Shelling of Lenin Square in the Voroshilovskiy district of Donetsk using 155 mm rifled artillery on September 17, 2022

PUBLIC INVESTIGATION

Donetsk 25.01.2024

Author: ***Ivan Aleksandrovich Kopyl***

Content

ABBREVIATIONS

UAF - Ukrainian Armed Forces

DPR - Donetsk People’s Republic

LPR - Luhansk People’s Republic

IABr - Independent Artillery Brigade

IMBr - Independent Mechanized Brigade

RF - the Russian Federation

SPM - self-propelled mortar

SMO - Special Military Operation

JCCC - Joint Centre for Control and Coordination

OC - operational capabilities

UAF - Ukrainian Armed Formations

PREAMBLE

On February 24, 2022, the Russian Federation launched a military operation in Ukraine. Vladimir Putin called its goal "to protect people who have been subjected to genocide by the Kyiv regime for eight years"[1]. According to the Minister of Defense of the Russian Federation, as of July 03, through the efforts of the Armed Forces of the Russian Federation, the LPR and the DPR, the entire territory of the LPR was liberated, which was one of the primary tasks of the SMO.[2] However, part of the DPR territory was still under the control of the Ukrainian security forces.

In the area of the Donetsk front, offensive operations were constantly carried out on the positions of the Ukrainian armed formations. In response to them, the UAF began to apply the tactics of intimidating the civilian population, striking at crowded places, transport and trade hubs.

Thus, on September 17, 2022, the area around Lenin Square in the Voroshilovskiy district of Donetsk was shelled.[3] Already on September 19, at about 11:30[4] Moscow time, the *Sokol* market in the Kirovskiy district of Donetsk underwent shelling, as a result of which three sellers were killed.[5] On the same day, at 12:23 Moscow time, Bakynskykh Komisarov Square in the Kuibyshevskiy district of Donetsk came under fire[6].

This investigation will consider the incident, which occurred on **September 17, 2022 at about 17:40.** At this time, the city center of Donetsk came under artillery fire using 155mm rifled artillery.

---

[1] Message of the President of the Russian Federation (published on 24.02.2022) Official website of the President of the Russian Federation URL: http://kremlin.ru/events/president/news/67843/videos (accessed on 06.07.2022)

[2] Russia claims key city in punishing conquest of eastern Ukraine (published on 03.07.2022) The Washington Post URL: https://www.washingtonpost.com/world/2022/07/03/lysychansk-luhansk-russia-ukraine-war/ (accessed on 06.07.2022)

[3] The enemy does not stop attacking the center of Donetsk (published on(published on 17.09.2022) the DNR in JCCC. URL: https://t.me/DNR_JCCC/10560 (accessed on 07.10.2022)

[4] Shelling was recorded from the UAF side in the directions (published on 19.09.2022) online the DNR JCCC. https://t.me/online_dnr_JCCC/16836 (accessed on 07.10.2022)

[5] Mass Media: three people killed in the shelling of the market in Donetsk (published on 19.09.2022) TASS. URL: https://tass.ru/mezhdunarodnaya-panorama/15796411?utm_source=google.com&utm_medium=organic&utm_campaign=google.com&utm_referrer=google.com (accessed on 07.10.2022)

[6] Shelling was recorded from the UAF side in the directions (published on 19.09.2022) online the DNR JCCC. https://t.me/online_dnr_JCCC/16836 (accessed on 07.10.2022)

As a result, **four civilians** were killed: a woman born in 1950, a man born in 1977.[7], was wounded and subsequently died in hospital, two men died in a GAZelle vehicle that burned near a traffic light, the latter could not be immediately identified, therefore, their personal data were not published in the public domain sources. **Eight civilians were injured**, including reporter for the Venezuelan TV channel TeleSUR[8].

Damage was also recorded at ten addresses:

- 5 Shchorsa St., Donetsk Center for Vocational Education for Services and Design;

- 74, Artioma St., direct hit on the roof of the Voroshilovsky District Administration building;

- 72, Artioma St., direct hit on the roof of the Donbass Post Office building;

- 74A, Artioma St., Donetsk State Academic Music and Drama Theater named after M.M. Brovun;

- 127 Postysheva St., He&She store;

- 9, 12, 16, Pushkina Blvd., - multi-apartment residential buildings;

- 6, Komsomolskiy Ave., - a multi-apartment residential building[9].

[7]Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10609 (accessed on 24.01.2024)

[8]teleSUR Correspondent Alejandro Kirk Injured in Donetsk (published on 18.09.2022). teleSUPhd URL: https://www.telesurenglish.net/news/teleSUR-Correspondent-Alejandro-Kirk-Injured-in-Donetsk-20220917-0001.html (accessed on 24.01.2024)

[9] Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

INCIDENT LOCATION

Having examined the incident location, studied photos and video materials from open sources, and also talked with eyewitnesses of the incident, we recorded eight shells hits. All of them have been explored and mapped using the Yandex Maps service.

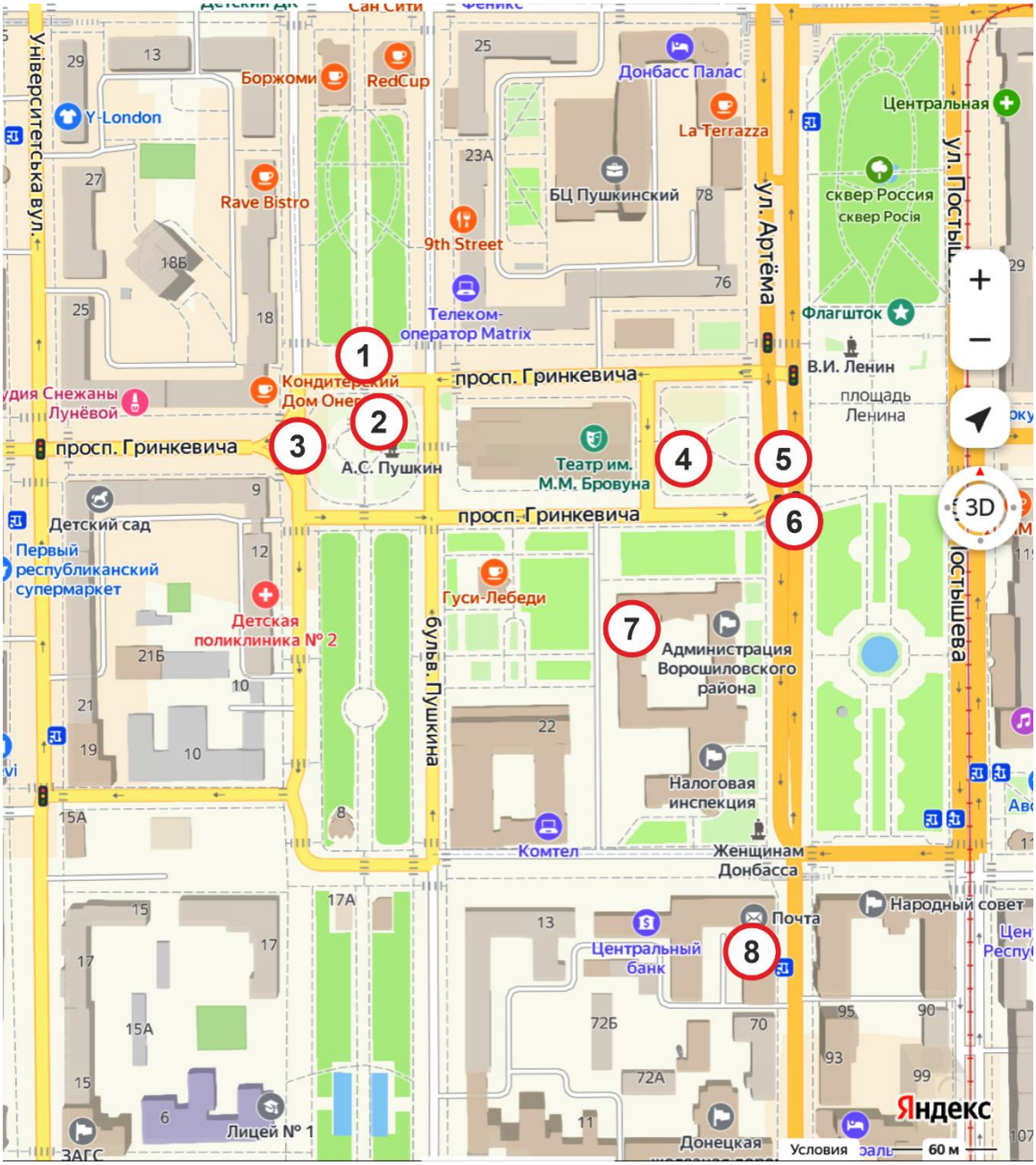

Fig. 1 – The incident location scheme

Shell hit 1 The first shell detonated on the asphalt surface of a pedestrian crossing at the intersection of Grinkevicha Avenue with the central alley of Pushkina Boulevard. In this case, a crater remained on the pavement, which is a round depression in the asphalt down to 5 cm deep and up to 50 cm in diameter. There are grooves from the main flow of fragments scattering to the northwest of the depression on the asphalt down to 1.5 cm and up to 1 m long.

Fig. 2 - Shell hit 1 located in the central alley of Pushkina Boulevard.

Shell hit 2 The shell detonated on soft soil four meters northeast of the monument to Alexander Pushkin, leaving behind a depression of approximately 10-15 cm, up to 60 cm in diameter with raised soil and uprooted bushes to the southeast of the crater center, and located to the northwest grooves from the lateral scatter of fragments that destroyed the curb framing, and also caused fragmentation damage to the monument.

Fig. 3 - Shell hit 2 located northeast of the monument to Alexander Pushkin

Shell hit 3 The third shell detonated on the asphalt surface of the intersection of Grinkevicha Avenue and Pushkina Boulevard, 25 meters southeast of the *Onegin* confectionery house. In this case, a crater remained on the pavement, which looks as a round depression in the asphalt down to 5 cm deep and up to 50 cm in diameter. There are grooves from the main flow of fragments scattering to the northwest of the depression on the asphalt down to 1.5 cm and up to 1 m long.

