



SCIENCE, TECHNOLOGY AND GLOBAL SECURITY WORKING GROUP

Massachusetts Institute of Technology
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Dear Ms. Grebenkina:

Thank you very much for your inquiry about the well justified Russian criticisms of the handling of the OPCW JIM by the UN leadership.

The handling of this matter by the UN leadership will, unfortunately, raise serious questions about the independence and impartiality of the UN in its investigations of extremely important international incidents with regard to the use of chemical weapons. By failing to perform serious and solid investigations of these matters, the UN may well play a negative role in encouraging such attacks by rewarding organizations that are trying to gain political and military advantages by making false claims about the use of chemicals in warfare.

I hope you will consider passing on the information I am about to present to you to representatives of the Russian delegation to the UN, and to members of other delegations at the UN. In my view, the information I am providing contains compelling and unambiguous evidence that the UN OPCW investigation of this matter was deeply flawed and biased.



The fact that the UN OPCW did not have investigators under their direct control at the scene of the alleged nerve agent attack at Khan Sheikhoun on April 4, 2017 is no excuse for them making claims that are demonstrably false. The UN OPCW had access to publicly available information obtained from videos that clearly showed attempts by local organizations to manipulate information allegedly provided to the OPCW. The fact that the OPCW has made no effort to verify the accuracy of this information indicates either extreme incompetence, or much more likely, extreme bias on the part of OPCW leadership.

Of even greater concern is that the UN leadership is not exercising its fiduciary responsibilities to member countries by assuring that the OPCW is free of bias and incompetence. The mission of the OPCW is of extreme importance due to one of the major problems that has emerged in recent warfare – the increasing availability of extremely toxic nerve agents to subnational groups. By failing to properly investigate alleged events, the OPCW is likely encouraging national and subnational groups with military and political agenda to use nerve agents and then try to place the blame on adversaries.

The four labeled photographs below show images from a very well-publicized video taken by Orient News in Khan Sheikhoun very shortly after the alleged April 4, 2017 nerve agent attack.

As an inspection of the four images and the labels on the images clearly and unambiguously show, the dead goat in the image was dragged to the location where the journalists claim it died.

The location of the goat is easily established by other images taken in this and other videos. The goat was roughly 100 m South and East of a small crater that was allegedly the source of a sarin release.

Perhaps most incredible in the OPCW report is an appendix that reports evidence of sarin use from analysis of a hair from the dead goat. Nowhere in the OPCW report is there any indication that the goat may have died elsewhere, possibly from sarin poisoning in a room or barn, and was then dragged to the location as an exhibit. As a deeply experienced analyst, I find it stunning that this kind of information was either ignored by the OPCW analysts or not known to them.



The next image below shows the crater that was allegedly the source of the sarin release. There are many images of this crater that indicate subsequent tampering with the pipe that is vertically standing near the edge of the crater. In later photographs that can be seen that the pipe was pulled out from its vertical position in place flat at the center of the crater. This was then followed by claims that the pipe was a vessel containing sarin that was released at the site.



Forensic computational analysis performed by two of my colleagues, Professor Goong Chen and Dr. Chung Gu, at Texas A&M University unambiguously explains how this crater was actually created.

Our calculations speculated that the crater was formed by a standard 122 mm artillery rocket explosive warhead of the kind that is ubiquitously available for purchase around the world. An example of this standardized warhead is shown in the image below. This particular variant of the warhead weighs about 18.4 kg and has a 6.35 kg explosive charge. The exact weight of the charge in these easily purchased warheads varies somewhat but the explosive effects of charges of slightly different weight is essentially irrelevant to the findings shown in our calculations.

122 MM WARHEADS FAMILY

HIGH EXPLOSIVE (H.E.)

Explosive war component for reactive ammunition cal. 122 mm

TECHNICAL CHARACTERISTICS

- component length	605 mm
- coupling thread for the fuse	Sp M 45x2
- component body weight	~12,05 kg
- war component weight (charged)	~18,4 kg
- explosive component weight (TGAF-5)	6,35 kg
- detonator	AIX 1
- detonator weight	~0,1 kg
- operational temperatures range	-40 ⁰ C + +50 ⁰ C
- lethal range (lethal area)	min. 21,34 m (min.1430 sq.m)
- splinters number	min. 2000 buc.
- fuse equipping	MRV-U or MULTIFUNCTION fuze MFF-2T



H.E. with PREFORMED ELEMENTS

TOHAN PLANT HAS DEVELOPED THE 122mm WARHEAD WITH PREFORMED ELEMENTS THAT CAN REPLACE CLASSICAL HE WARHEAD

TECHNICAL CHARACTERISTICS

- mass of warhead	18.4 kg
- mass of explosive charge (TGAF-5)	5.4 kg
- number of preformed elements	12 pcs.
- piercing thickness (steel sheet) at 7 m	20 mm
- lethal range (lethal area)	min. 33 m (3420 sq.m)
- fuze	MRV-U or MULTIFUNCTION fuze MFF-2T



The sequence of six images below show the graphical results of our computational experiment with this warhead. Our results show exactly what is observed in the photograph.

