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## **C. Use of Prohibited weapons**

51. In one of the most grim patterns of attack documented during the period under review, Government forces and/or affiliated militias continued to use chemical weapons in densely populated civilian areas throughout eastern Ghouta. The use of chemical agents, most probably chlorine, was carried out by improvised rocket-assisted munitions (IRAMs), and, in one instance, air-delivered munitions.

### **A. January to March**

52. For example, Government forces and/or affiliated militias launched a series of ground attacks in Douma on 13 and 22 January, and 1 February. The attacked locations were near the Douma stadium, in Karm al-Rasas, 150 metres from Harasta and some 800 metres from the closest frontline – an area described by victims and witnesses as a residential neighbourhood inhabited by civilians with no military presence. All three attacks were carried out between approximately 5:00 and 6:30a.m. The first attack, on 13 January, injured five children, one woman, and one man. The second, on 22 January, injured six children, seven women, and eight men. The third attack, on 1 February, injured three women.

53. In all three incidents, victims and witnesses including treating medical staff described strikingly similar symptoms, including, but not limited to: respiratory distress, coughing, burning eyes, throat irritation, and nausea. Witnesses consistently recalled the distinctive smell of chlorine at the affected sites, as well as on the victims' clothing. Some witnesses described a scent similar to bleach and household detergents, though more pungent.



54. Witnesses further described a slow-acting agent: upon recognising the smell of chlorine on xx Jan/Feb, one witness recalled how s/he and others had sufficient time to rouse the victims, obtain wet cloths to serve as makeshift facemasks, and evacuate the affected areas. In all incidents, first responders effectively treated symptoms with oxygen and bronchodilators (*e.g.*, Salbutamol), the use of which is broadly consistent with exposure to chlorine.

55. In relation to the munitions used on 22 January and 1 February, the Commission obtained and assessed material evidence including metadata analysis, and identified a surface-to-surface, craft-produced rocket (IRAM). While IRAMs have been employed by a range of actors across Syria, the particular design observed during these two attacks is only known to have been used by Government forces and, rarely, affiliated militias. Specifically, IRAMs documented were built around industrially-produced Iranian artillery rockets known to have been supplied to Syrian Government forces. The particular examples documented bear markings indicating they were produced in 2016, and design features consistent with IRAMs employed by Syrian Government forces since at least late 2012.

56. The foregoing attacks follow a pattern previously documented by the Commission concerning the use of chemical weapons by Government forces, a trend consistently observed between 2014 and 2017. In none of the foregoing incidents reviewed did the information gathered suggest the involvement of armed groups. There are therefore reasonable grounds to believe that Government forces and/or affiliated militias launched IRAMs carrying a chlorine payload in Douma on 13 January, 22 January, and 1 February.

57. Further evidence on the possible use of chlorine was received in relation to two other incidents, the first having occurred in al-Shayfouniya (middle sector) on 25 February at approximately 6:30p.m. The attack killed a m/f infant and a four-year-old b/g, and injured another 18 civilians. A similar incident occurred on 7 March at approximately 10:00p.m., in an area between Saqba and Hammouriyeh (middle sector). The latter attack injured at least 27 individuals. In both incidents, victims and witnesses including treating medical staff described symptoms similar to those mentioned above (para. xx), as well as similar treatment methods (para. xx). Witnesses further consistently recognised the smell of chlorine. In both cases, however, the Commission was unable to obtain sufficient material evidence to conclusively identify the weapons delivery systems.

#### **B. April**

58. Following the collapse of ceasefire negotiations between Jaysh al-Islam and the Russian Federation to evacuate Douma in early April, pro-Government forces launched a series of attacks on the last remaining opposition redoubt on 5, 6, and 7 April (paras. xx-xx). Over the course of the day on 7 April, numerous aerial attacks struck various residential areas. At around 7:30p.m., an improvised air-delivered munition was air-dropped on a residential building, killing at least 49 individuals, and injuring up to 650 hundred others. The injuries sustained ranged in severity, with some victims having been exposed to a chemical agent.

59. The attack struck a multi-storey residential apartment building located approximately 100 metres southwest of Shohada square, close to the al-Nuamaan mosque. The residential building was situated approximately 200 meters from the Rif Damascus Hospital (based in the former al-Zeera building) which, at the time, had moved most of its operations underground and was the last functioning hospital in Douma. In addition, the underground hospital was serving as a makeshift shelter for up to 1,000 individuals. The affected residential building is located at the entrance of a tunnel which directly connected to the hospital and functioned as an entry point for ambulances. The impact site was located in a densely-populated residential neighbourhood.