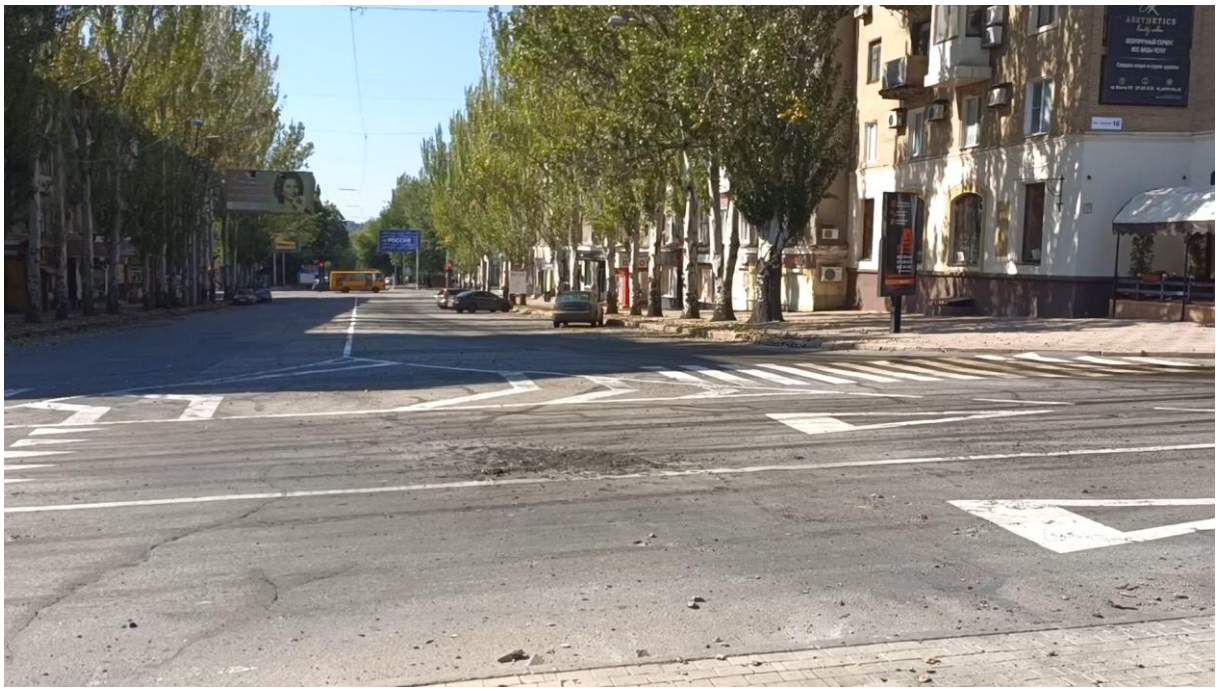

Fig. 4 - Shell hit 3 located southeast of the Onegin confectionery house

Shell hit 4 The shell hit soft soil, three meters east of the southern fountain, located opposite the main entrance to the Donetsk State Academic Music and Drama Theater named after M.M. Brovun, located at 74A, Artioma Street. A crater having a diameter of up to one meter, approximately 10 cm deep, with a clearly defined depression with clear edges of about 10 cm in diameter remained on the soft soil southeast of the geometric center of the crater, and soil was raised at the edge of the crater in the same direction.

Fig. 5 - Shell hit 4 located east of the Drama Theater

Shell hit 5 The shell detonated on the asphalt surface of the dividing strip of Artyoma Street, opposite the Donetsk State Academic Music and Drama Theater named after M.M. Brovun, located at 74A, Artioma Street. In this case, a crater remained on the pavement, which looks as a round depression in the asphalt down to 5 cm deep and approximately 50 cm in diameter. There are grooves from the main flow of fragments scattering to the northwest of the depression on the asphalt down to 1.5 cm and up to 1 m long.

Fig. 6 - Shell hit 5 in Artioma Street opposite the Drama Theater

Shell hit 6 The shell detonated on the asphalt surface along Artioma Street, 6 meters south of the pedestrian crossing at the intersection of Artioma Street and Grinkevicha Avenue. In this case, a crater remained on the pavement, which looks as a round depression in the asphalt down to 5 cm deep and approximately 50 cm in diameter. There are grooves from the main flow of fragments scattering to the northwest of the depression on the asphalt down to 1.5 cm and up to 1 m long.

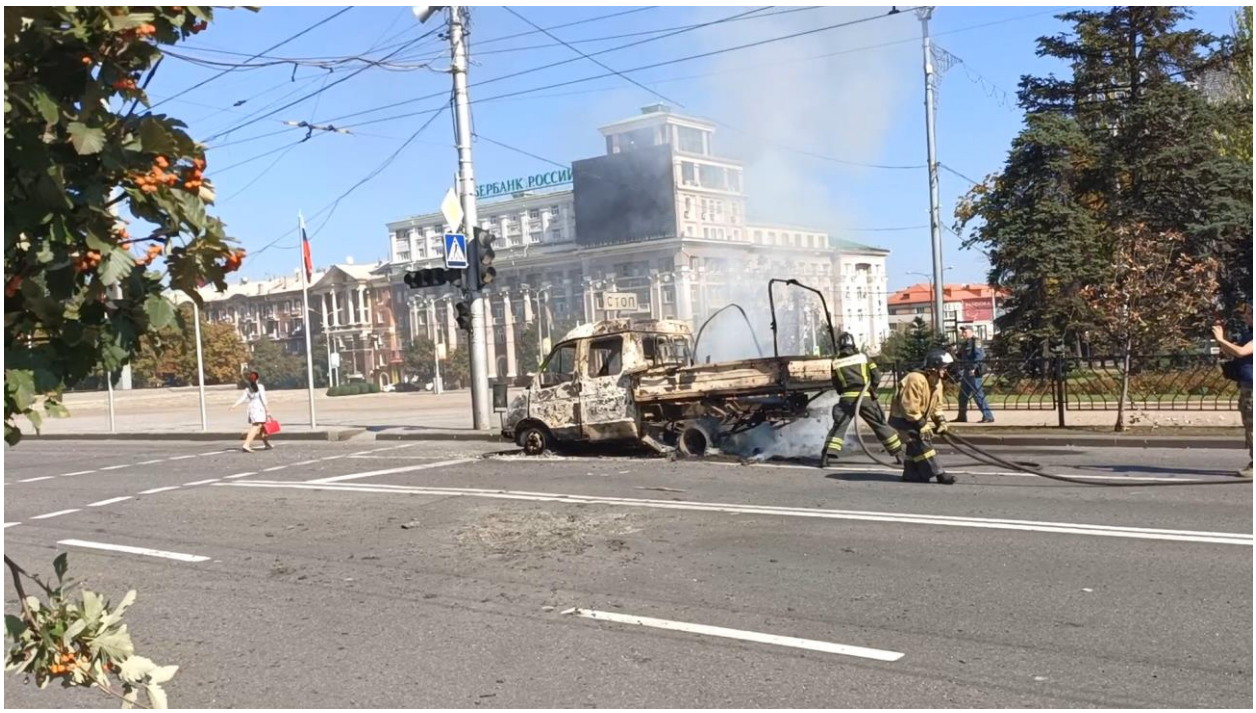

Fig. 7 - Shell hit 6 in Artioma Street with the burnt vehicle

Shell hit 7 The shell hit the roof above the western wall of the eastern wing of the building of the State Enterprise “Donbass Post” located at 72, Artioma Street, destroying a section of the roof measuring approximately 3x3 m and causing numerous damages in the attic of the building.

Fig. 8 - Shell hit 7 in the roof of the Donbass Post building

Shell hit 8 The shell hit the roof of the western wing of the Voroshilovskiy District Administration building located at 74, Artioma Street, destroying a section of the roof measuring approximately 3x3 m and causing numerous damages inside the building.

Fig. 9 - Shell hit 8 in the Voroshilovskiy District Administration building, Donetsk

WEAPON TYPE

Projectile debris

At all locations where the shells hit, numerous metal objects were found, having a copper belt with traces of rifling approximately 4 cm wide. These objects were identified as fragments of a rifled artillery shell, which is indicated by the characteristic rifling in the copper part of the objects.

Fig. 10 – Shell fragments found in the points of shell hits 4, 5, 2 and 6.

It is worth noting that such a width of the copper belt indicates the use of 155-mm M549 shells.

Fig. 11 – The bottom part of the M549/M549A1 active-rocket projectile (the part is highlighted in red, which is usually found in the form of large fragments at the site of the explosion).

To confirm this judgment, consider the scheme of the 155-mm M549 projectile, which uses a measurement system in calibers (in this case, 155-mm caliber), owing to which we can determine the width of the projectile copper belt.

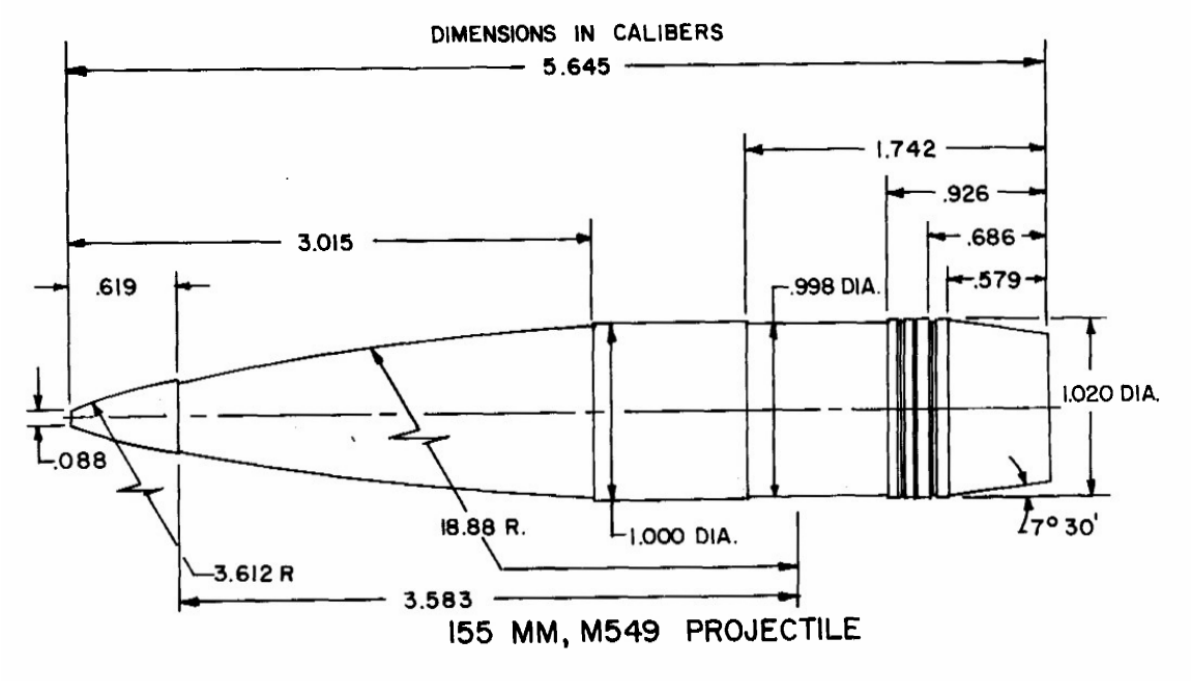

Fig. 12 - Drawing of the 155-mm M549 projectile[10].