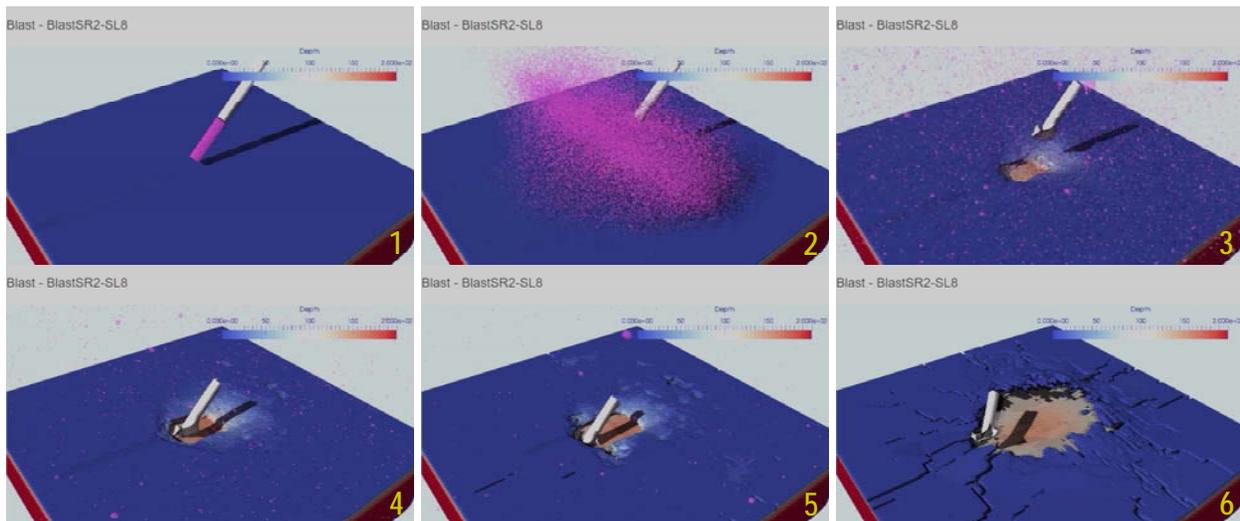
The spent rocket motor casing of the rocket is embedded at the forward edge of the crater (not at the center as some people have asserted) and it is slightly bent forward by the sudden torque that occurs when the warhead impacts the asphalt surface. If we assume that the rocket casing was fabricated into a pipe and welded, our calculations show exactly the kind of split along the axis of symmetry of the pipe. This suggests that the rocket motor was manufactured locally and probably filled with a propellant that was locally produced. One such propellant that is commonly used in the manufacturing of improvised rocket motors is potassium nitrate (KNO₃) and sugar.

The rocket motor was almost certainly fabricated locally and a purchased warhead and igniter and nozzle assembly was attached to each end of the improvised rocket.

The arrival azimuth is easily identified because the rocket is embedded at the forward edge of the crater and the bent spent rocket casing also points forward along the direction of arrival.

The cracking of the asphalt surface surrounding the crater is due to hot gases propagating through the underlying ground and pushing the asphalt vertically.

The computational mathematics calculation essentially predicts all of the observed features of the crater at Khan Sheikhoun. It is therefore unambiguous that the crater was created by a standard 122 mm explosive warhead of the type that can be purchased anywhere in the world. There is absolutely no evidence of any sarin containing vessel. The split pipe that has been inaccurately identified as evidence of the container filled with sarin is simply the casing of the rocket motor that propelled the purchased warhead to the location of the explosion.



I would appreciate it if you could pass this document on to the Russian delegation at the UN. My colleagues and I stand ready to provide the UN with accurate technical information on this matter.

Our interest is to help the UN reach a technically sound conclusion about the evidence that is available that indicates that the crater at Khan Sheikhoun has been misidentified as the source of a sarin release. We would further urge the Russian delegation to table a proposal that the scientific merits of the data and observations provided herein be reviewed by the UN leadership, as a continuing failure to properly review the veracity of the OPCW claims will ultimately have serious negative consequences for the reputation of the UN.

This will, in turn, have serious negative consequences for the role of the UN as a credible source of analysis with regard to other dismaying and potentially escalatory events that will certainly occur in the future.

If you or anybody at the UN would like to talk with me directly, I can be reached at 617-543-7646.

I am anxious to play a constructive role in this process, so people should feel free to call on me.

With best regards,

Ted Postol
617 543-7646

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