> Typical Gladkovka | DONETSK. A shell splinter near the market [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2772](https://vk.com/wall-48331364_2772) (accessed on 11.09.2021).

<sup>44</sup> Shelling of the Temple in Gladkovka, Donetsk [published on 09.11.2014] VKontakte Social Network. URL: [https://vk.com/video275914949\\_171140632](https://vk.com/video275914949_171140632) (accessed on 11.09.2021).



Fig. 31 – Determination the fragment scattering angle (shell hit No. 14) <sup>45</sup>.



$$\text{УГОЛ ПАДЕНИЯ} = 90^\circ - \text{УГОЛ РАЗЛЁТА}$$

Fig. 32 - Determination of projectile grazing angle.

<sup>45</sup> TYPICAL GLADKOVKA | DONETSK. A shell splinter near the market [published on 05.09.2014] VKontakte Social Network. URL: [https://vk.com/wall-48331364\\_2772](https://vk.com/wall-48331364_2772) (accessed on 11.09.2021).





Fig. 34 - Scheme of determining the probable direction of shelling (shell hit No. 19)<sup>46</sup>.

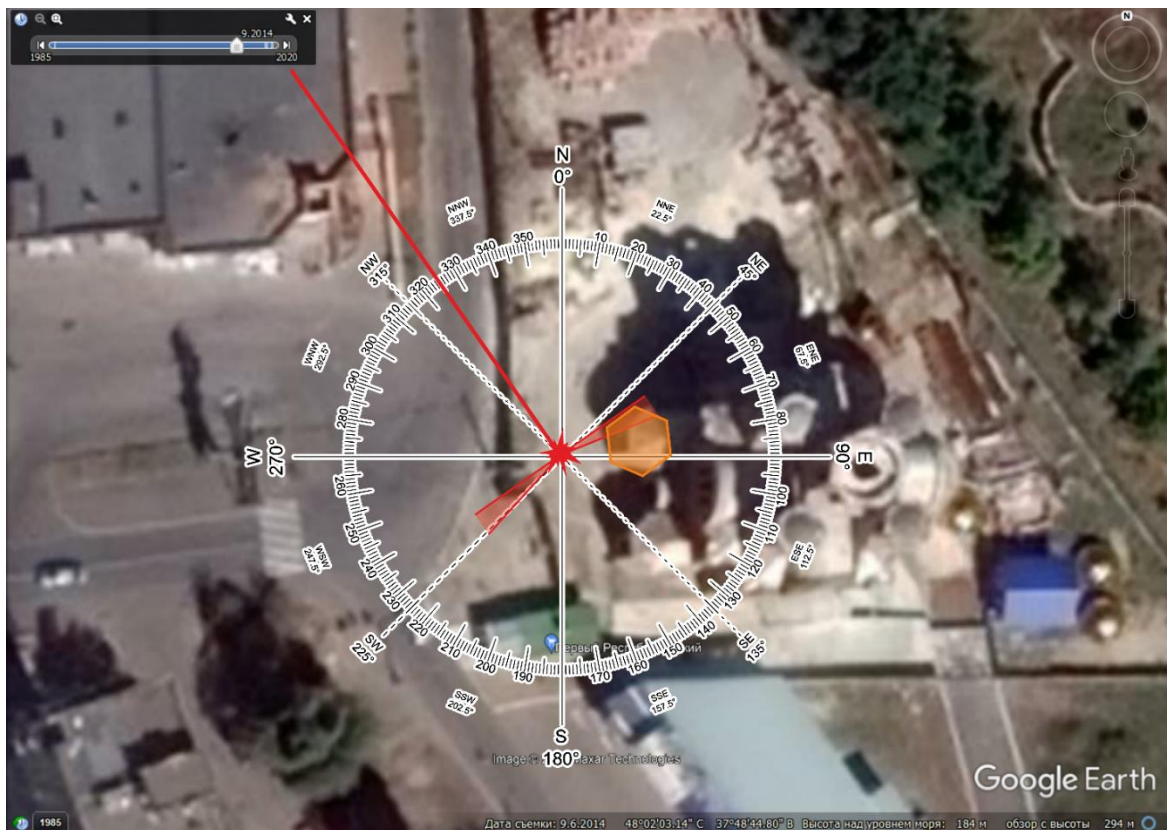


Fig. 34 - Scheme of determining the probable direction of shelling (shell hit No. 19).

<sup>46</sup> Shelling of the Temple in Gladkovka, Donetsk [published on 09.11.2014] VKontakte Social Network. URL: [https://vk.com/video275914949\\_171140632](https://vk.com/video275914949_171140632) (accessed on 11.09.2021).