[10] "Mc Drag" - A Computer Program for Estimating the Drag Coefficients of Projectiles. Website of Geoffrey Kolbe. URL: http://geoffrey-kolbe.com/articles/McDrag.pdf (accessed on 24.01.2024)

The width of the projectile back part, including the copper belt, obturator and igniter, is 0.926 caliber. In this case, the width of the back without a copper belt is 0.686 caliber. Thus, the difference is 0.24 caliber, which is equivalent to approximately 4 cm. Namely, this is the width of the copper belt of the M549 projectile detected on the found projectile fragments.

The JCCC also published photos of shell fragments found at the scene of the incident on its telegram channel[11]. Among other things, the photo shows two round objects that have a characteristic narrowing at one end. We identified this object as the nozzle of a NATO-standard M549 active-rocket projectile.

Fig. 13 – Nozzles of a NATO-standard M549 active-rocket projectile found by the JCCC representatives

[11] Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

In addition, at the location of shell hit 6, an artillery shell fuse made of light alloy was discovered. This object looks very similar to a fuse of a NATO-standard PD.M739A1. Precisely, such fuze is used in M549 shells.

Fig. 14 – Detonating fuze found at the site of shell hit 6.

JCCC representatives also discovered a shell fuse[12], which, based on its size, shape and markings, is unmistakably identified as a PD.M739A1 fuse.

Fig. 15 – A NATO-standard PD.M739A1 fuze found by the JCCC representatives.

[12] Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

Fig. 16 – PD.M739A1 fuze configuration[13].

All of the above gives grounds to assert that **NATO-type M549 shells were used** for the shelling of the Donetsk city center in question.

M549 Ammunition

155-mm M549/M549A1 is a separate loading ammunition with a two-piece forged body. The forward shell body is constructed from high-fragmentation steel (HF1) and is of a low-drag aerodynamic profile. The rocket-motor body makes up the rear of the shell, tit is constructed from 4340 steel. The motor body weighs 13.5 kg (approximately 3.175 kg of which is propellant), is 266.7 mm long and is encircled by a welded overlay copper driving band and obturator band, both protected during storage and transportation by a polycarbonate composition grommet. At the front of the projectile, the fuze cavity is protected during transportation by an energy-absorbing lifting plug, which protects the fuze area from damage during storage, transit and handling.

[13] Fuze PD M739A1. ARMSCOM – ART OF DEFENSE INFORMATION. URL: https://www.armscom.net/products/fuze_pd_m739a1 ((accessed on 24.01.2024)

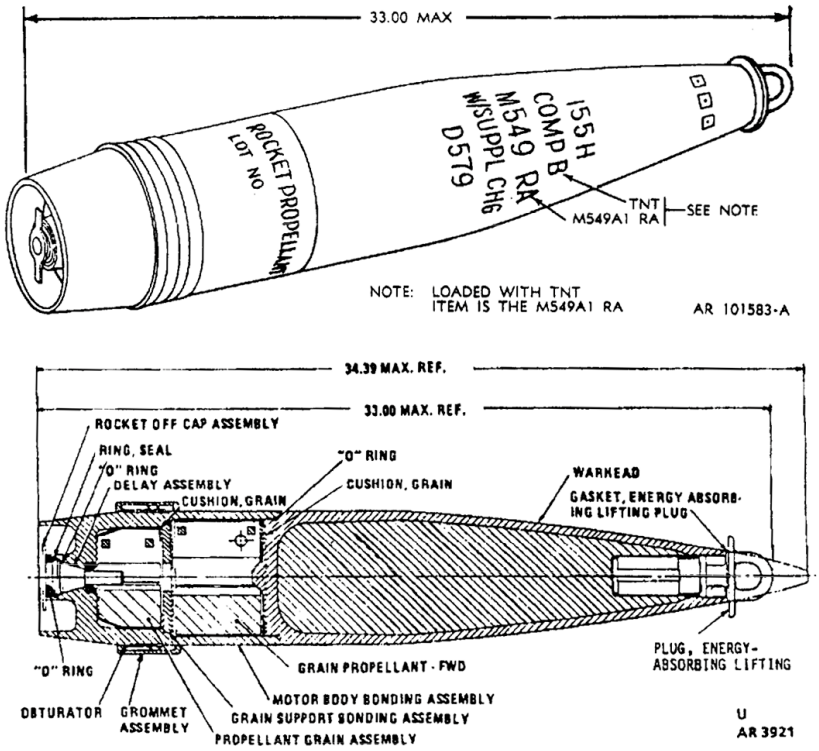

Fig. 17 – M549/M549A1 155 mm ammunition [14].

The PD.M739A1 fuze is multi-purpose and fits for 76-mm to 155-mm ammunition. This is a mechanical fuze with two operating modes, Super Quick PD function and PD delay function set using a switch on the fuze lateral face. Unlike the PDM739, the PD.M739A1 fuze has a very short delay of a few milliseconds due to a different start delay node. The fuze is equipped with a weather protection system to reduce the sensitivity of the shock sensor to water and leaves[15].

[14] ARMY AMMUNITION DATA SHEETSARTILLERYAMMUNITIONGUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, ANDARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 30.10.2022).

[15] Fuze PD M739A1. ARMSCOM – ART OF DEFENSE INFORMATION. URL: https://www.armscom.net/products/fuze_pd_m739a1 ((accessed on 24.01.2024)

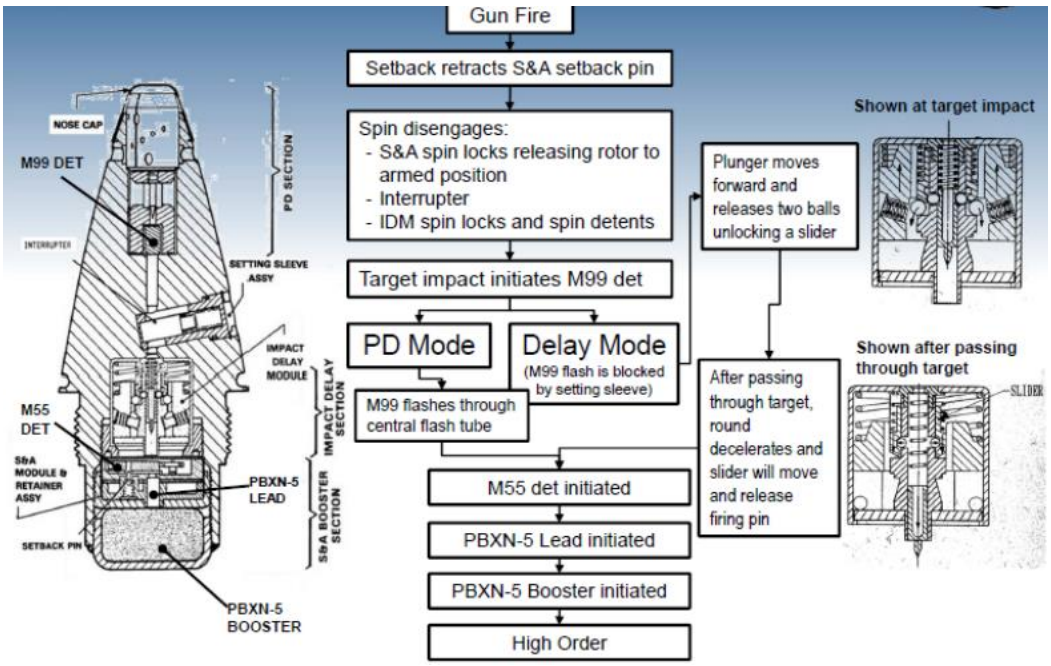

Fig. 18 –The PD.M739A1 fuze scheme[16].

Before loading the projectile, the lifting plug is replaced by a fuze, and the protector cap over the rocket-motor nozzle is removed; the 155 mm M549/M549A1 HERA is not intended to be fired in the 'rocket-off' mode. On-target effects are enhanced by the HF-1 steel body of the shell. The 155 mm M549 forward shell body is filled with a nominal 7.26 kg of Composition B. The M549A1 filler is 6.8 kg of cast TNT. At the instant of firing, the propellant gases ignite a pyrotechnic delay train in the rocket motor. The delay burns for approximately seven seconds. By the end of these seven seconds, the end of the delay train reaches the primary igniter of the rocket and subsequently lights two propellant grains in the motor via an igniter pellet. When using an energy supply, the fuze detonates an additional charge, after which the warhead filler can detonate either on impact or at a set time[17].

When using the M549/M549A1, a six-kilometer safe zone is required due to the possibility of non-igniting the rocket engine[18].

[16] M739A1 Pd/Delay artillery fuze. usgovcloudapi net URL: https://ndiastorage.blob.core.usgovcloudapi.net/ndia/2017/fuze/Amadio19340.pdf (accessed on 24.01.2024)

[17] PROJECTILES, 155-MILLIMETER: HERA, M549 AND M549A1 (published on 15.12.2020) ARMY Ammo Data Sheet URL: https://www.bevfitchett.us/army-ammo-data-sheet/ (accessed on 13.01.2023)

[18] ARMY AMMUNITION DATA SHEETS ARTILLERY AMMUNITION GUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, ANDARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 24.01.2024)

Specifications:

Weight without fuze 43.6 kg (96 lbs)

Body material: forged steel

Primer: M82

Explosive content:

M549: 7.26 kg (16 lbs) Composition B

M549A1: 6.8 kg (15 lbs) TNT

Length 87.35 cm (34.39 inches)

Body diameter: 154.89 mm

Driving band diameter:

Fuzes (with supplemental charge)

Fuzes (without supplemental charge)[19]

The firing range of the M549A1 projectile varies **from 8 to 30.4 km** (see Fig. 19).

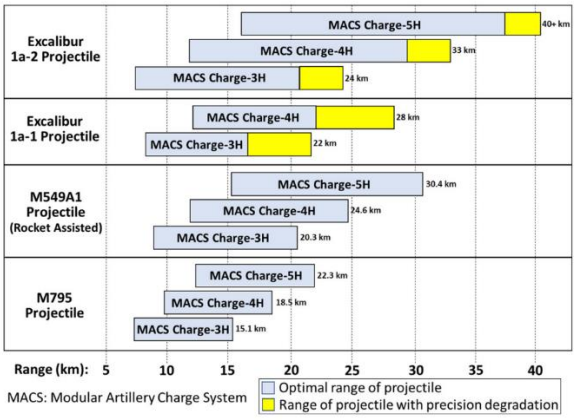

Fig. 19 – The firing range of 155-mm projectiles[20].