60. The improvised munition employed was based around a single industrial gas cylinder fitted to a metal frame or “cradle,” with affixed fins and wheel assemblies, which tore free from its cradle during impact. The munition struck a top-floor balcony on the residential building and damaged the concrete structure, leaving the nose of the weapon positioned directly above a hole into the room below. Remnants of these modifications, including distinctive wheel assemblies, are clearly visible in material evidence received and analysed by the Commission.



61. The interior ceilings of the residential building bore structural damage consistent with the munition being air-delivered. One witness saw a yellow-green cloud emitting from a bomb in flight falling towards the building. Remnants of the cylinder also displayed signs of impact damage and bore markings in a grid pattern – which appear to match those of the wire mesh fencing present at the impact site, consistent with it having broken through the mesh in a freefall descent from an aircraft. Flight observation logs received by the Commission demonstrate that – immediately prior to the attack – several Syrian Government Mil Mi-8 (“Hip”) helicopters took off from nearby al-Dumayr Military Airport and were circling the town.

62. Damage analysis of the improvised gas-cylinder bomb and its positioning appear to indicate that it rapidly released large amounts of a substance into the interior space of the residential apartment building. The location of victims in areas of the building lower than the impact point suggests a heavier-than-air chemical agent, such as chlorine, was employed. Positions and physical symptoms displayed by victims of the attack support witness claims that the agent acted rapidly, and likely indicate that a high concentration of the chemical sank downwards.

63. Forty-nine (49) individuals were killed as a result of the attack, most of whom were present in the residential building. At the site of the incident, rescuers reported finding 43 deceased individuals, comprising 38 within the building, and five outside. Upon evaluating and corroborating witness statements, material evidence, and comparing lists of victims received, at least 10 men, 16 women, eight girls, and three boys were killed. As entire families perished, the Commission was unable to receive a full list of names, though the identities of 35 victims were conclusively established. In addition, one woman, two children, and three men subsequently died while being treated at Rif Damascus Hospital, increasing the overall death toll to 49 individuals.

64. Statements and material evidence received and analysed by the Commission in relation to the deceased within the apartment building revealed an array of symptoms consistent with exposure to a choking agent, including signs of foaming at the mouth and nose, blue skin indicating impaired blood circulation, meiosis (constriction of the pupils), as well as some cases of dilated (wide open) pupils. Numerous victims unable to flee the building collapsed shortly after exposure.

65. Several interviewees including treating medical staff confirmed that up to 650 more individuals required medical attendance after being exposed to a chemical agent. One interviewee recounted how the Rif Damascus Hospital received approximately 500 patients within two hours of the attack, all of whom presented moderate to severe cases of exposure consistent with chlorine inhalation. Another medical staff recounted having personally treated more than 50 victims – some 30 children, 15 women, and 10 men.

66. The majority of victims sustained minor injuries including throat burn, coughing, and difficulties in breathing. The treatment of those moderately affected included immediate removal of their clothes, thorough washing, and provision of oxygen, inhalers, and medicine to assist breathing (*e.g.*, Salbutamol). In more severe cases, atropine and corticosteroids were used.

67. Numerous victims and witnesses described the strong, distinctive odour of chlorine emanating from the impact site, in areas surrounding the residential building, at the entrance of the tunnel to Rif Damascus Hospital, and on the bodies and clothes of victims delivered to the hospital. First responders attempting to reach the scene in its immediate aftermath were impeded by the overwhelming smell of chlorine.

68. Symptoms reported by victims and witnesses, as well as those visible on material evidence received by the Commission, are consistent with the use of a choking agent such as chlorine. The majority of fatalities as well as surviving victims with varying degrees of exposure showed no signs of external injury. Rather, the symptoms exhibited by victims were indicative of poisoning consistent with exposure to a high concentration of a toxic chemical, and material evidence supports this theory. Remnants of the weapons delivery system analysed by the Commission are consistent with an improvised chemical weapon delivered from the air, which disseminated a liquefied, compressed gas. Statements from observers, victims, first responders, and medical staff corroborate each other and support this conclusion.

69. While it is highly likely that chlorine was released, it cannot be ruled out at this stage that another chemical agent was simultaneously employed. A more likely alternative to the combined use of two chemical agents would be a massive chlorine release at a highly lethal concentration, triggering acute respiratory distress syndrome and near-immediate collapse.

70. By launching chemical attacks on xxx, there are reasonable grounds to believe that Government forces committed the war crime of launching indiscriminate attacks in a civilian populated area, in further violation of the right to life, liberty, and security of person (Annex III, paras. xx-xx). The use of chemical weapons further violated the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, ratified by the Syrian Arab Republic in 2013.