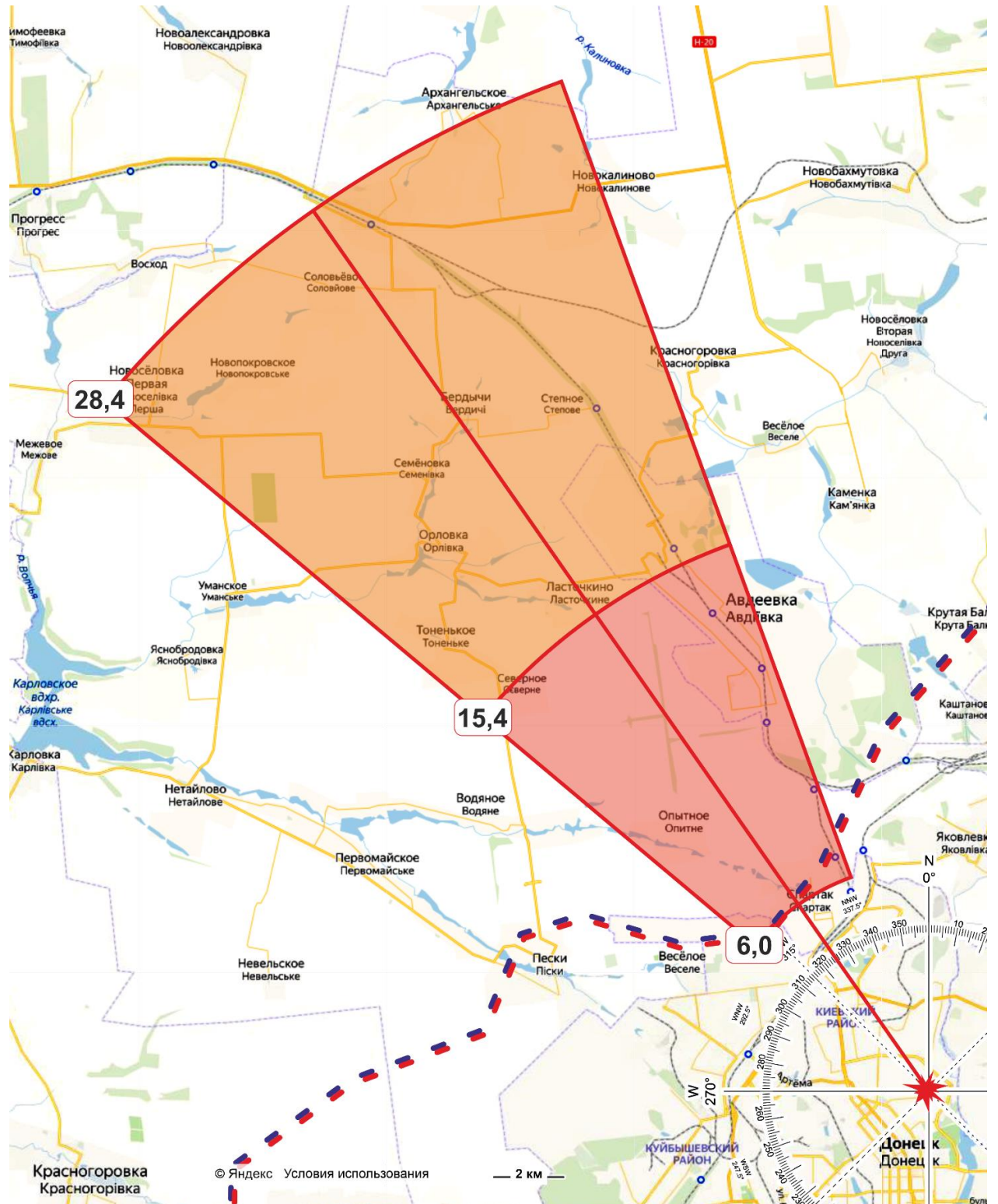


Fig. 35 - Scheme of the probable sector of shelling the Gladkovka residential area, Donetsk, on 04.09.2014. 122mm guns with a range from 6 km to 15.4 km. 152mm guns with a range from 6 km to 28.4 km.





*Fig. 36 - Traces of artillery actions between Severnoye and Avdeevka settlements.*



*Fig. 37 - Howitzer Division Commander of the 93rd IMB, Aleksey Leonidovich Dubovik <sup>47</sup>.*

<sup>47</sup> Brave hearts. Gunners. YouTube Video hosting URL: <https://youtu.be/DFwCG19BArs> (accessed on 01.09.2021).





*Fig. 38 - Commander of the 3rd Kirovograd Special Forces Regiment Alexander Sergeyevich Trepak <sup>48</sup>.*

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<sup>48</sup> Person of the year. URL: <https://nv.ua/ukr/project/person-of-the-year-40003280.html> (accessed on 01.09.2021).