[19] ARMY AMMUNITION DATA SHEETS ARTILLERY AMMUNITION GUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, ANDARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 24.01.2024)

[20] A comparative analysis of contemporary 155 mm artillery projectiles. Emerald Insight URL: https://www.emerald.com/insight/content/doi/10.1108/JDAL-05-2019-0011/full/pdf?title=a-comparative-analysis-of-contemporary-155-mm-artillery-projectiles (accessed on 24.01.2024)

Deliveries of 155 mm rifled artillery to Ukraine

The first deliveries of 155-mm shells to Ukraine took place from **Canada** on April 22, 2022, since then they have gained some distribution in the UAF arsenal[21].

Deliveries from **Australia**: On April 27, 2022, the Australian government announced the delivery of six M777 howitzers and their ammunition to Ukraine.[22]

Deliveries from the **USA**:

1. On April 13, 2022, the Pentagon announced that they would transfer 18 M777 howitzers to Ukraine[23].
2. On April 21, 2022, US President Biden declared that the United States would supply Ukraine with 72 155-mm M777 howitzers and 144,000 ammunition for them[24].
3. On May 15, 2022, the mass media reported on the delivery of several tens of thousands of 155-mm M549A1 active rocket projectiles to Ukraine along with American M777 howitzers[25].
4. On May 19, 2022, the United States approved a package of assistance to Ukraine, which included eighteen 155-mm M777 howitzers[26]
5. On June 1, 2022, US President Biden declared the allocation of additional military assistance, which included ammunition for 155-mm howitzers[27]

[21] Canada sends four pieces of field artillery to Ukraine as country braces for renewed Russian attack (published on 22.04.2022) CBC URL https://www.cbc.ca/news/politics/ukraine-m777-howitzer-russia-heavy-artillery-1.6427762 (accessed on 05.09.2022) 24.01.2024)

[22] Australia to Deliver Six M777 Howitzers to Ukraine (published on 27.04.2022) The Defense Post URL: https://www.thedefensepost.com/2022/04/27/australia-m777-howitzers-ukraine/ (accessed on 24.01.2024)

[23] Pentagon holds briefing as Biden announces additional $800M in security assistance to Ukraine (published on 13.04.2022) CBS News URL: https://www.youtube.com/watch?v=7tOuhNKsiy4 (accessed on 30.10.2022)

[24] Biden: The United States to supply Ukraine with heavy artillery and drones (published on 21.04.2022) BBC News URL: https://web.archive.org/web/20220422102858/https://www.bbc.com/russian/news-61181352.amp (accessed on 24.01.2024)

[25] American long-range shells M549A1 arrived in Ukraine ((published on 12.05.2022) AVIA PRO URL: https://avia-pro.net/news/na-ukrainu-pribyli-amerikanskie-dalnoboynye-snaryady-m549a1 (accessed on 30.10.2022)

[26] US approves $40bn Ukraine aid package (published on 20.05.2022) DW URL: https://web.archive.org/web/20220520101418/https://amp.dw.com/ru/ssha-utverdili-paket-pomoshhi-ukraine-na-40-mlrd-dollarov/a-61871367 (accessed on 24.01.2024)

[27] The Ukrainian party to decide for itself at what distances to use American HIMARS multiple launch rocket systems (published on 02.06.2022) Eastern Variant URL: https://web.archive.org/web/20220602165223/https://v-variant.com.ua/ukrayna-sama-budet-reshat-kak-daleko-streliat-yz-amerykanskykh-himars-posol-ssha/ (accessed on 24.01.2024)

6. On June 15, 2022, US President Biden announced the provision of military assistance to Ukraine, which includes 18 M777 howitzers and ammunition for them.[28]

Deliveries from the **UK**: On July 21, 2022, British Secretary of Defense Ben Wallace announced an aid package to Ukraine, which included 20 units of M109 155-mm self-propelled guns[29].

Deliveries from **France**: On July 21, 2022, French President Emanuel Macron informed about the provision of 155-mm self-propelled guns to Ukraine «CAESAR»[30].

Deliveries from **Italy** on May 13, 2022, the Italian newspaper *La Republica* announced the supply of 155-mm FH 70 howitzers to Ukraine[31]

Deliveries from **the Netherlands:** On April 19, 2022, Dutch Prime Minister Mark Rutte announced the transfer of German 155-mm PzH 2000 self-propelled guns to Ukraine[32], and the delivery of three additional PzH 2000 in June[33].

Deliveries from **Norway**: On April 28, 2022, Norway withdrew twenty 155-mm «M109A3GN» howitzers from its warehouses intending to transfer them to Ukraine[34].

---

[28] The United States will allocate an additional $450 million military aid package to Ukraine: what will be included (published on 23.06.2022) UNIAN Information Agency URL: https://web.archive.org/web/20220623221128/https://www.unian.net/world/voennaya-pomoshch-ukraine-ssha-vydelyat-eshche-450-millionov-novosti-mira-11877204.html (accessed on 24.01.2024)

[29] M109 self-propelled guns, L119 howitzers, UAVs and ammunition: what's in the new UK aid package (published on 21.07.2022) The Page URL: https://thepage.ua/news/voennaya-pomosh-ukraine-chto-nam-daet-velikobritaniya (accessed on 24.01.2024)

[30] France sends heavy weapons to Ukraine for the first time (published on 22.04.2022) Vedomosti URL: https://web.archive.org/web/20220422124911/https://www.vedomosti.ru/politics/news/2022/04/22/919351-frantsiya-vpervie-otpravit-tyazhelie (accessed on 30.10.2022)

[31] Il governo italiano pronto a fornire artiglieria pesante all'Ucraina (published on 16.05.2022) La Republica URL: https://web.archive.org/web/20220516060657/https://www.repubblica.it/politica/2022/05/13/news/armi_italiane_dotazioni_ucraina_guerra-349242188/ (accessed on 30.10.2022)

[32] Netherlands Prime Minister Mark Rutte Pledges More Military Aid, Heavy Weapons to Ukraine (published on 19.04.2022) Republic world URL: https://www.republicworld.com/world-news/russia-ukraine-crisis/netherlands-prime-minister-mark-rutte-pledges-more-military-aid-heavy-weapons-to-ukraine-articleshow.html (accessed on 30.10.2022)

[33] Going Dutch Revisited: Dutch Military Aid To Ukraine (published on 09.09.2022). ORYX URL: https://www.oryxspioenkop.com/2022/09/going-dutch-revisited-dutch-military.html (accessed on 30.10.2022)

[34] Norway to provide Ukraine with M109A3GN 155mm tracked self-propelled howitzers (published on 01.05.2022) Army Recognition URL: https://www.armyrecognition.com/defense_news_may_2022_global_security_army_industry/norway_to_provide_ukraine_with_m109a3gn_155mm_tracked_self-propelled_howitzers.html (accessed on 30.10.2022)

DETERMINATION OF THE SHELLING SECTOR

Direction

In case of shell hit 1, clear traces from the detonation of shells remained on the asphalt surface, they are identified as craters from shelling at a high incidence angle. This enabled us to determine the shelling direction using the fragmentation grooves method.

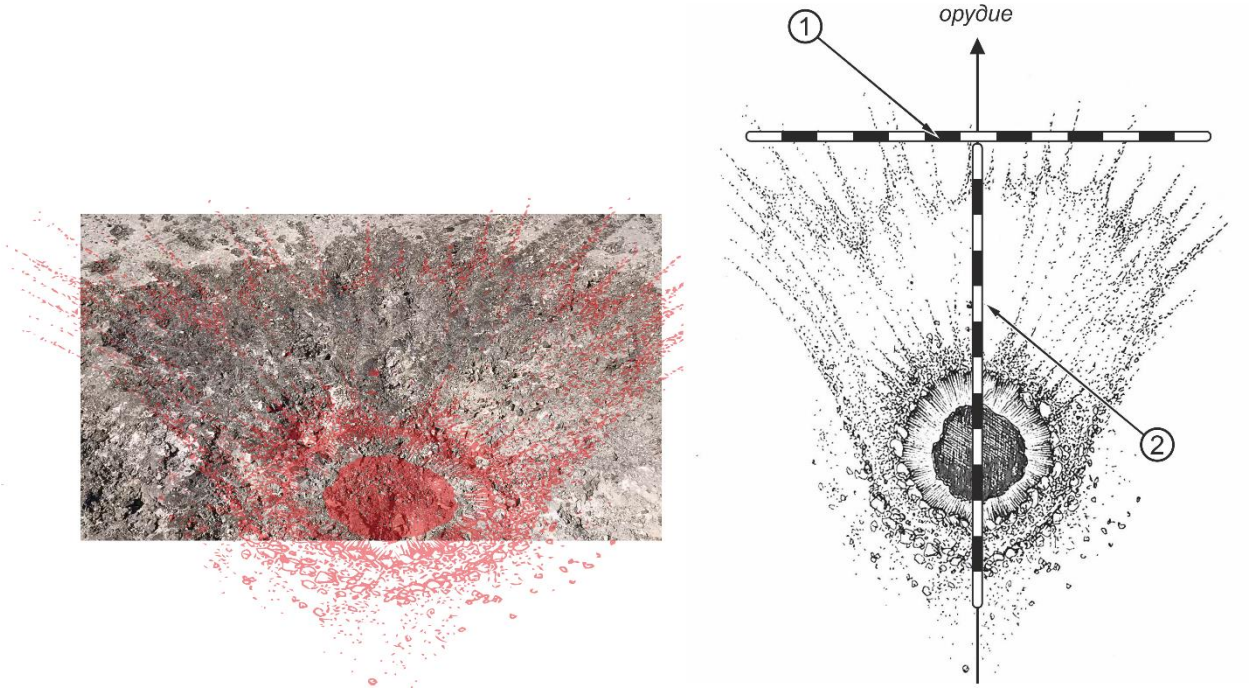

Fig. 20 – A crater at shell hit 1 and its identification by the crater type[35].

Having analyzed the video, we shot at the scene of the incident, we were able to determine the location of two points:

1) the point of the projectile contact with the asphalt surface;
2) the intersection of the azimuth along which the projectile moved with the wall of the building at 16, Pushkina Blvd.

The first point is on the road dividing line west of the roundabout located at the intersection of Pushkina Blvd. and Grinkevicha Ave. Moreover, if we extend the dividing line running along Grinkevicha Ave. to the dividing line passing along the ring on one side (we obtain point A) and draw a line through the southern side of the

[35] ANALYSIS OF CRATERS FROM HIGH-EXPLOSIVE SHELL HITS. “Fair Defense” Non-Government Organization URL: https://oosz.su/node/157 (published on 24.11.2022)

two “give way” marking signs so that it intersects the above dividing line on the ring on the other side (point B), it turns out that the distance from the point of the projectile contact with the asphalt surface to point A is two times less than the distance to point B.

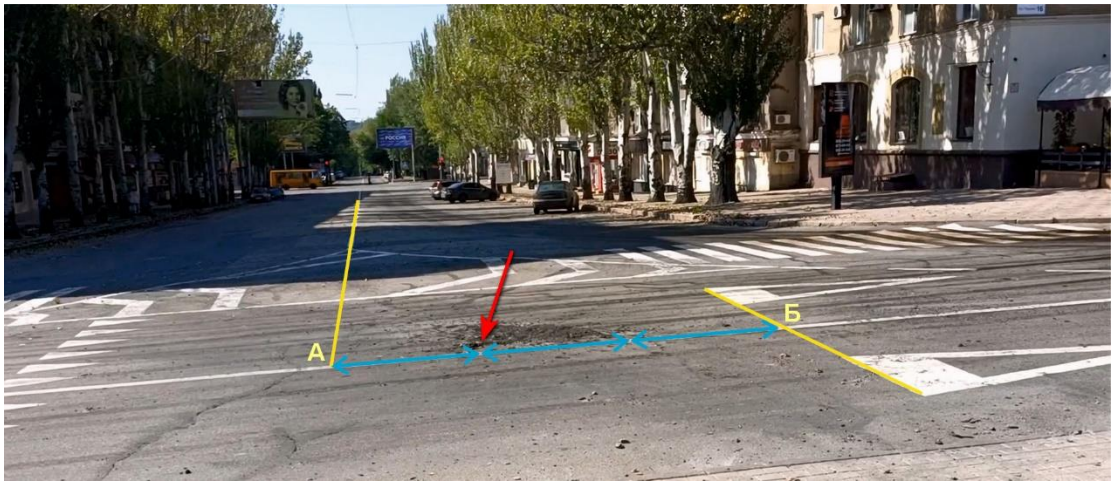

Fig. 21 – Determination of the location of the projectile contact with the asphalt surface.

The second point is under the window located near the southeast corner of the building at 16, Pushkina Blvd.

Fig. 22 – Determination of the intersection of the azimuth along which the projectile moved with the wall of the building at 16, Pushkina Blvd.

Google Earth Pro makes it possible to view satellite images for a specific date. Using the above software, we can view the satellite image for June 2022. It is worth noting that markings are usually applied in the spring. Thus, in the satellite image,

the markings are located exactly where they were on September 17, 2022. By superimposing the above points on a satellite image taken in June 2022, we obtained an azimuth of 313 degrees.

Considering measurement errors, we will determine for this investigation **an azimuth of 315 degrees plus or minus 15 degrees**.

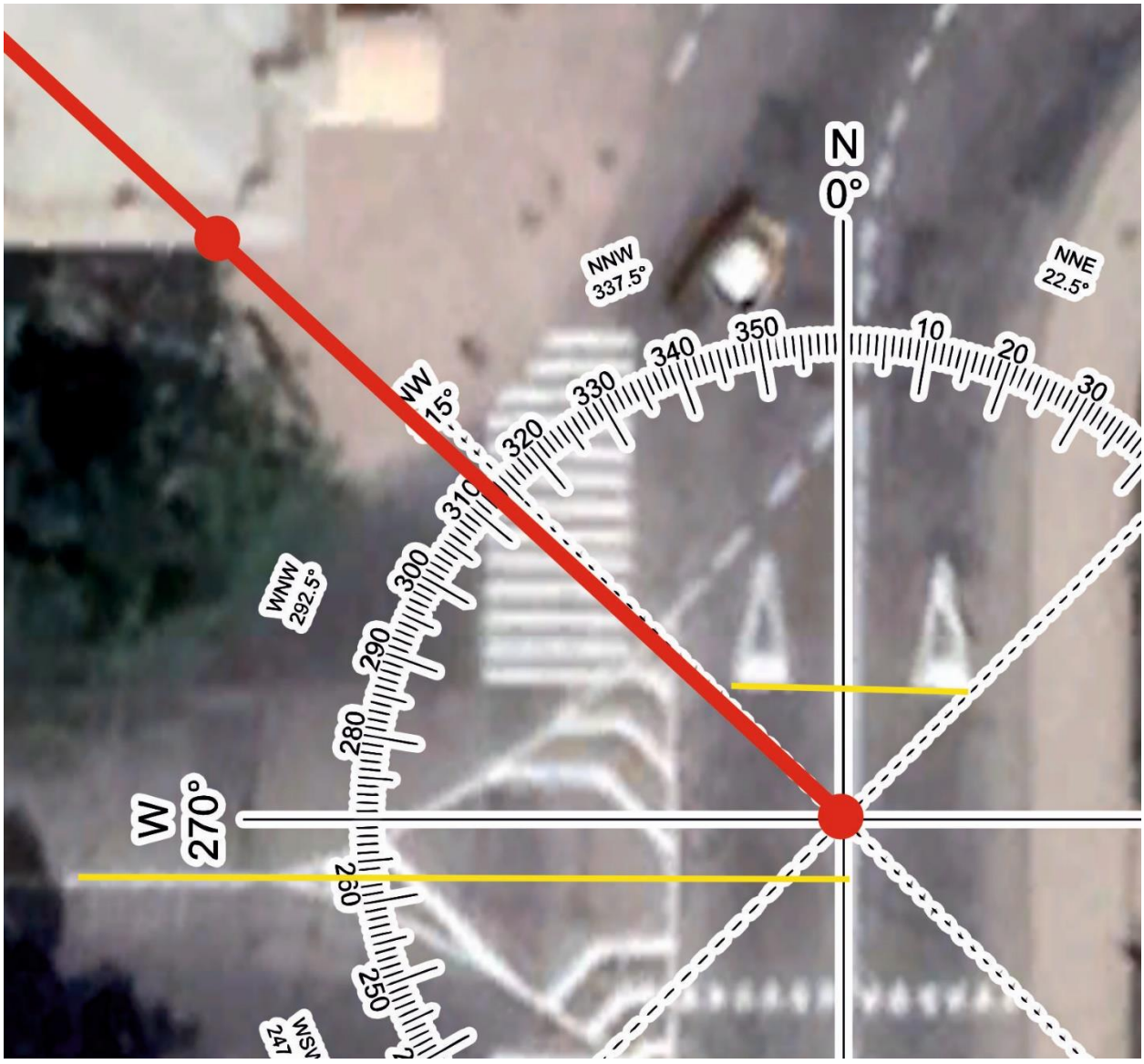

Fig. 23 – Azimuth determination at the site of shell hit 1.

It should be noted that when firing from rifled artillery, the impact sites of projectiles fired from one gun can usually be inscribed in an ellipse stretched along the direction of flying projectiles. This is an additional sign that allows for determining the shelling direction. In our case, all shell hits can be inscribed in an ellipse stretched along the 315 degrees azimuth that we have determined.

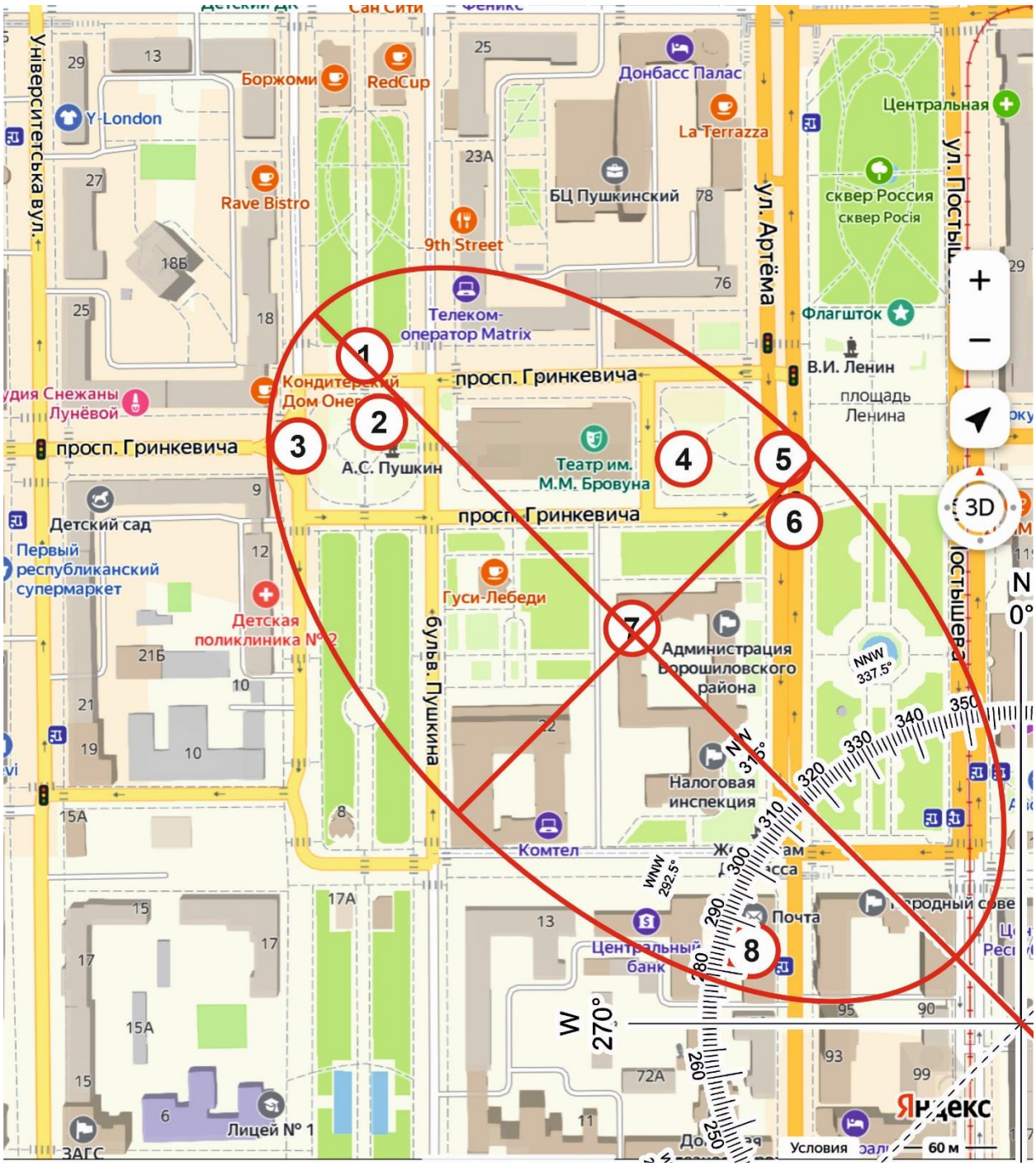

Fig. 24 – Fire direction determination for three shell hits.

Firing range

Considering the minimum and maximum firing ranges of 8 and 30.4 km, respectively, in accordance with the performance characteristics of the M549 projectile, and also based on the projectile flight direction along the azimuth of 315

degrees determined by us and a measurement error of ±15 degrees, we can map the shelling sector. Also, based on the maps of the armed confrontation in Ukraine[36], we can map the demarcation line as of September 17, 2022.

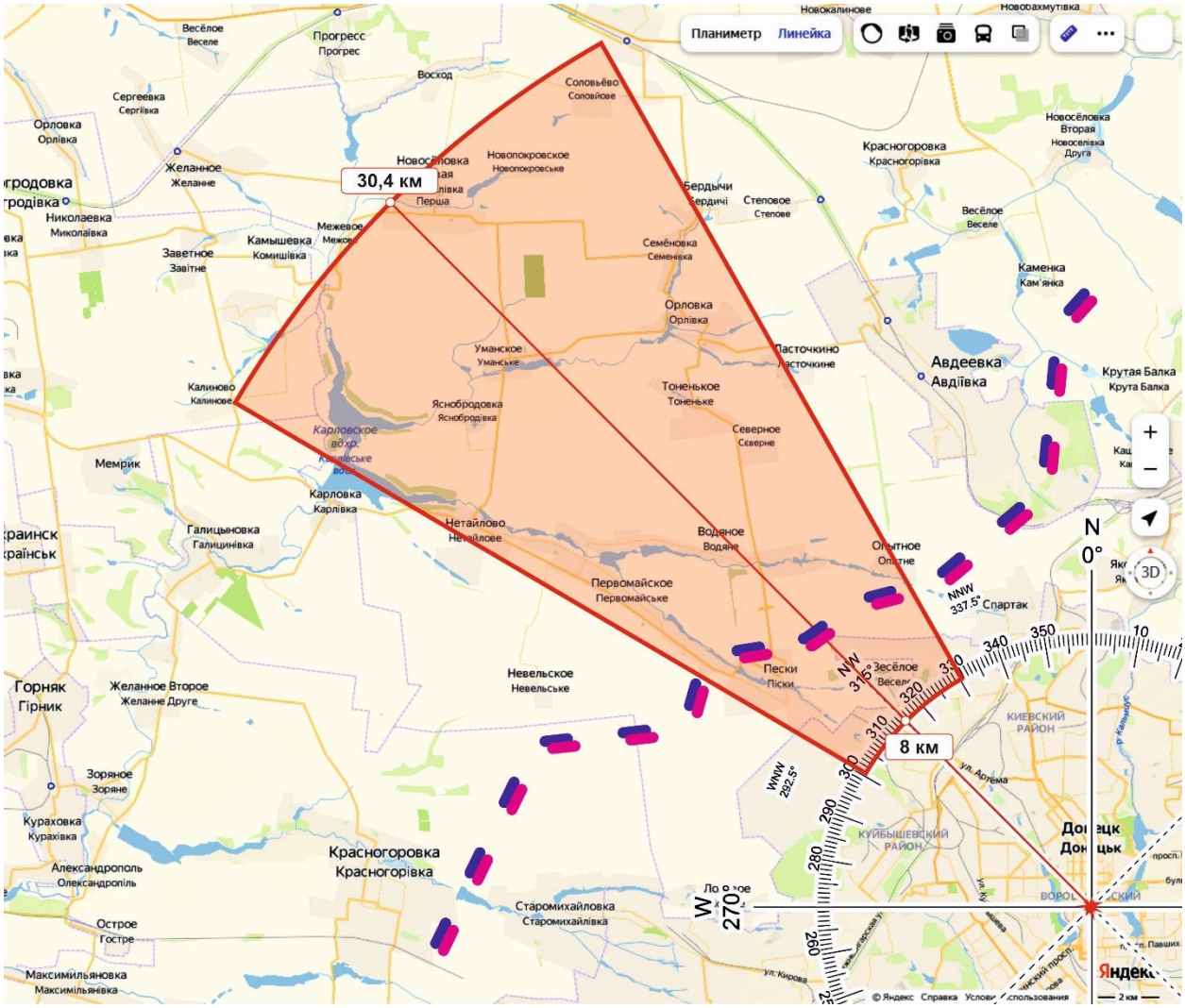

Fig. 25 – A scheme of the shelling sector.

Proceeding from the scheme drawn up, it can be argued that the shelling was carried out from the territory controlled by the Ukrainian armed formations. In addition, it is worth focusing on the fact that only the UAF can use shells of this type, since they are armed with the corresponding artillery pieces and ammunition supplied by the NATO member states.

[36] The Map of the War in Ukraine. https://maphub.net/meduza/map-a-temp-1 (accessed on 13.01.2023)

Also, if we consider only the minimum firing range of the projectile, the artillery gun should have to be based directly near the front line, which is impractical and dangerous in combat conditions, since artillery points become an easy target for the opposite side. Therefore, it can be argued that the artillery piece, from which the Bakinskikh Komissarov Square was shelled, could only be located in the territory controlled by the UAF.

MILITARY PRESENCE

The representative office of the DPR in the JCCC blamed the **110th Independent Motorized Brigade of the Ukrainian Ground Forces** for the shelling under consideration. Thus, communication dated September 17, 2022 says: "This is an area of responsibility of the 110th IMBr (commander of the 110th OMBR is Colonel Evgeniy Viktorovich Kurash, the BrAG commander is Lieutenant Colonel Dmitry Vasilyevich Tsiganyuk)"[37].

It is also known to us that as far back as at the beginning of 2015, positions of artillerymen of the 55th IMBr of the Armed Forces of Ukraine were equipped near Avdeyevka. This unit was armed with 152-mm long-range 2A65 Msta-B howitzers. We had already written about this in the investigation "Shelling of Kievskiy District, Donetsk, using rifled artillery on September 20, 2015"[38].

Fig. 26 - Battery commander of the 55th SMBr with a code name San Sanych

[37] Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 19, 2022. The DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10638 (accessed on 07.01.2024)

[38] Shelling of Kievskiy District, Donetsk using rifled artillery on January 20, 2015 (published on 29.06.2021) LOSTARMOUR. URL: https://lostarmour.info/articles/obstrel-goroda-kievskogo-rayona-goroda-donecka-s-primeneniem-nareznoy-artillerii-20-yanvarya-2015-goda/ (accessed on 14.01.2023)

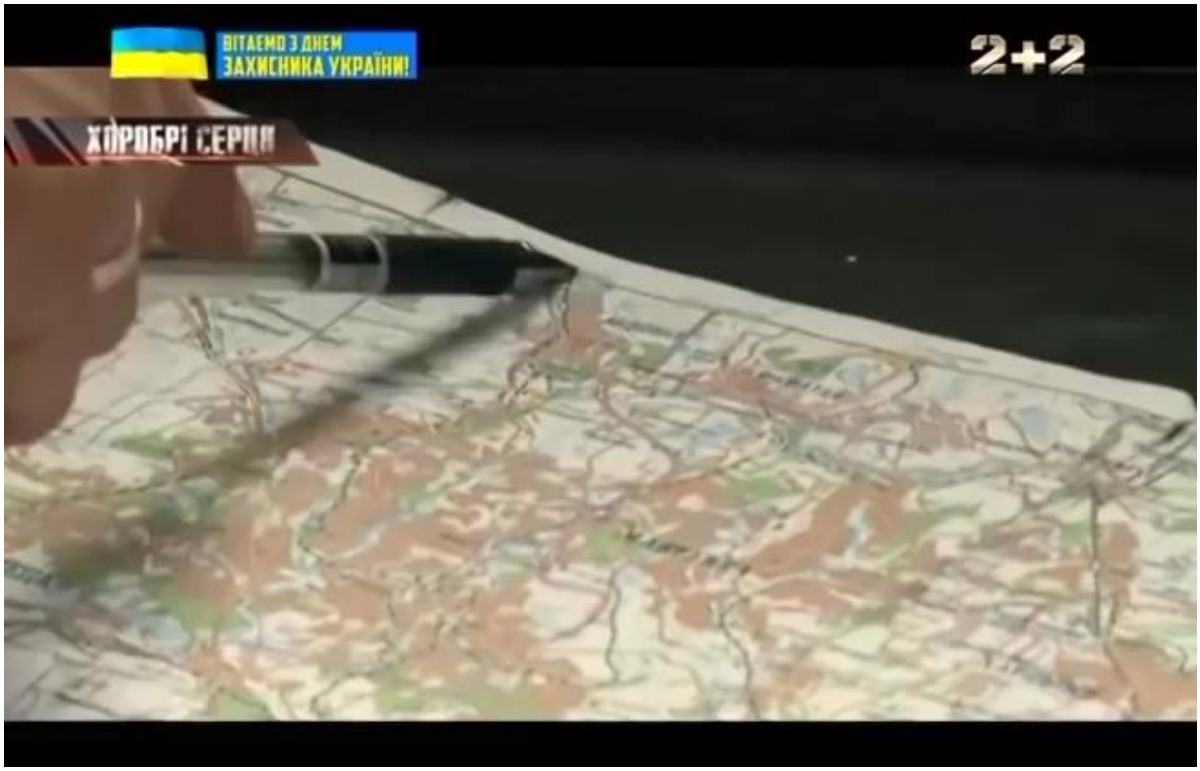

Fig. 27 – 'San Sanych' shows the position of the Ukrainian artillery behind Avdeyevka.

Thus, for example, traces of artillery work near Avdeyevka are clearly visible in a satellite image dated February 21, 2015. In addition, in the release of the Ukrainian TV show *Brave Hearts* dated October 14, 2015, the battery commander of the **55th IMBr** with the San Sanych code name was featured. In the course of the plot, he demonstrated the position just above Avdeyevka on the map, from where his unit was firing towards Donetsk[39].

It is noteworthy that the 2A65 Msta-B howitzer is similar in its characteristics to NATO 155-mm guns. For this reason, it seems likely that the decision was made to re-equip this particular unit.

Moreover, UAF artillery positions were equipped between Grodovka and Ocheretino settlements. It was from these positions that in January 2015 the Ukrainian artillerymen from the **43rd IABr** carried out regular shelling of Donetsk suburbs (Donetsk airport, Spartak state farm, Yasinovataya) (see Fig. 28), which we

[39] Brave hearts. Gunners. YouTube Video hosting. URL: https://youtu.be/DFwCG19BArs?t=2295 (accessed on 07.10.2021).

reported in the investigation “Shelling of a bus stop in Kuprina St. (Bosse area), Donetsk, January 22, 2015”[40].

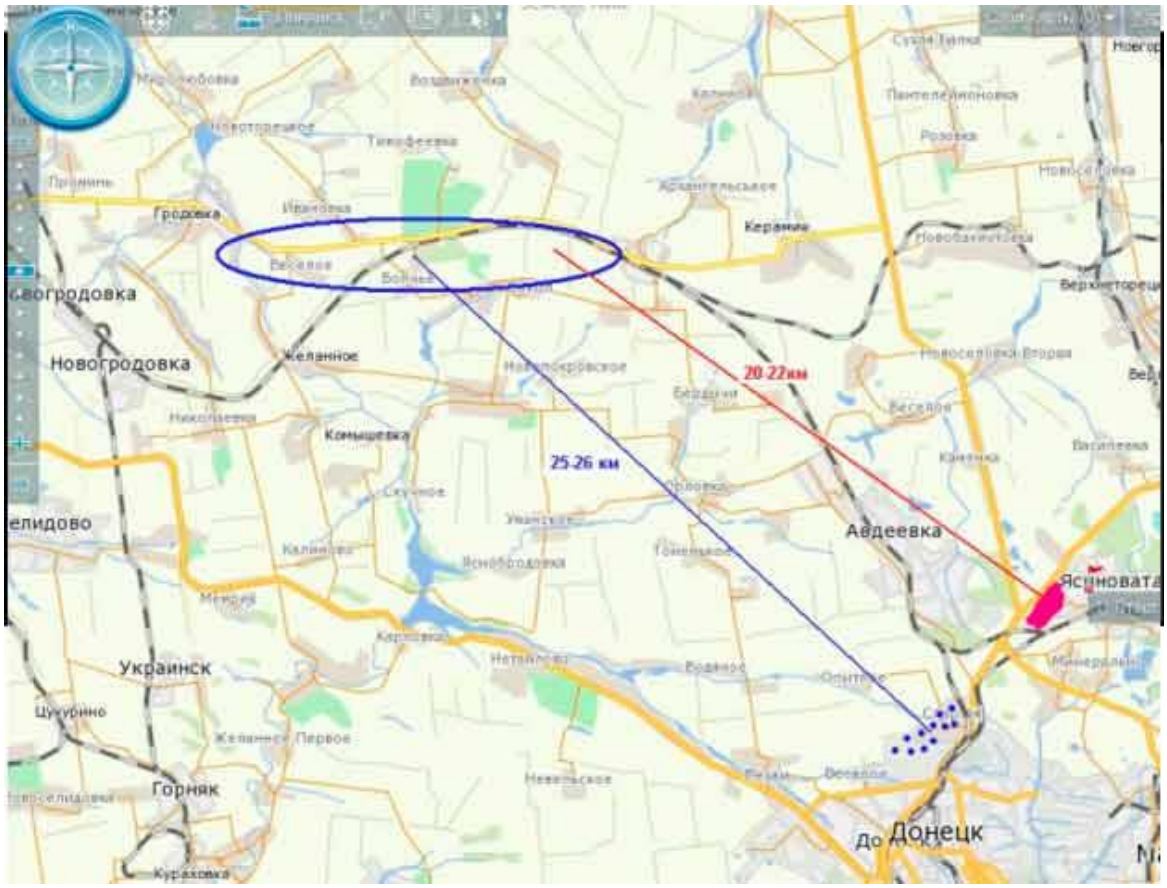

Fig. 28 – Image published on the mil.in.ua portal, showing that the alleged area of Peonies' operations was located exactly between the southeastern outskirts of Grodovka and Ocheretino

It is also worth noting that on September 10, 2022, the Ministry of Defense of the Russian Federation reported that Russian artillerymen had destroyed 155-mm M777 howitzer in the area of Novoselovka-I settlement; these howitzers had arrived from the United States as part of military assistance to Ukraine[41].

Considering the above data, it can be argued that in this shelling sector, since 2015, the UAF has equipped fortified artillery positions with arranged communications, and organized supply of weapons, ammunition, fuel, and food.

[40] The use of 2S7 Pion self-propelled cannons of the Armed Forces of Ukraine in the zone of the so-called. “ATO” and shelling of a bus stop in Kuprina St. (Bosse area), Donetsk, January 22, 2015. “Fair Defense” Non-Government Organization. URL: https://oosz.su/node/45 (accessed on 14.01.2023)

[41] RF Ministry of Defense: An American M-777 howitzer destroyed near Novoselovka I in the DPR (published on 10.09.2022) Rossiyskaya Gazeta. URL: https://rg.ru/2022/09/10/mo-rf-pod-novoselovkoj-pervoj-v-dnr-unichtozhena-amerikanskaia-gaubica-m-777.html (accessed on 14.01.2023)

Also, units armed with American M777 howitzers were undoubtedly present in this sector.

However, open sources contain very little information about Ukrainian units located today in the area west of Avdeyevka. In our understanding, we will be able to obtain more detailed information in the future.

At the same time, the fact remains undoubted that the highest military-political leadership of Ukraine is responsible for the illegal actions of the UAF, namely: President and Supreme Commander-in-Chief **Volodymyr Zelensky** and Commander-in-Chief of the Armed Forces of Ukraine **Valery Zaluzhnyi**.

CONCLUSIONS

As follows from the above, on September 17, 2022, at 17:40 (Moscow time), Lenin Square in the Voroshilovskiy district of Donetsk came under artillery fire using NATO-standard 155-mm rifled artillery ammunition. The shells flew in a direction from north-west to south-east (azimuth 315 degrees, error making ±-15 degrees). The shelling was carried out using M549 or M549A1 155-mm semi-self propelled ammunition.

The shelling sector was entirely controlled by the UAF. 155-mm artillery guns are in service with only one of the parties to the conflict, namely Ukraine.

All shell hits fell on densely populated residential areas of the city and led to damage to civilian objects, death and injury to civilians. Thus, the principles of selectivity and proportionality were violated.

The highest military and political leaders of Ukraine are responsible for the illegal actions of the UAF, namely: President and Supreme Commander-in-Chief **Volodymyr Zelensky** and Commander-in-Chief of the Armed Forces of Ukraine **Valery Zaluzhnyi**.

LEGAL QUALIFICATIONS

Indiscriminate shelling of a densely populated residential area inthe 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.

The acts described above first of all violate the principle of **proportionality,** which declares as prohibited "*attacks which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated*".

This principle is enshrined in **Article 51(5)(b)** and is repeated in **Article 57** of **Additional Protocol I** to the 1949 Geneva Conventions. It is also recognized as **rule 14 of customary international humanitarian law** and applies to both international and internal armed conflicts.

Moreover, the acts in question can be qualified as **indiscriminate attacks**.

Article 51(4) of Additional Protocol I to the 1949 Geneva Conventions expressly prohibits indiscriminate attacks and reckons the following among them: "*(a) those which are not directed at a specific military objective; (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or (c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol*".

In compliance with **Rule 71 of Customary International Humanitarian Law**: "*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*"

In compliance with **Art. 3 common to all Geneva Conventions of August 12, 1949,** extending its effect to all types of armed conflicts, "*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, shall in all circumstances be treated humanely, without any adverse distinction founded on race, colour, religion or faith, sex, birth or wealth, or any other similar criteria".

To this end, violence to life and person, in particular murder of all kinds and mutilation, are prohibited inter alia with respect to the above-mentioned persons.

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 the same acts accompanied with an intended murder, shall be punishable by imprisonment for **a term of ten to fifteen years, or life imprisonment**.

REFERENCES

Sources used in the text

1. Message of the President of the Russian Federation (published on 24.02.2022) Official website of the President of the Russian Federation URL: http://kremlin.ru/events/president/news/67843/videos (accessed on 06.07.2022)
2. Russia claims key city in punishing conquest of eastern Ukraine (published on 03.07.2022) The Washington Post URL: https://www.washingtonpost.com/world/2022/07/03/lysychansk-luhansk-russia-ukraine-war/ (accessed on 06.07.2022)
3. The enemy does not stop attacking the center of Donetsk (published on 17.09.2022). The DNR in JCCC. URL: https://t.me/DNR_JCCC/10560 (accessed on 07.10.2022)
4. Shelling was recorded from the UAF side in the directions (published on 19.09.2022) online the DNR JCCC. https://t.me/online_dnr_JCCC/16836 (accessed on 07.10.2021).
5. Mass Media: three people killed in the shelling of the market in Donetsk (published on 19.09.2022) TASS. URL: https://tass.ru/mezhdunarodnaya-panorama/15796411?utm_source=google.com&utm_medium=organic&utm_campaign=google.com&utm_referrer=google.com (accessed on 07.10.2021).
6. Shelling was recorded from the UAF side in the directions (published on 19.09.2022) online the DNR JCCC. https://t.me/online_dnr_JCCC/16836 (accessed on 07.10.2021).
7. Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10609 (accessed on 24.01.2024)
8. teleSUR Correspondent Alejandro Kirk Injured in Donetsk (published on 18.09.2022) teleSUPhd URL: https://www.telesurenglish.net/news/teleSUR-

Correspondent-Alejandro-Kirk-Injured-in-Donetsk-20220917-0001.html (accessed on 24.01.2024)

9. Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine’s war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

10. "Mc Drag" - A Computer Program for Estimating the Drag Coefficients of Projectiles. Website of Geoffrey Kolbe. URL: http://geoffrey-kolbe.com/articles/McDrag.pdf (accessed on 24.01.2024)

11. Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine’s war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

12. Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 17, 2022 (published on 18.09.2022) the DNR in JCCC: facts of Ukraine’s war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 24.01.2024)

13. Fuze PD M739A1. ARMSCOM – ART OF DEFENSE INFORMATION. URL: https://www.armscom.net/products/fuze_pd_m739a1 ((accessed on 24.01.2024)

14. ARMY AMMUNITION DATA SHEETSARTILLERYAMMUNITIONGUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, AND ARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 30.10.2022).

15. Fuze PD M739A1. ARMSCOM – ART OF DEFENSE INFORMATION. URL: https://www.armscom.net/products/fuze_pd_m739a1 (accessed on 24.01.2024)

16. M739A1 Pd/Delay artillery fuze. usgovcloudapi net URL: https://ndiastorage.blob.core.usgovcloudapi.net/ndia/2017/fuze/Amadio19340.pdf (accessed on 24.01.2024)

17. PROJECTILES, 155-MILLIMETER: HERA, M549 AND M549A1 (published on 15.12.2020) ARMY Ammo Data Sheet URL: https://www.bevfitchett.us/army-ammo-data-sheet/ (accessed on 13.01.2023).

18. ARMY AMMUNITION DATA SHEETSARTILLERYAMMUNITIONGUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, AND ARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 24.01.2024)

19. ARMY AMMUNITION DATA SHEETSARTILLERYAMMUNITIONGUNS, HOWITZERS, MORTARS, RECOILLESS RIFLES, GRENADE LAUNCHERS, AND ARTILLERY FUZES (published on 04.1994) TECHNICAL MANUAL URL: https://ru.scribd.com/doc/18119197/TM-43-0001-28-Army-Ammunition (accessed on 24.01.2024)

20. A comparative analysis of contemporary 155 mm artillery projectiles. Emerald Insight. URL: https://www.emerald.com/insight/content/doi/10.1108/JDAL-05-2019-0011/full/pdf?title=a-comparative-analysis-of-contemporary-155-mm-artillery-projectiles (accessed on 24.01.2024)

21. Canada sends four pieces of field artillery to Ukraine as country braces for renewed Russian attack (published on 22.04.2022) CBC URL https://www.cbc.ca/news/politics/ukraine-m777-howitzer-russia-heavy-artillery-1.6427762 (accessed on 05.09.2022) 24.01.2024)

22. Australia to Deliver Six M777 Howitzers to Ukraine (published on 27.04.2022) The Defense Post URL:

https://www.thedefensepost.com/2022/04/27/australia-m777-howitzers-ukraine/ (accessed on 24.01.2024)

23. Pentagon holds briefing as Biden announces additional $800M in security assistance to Ukraine (published on 13.04.2022). CBS News. URL: https://www.youtube.com/watch?v=7tOuhNKsiy4 (accessed on 30.10.2022).

24. Biden: The United States to supply Ukraine with heavy artillery and drones (published on 21.04.2022). BBC News. URL: https://web.archive.org/web/20220422102858/https://www.bbc.com/russian/news-61181352.amp (accessed on 24.01.2024)

25. American long-range shells M549A1 arrived in Ukraine (published on 12.05.2022). AVIA PRO. URL: https://avia-pro.net/news/na-ukrainu-pribyli-amerikanskie-dalnoboynye-snaryady-m549a1 (accessed on 30.10.2022).

26. US approves $40bn Ukraine aid package (published on 20.05.2022) DW Website. URL: https://web.archive.org/web/20220520101418/https://amp.dw.com/ru/ssha-utverdili-paket-pomoshhi-ukraine-na-40-mlrd-dollarov/a-61871367 (accessed on 24.01.2024)

27. The Ukrainian party to decide for itself at what distances to use American HIMARS multiple launch rocket systems (published on 02.06.2022) Eastern Variant. URL: https://web.archive.org/web/20220602165223/https://v-variant.com.ua/ukrayna-sama-budet-reshat-kak-daleko-streliat-yz-amerykanskykh-himars-posol-ssha/ (accessed on 24.01.2024)

28. The United States will allocate an additional $450 million military aid package to Ukraine: what will be included (published on 23.06.2022) UNIAN Information Agency URL: https://web.archive.org/web/20220623221128/https://www.unian.net/world/voennaya-pomoshch-ukraine-ssha-vydelyat-eshche-450-millionov-novosti-mira-11877204.html (accessed on 24.01.2024)

29. M109 self-propelled guns, L119 howitzers, UAVs and ammunition: what's in the new UK aid package (published on 21.07.2022). The Page. URL:

https://thepage.ua/news/voennaya-pomosh-ukraine-chto-nam-daet-velikobritaniya (accessed on 24.01.2024)

30. France sends heavy weapons to Ukraine for the first time (published on 22.04.2022) Vedomosti URL: https://web.archive.org/web/20220422124911/https://www.vedomosti.ru/politics/news/2022/04/22/919351-frantsiya-vpervie-otpravit-tyazhelie (accessed on 30.10.2022)

31. Il governo italiano pronto a fornire artiglieria pesante all'Ucraina (published on 16.05.2022). La Republica. URL: https://web.archive.org/web/20220516060657/https://www.repubblica.it/politica/2022/05/13/news/armi_italiane_dotazioni_ucraina_guerra-349242188/ (accessed on 30.10.2022).

32. Netherlands Prime Minister Mark Rutte Pledges More Military Aid, Heavy Weapons to Ukraine (published on 19.04.2022). Republic world. URL: https://www.republicworld.com/world-news/russia-ukraine-crisis/netherlands-prime-minister-mark-rutte-pledges-more-military-aid-heavy-weapons-to-ukraine-articleshow.html (accessed on 30.10.2022).

33. Going Dutch Revisited: Dutch Military Aid to Ukraine (published on 09.09.2022). ORYX. URL: https://www.oryxspioenkop.com/2022/09/going-dutch-revisited-dutch-military.html (accessed on 30.10.2022).

34. Norway to provide Ukraine with M109A3GN 155mm tracked self-propelled howitzers (published on 01.05.2022). Army Recognition. URL: https://www.armyrecognition.com/defense_news_may_2022_global_security_army_industry/norway_to_provide_ukraine_with_m109a3gn_155mm_tracked_self-propelled_howitzers.html (accessed on 30.10.2022).

35. ANALYSIS OF CRATERS FROM HIGH-EXPLOSIVE SHELL HITS. “Fair Defense” Non-Government Organization. URL: https://oosz.su/node/157 (published on 24.01.2024)

36. The Map of the War in Ukraine. https://maphub.net/meduza/map-a-temp-1 (accessed on 13.01.2023).

37. Records of the shelling effects in the Voroshilovskiy district of Donetsk on September 19, 2022. The DNR in JCCC: facts of Ukraine's war crimes. URL: https://t.me/DNR_JCCC/10578 (accessed on 07.01.2024).

38. Shelling of the Kievskiy District, Donetsk using rifled artillery on January 20, 2015 (published on 29.06.2021). LOSTARMOUR. URL: https://lostarmour.info/articles/obstrel-goroda-kievskogo-rayona-goroda-donecka-s-primeneniem-nareznoy-artillerii-20-yanvarya-2015-goda/ (accessed on 14.01.2023).

39. Brave hearts. Gunners. YouTube Video hosting. URL: https://youtu.be/DFwCG19BArs?t=2295 (accessed on 07.10.2021).

40. The use of 2S7 Pion self-propelled cannons of the Armed Forces of Ukraine in the zone of the so-called. "ATO" and shelling of a bus stop in Kuprina St. (Bosse area), Donetsk, January 22, 2015. "Fair Defense" Non-Government Organization. URL: https://oosz.su/node/45 (accessed on 14.01.2023).

41. RF Ministry of Defense: An American M-777 howitzer destroyed near Novoselovka I in the DPR (published on 10.09.2022). Rossiyskaya Gazeta. URL: https://rg.ru/2022/09/10/mo-rf-pod-novoselovkoj-pervoj-v-dnr-unichtozhena-amerikanskaia-gaubica-m-777.html (accessed on 14.01.2023).

Additional Sources

42. The center of Donetsk was shelled from a French howitzer, there were casualties (published on 17.09.2022) smotrim.ru URL: https://smotrim.ru/article/2946018?utm_source=smm&utm_medium=vgtrk&utm_campaign=r24 (accessed on 15.01.2024).

43. The mayor of Donetsk spoke about the consequences of the Ukrainian shelling (published on 17.09.2022) RIA News website. URL: https://t.me/rian_ru/178175 (accessed on 15.01.2024).

44. Ukrainian military attacked the Donbass Post Office building in Donetsk (published on 17.09.2022). RIA News website. URL: https://t.me/rian_ru/178172 (accessed on 15.01.2024).

45. Ukrainian troops shelled the central district of Donetsk with NATO-caliber shells 4 times in half an hour (published on 17.09.2022). RIA News website. URL: URL: https://t.me/rian_ru/178167 (accessed on 15.01.2024).

46. Those killed on Lenin Square in the center of Donetsk! (published on 21.07.2016). Through the Eyes of the DPR Telegram Channel. URL: https://t.me/glazadnr/176 (accessed on 15.01.2024).

47. Those killed in the center behind the Drama Theater (published on 17.09.2022). Through the Eyes of the DPR Telegram Channel. URL: https://t.me/glazadnr/175 (accessed on 15.01.2024).

48. Black Saturday: shelling of Donetsk. Regnum website. URL: https://regnum.ru/photo/3699267 (accessed on 15.01.2024).

49. Again, shelling of the center of Donetsk at the same coordinates. Again, the death and injury of civilians (published on 17.09.2022). D.V. Pushilin's Telegram Channel. URL: https://t.me/pushilindenis/2663 (accessed on 15.01.2024).

50. The incoming shelling of the Central Post Office in the center of Donetsk (published on 17.09.2022) Typical Donetsk Telegram channel. URL: https://t.me/itsdonetsk/30832 (accessed on 15.01.2024).

51. Incoming shelling of the Administration of Voroshilovskiy district of Donetsk now. Typical Donetsk Telegram Channel, URL: https://t.me/itsdonetsk/30812 (accessed on 15.01.2024).

52. Consequences of the today's shelling of the center of Donetsk. barbie at war by Kristina Melnikova. URL: https://t.me/barbie_at_war/2477 (accessed on 15.01.2024).

53. Head of the DPR Foreign Ministry: Kyiv Nazis are indifferent to both international law and the fate of people. DPR Foreign Ministry. URL: https://t.me/mid_dnr/2503 (accessed on 15.01.2024).

54. The UAF hit the Donetsk Main Post Office (published on 17.09.2022). WarGongzo Telegram Channel. URL: https://t.me/wargonzo/8321 (accessed on 15.01.2024).

55. Exclusive. Footage of an artillery strike by the UAF on Lenin Square in Donetsk (published on 17.09.2022). WarGongzo Telegram Channel. URL: https://t.me/wargonzo/8324 (accessed on 15.01.2024).

56. Effects of shelling the center of Donetsk from 155mm weapons. War in the Eyes of a Journalist Telegram Channel. URL: https://t.me/WarInMyEyes/1109 (accessed on 15.01.2024).

57. In the administration building of the Voroshilovskiy district of Donetsk, the windows are completely broken – a car is burning out nearby (published on 17.09.2022). Readovka Telegram Channel. URL: https://t.me/readovkanews/41902 (accessed on 15.01.2024).

58. The shelling of Donetsk center claimed several lives – at least two deaths are currently known (published on 17.09.2022). Readovka Telegram Channel. URL: https://t.me/readovkanews/41903 (accessed on 15.01.2024).

59. Shelling of Donetsk center (published on 17.09.2023) “Reporter Rudenko V” Telegram-channel. URL: https://t.me/RtrDonetsk/9394 (accessed on 15.01.2024).

60. Civilians killed again. And again they are our people (published on 17.09.2023) “Reporter Rudenko V” Telegram-channel. URL: https://t.me/RtrDonetsk/9394 (accessed on 15.01.2024).

61. Consequences of the shelling of Donetsk (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31233 (accessed on 15.01.2024).

62. There are fragments from a CAESAR howitzer at the incident location. Four deaths are already known... (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31241 (accessed on 15.01.2024).

63. Komsomolskiy Ave., local residents find fragments near the Bourbon café (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31281 (accessed on 15.01.2024).

64. Consequences of an UAF strike in the center of Donetsk (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31237 (accessed on 15.01.2024).

65. These are the fragments people find after the UAF shelling on Lenin Square in Donetsk (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31268 (accessed on 15.01.2024).

66. Consequences of today's UAF strike in the center of Donetsk (published on 17.09.2022). Code red-Donetsk Telegram Channel. URL: https://t.me/chp_donetska/31247 (accessed on 15.01.2024).