

Death Depot

An investigative report documenting the _____ explosion of an arms depot in a residential neighborhood in Sana'a

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Open-Source Investigations Unit

Who are we?

SAM Organization for Rights and Liberties

SAM is an independent, non-profit Yemeni human rights organization that began its activities in January 2016 and obtained a license to operate in December 2017. The organization aims to document human rights violations in Yemen, work to stop violations through advocacy in partnership with local and international organizations, raise human rights awareness through societal rights development, and hold human rights violators accountable in Yemen in collaboration with international mechanisms and human rights organizations.



Introduction

In the heart of the capital, Sana'a, within densely populated neighborhoods, a massive explosion occurred on May 22, 2025, leaving no nearby home untouched by its impact and marking yet another tragedy in Yemen's ongoing suffering. This report documents the incident from multiple perspectives, tracing the voices of witnesses, images of destruction, and the backdrop of responsibility, in an effort to present a comprehensive and clear picture of what happened, without overlooking the human and legal dimensions that naturally arise in the face of such a catastrophe.



Executive Summary

On May 22, 2025, a devastating explosion occurred at an arms depot belonging to the Houthi group in a densely populated residential area of Sana'a, killing and injuring at least 150 civilians, including women and children. The explosion caused widespread destruction to homes and instilled fear and panic among the residents.

Available evidence, including satellite images and witness testimonies, indicates that the depot was situated within a civilian urban block without any preventive measures to protect the population, constituting a flagrant violation of the principles of international humanitarian law, particularly those related to the protection of civilians during armed conflict.

This report documents the incident from a human rights perspective, relying on digital and visual evidence gathered by SAM, with a focus on legal responsibilities and the immediate humanitarian consequences. It also provides urgent recommendations to prevent such violations from recurring.



Methodology

The report is based on a meticulous investigative methodology that relied on eyewitness testimonies and video footage captured by local residents, in addition to satellite images and credible media sources. Audio and explosion sounds were analyzed using spectral analysis tools and advanced Al-driven software, and results were compared with reliable scientific data on the characteristics of shock waves in military explosions.

Facts and information were documented during a critical timeframe, taking into account the challenges posed by limited direct access to the affected area due to restrictions imposed by the Houthi group.

Despite the report's reliance on technical evidence and data, it does not ignore the human aspect. Introductory sections maintain a humanitarian tone, shedding light on the plight of the residents and the impact of the explosion on them, ensuring that the report does not appear as a mere cold presentation of facts without conscience.



Background

In areas under Houthi control in Yemen, a recurring pattern has emerged in recent years: the use of residential neighborhoods for storing weapons and ammunition, showing a blatant disregard for the risks this poses to civilians. This pattern reflects not only a disregard for civilian lives but also a systematic violation of international humanitarian law.

In the capital, Sana'a, several civilian neighborhoods have been transformed into undeclared military strategic points, with arms depots located near schools, hospitals, and homes, which multiplies the risk to civilian lives during any explosion or attack.

The recent incident falls within this alarming context, underscoring the urgent need to hold perpetrators of these violations accountable and to protect residents from the unlawful militarization of their neighborhoods.



When the Explosion Spoke: A Calm Account of Zero Hour

On the morning of May 22, 2025, a massive explosion rocked the Sarf residential neighborhood in Sana'a. It originated from an arms depot hidden in the heart of a populated area, leading to dozens of deaths and injuries and widespread destruction of homes and property.

The shock wave of the explosion reverberated throughout the entire area, with echoes heard in streets far from the site. Thick columns of smoke rose above the destroyed buildings. These first moments portray a tragic scene for residents who found themselves trapped amid the rubble and panic in a neighborhood they never expected would become the epicenter of such a massive blast.

A local resident told SAM that the incident in Sana'a involved the explosion of a large depot containing shells, rockets, and all kinds of explosives. The depot was located next to Zayed Hospital Road, in a neighborhood below the Ma'rib Road from the Rawdah side, specifically at the house of 'Adlan. He pointed out that this site was a newly established yard after the 2015 warehouse bombings, where ammunition, rockets, and shells were distributed to various locations and yards, and this was one of them. The site is also used for manufacturing landmines, and he believed that it was run by the Houthis.

Activist Ahmed Al-Ashwal wrote on Facebook that the Khushm Al-Bakrah explosions were three in total: two inside a hangar and the third in the basement of a building. He noted that the damage to families was caused by the first explosion and the basement blast, which was located directly beneath residential apartments. He also stated that the hangar depot contained ammunition for machine guns, mortars, and grenades.

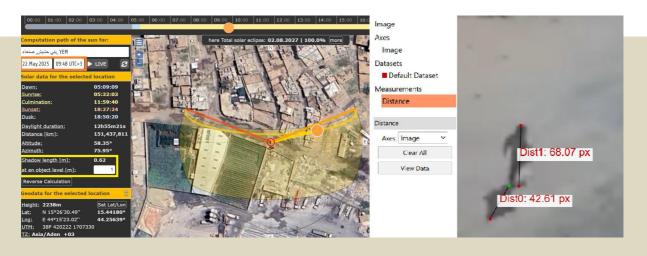
We conducted scraping of comments on several Facebook posts and analyzed them using artificial intelligence. It turned out that the explosion's rumble was heard in vast areas of Sana'a. Many residents <u>reported</u> that the sound was so powerful it reached areas like Sarf and Sa'wan and was heard even in places relatively far from the incident's center. Some accounts mentioned that the explosion was <u>audible</u> at a graduation party in the Riyolex Hall in Ayah Roundabout, where the hall itself shook from the blast, reflecting its widespread impact. Other commenters said they had never <u>felt</u> such a strong blast before: houses shook, windows shattered, and the sounds of successive explosions continued for hours. Many were jolted awake in terror, some initially believing it to be an airstrike due to the intensity of the blast. Others said it was a catastrophic event shrouded in media silence by the de facto authorities in Sana'a.



Explosion Timing: The Seconds That Changed Everything

In a fleeting moment, the explosion reshaped the entire neighborhood. It's not just about knowing the date of the incident; it extends to pinpointing the exact moment of the explosion and uncovering the signs that preceded it. Here, field data intersect with audio-visual testimonies to document the critical moment that carried all the consequences of the disaster.

The explosion's timing was estimated by analyzing the shadow of a person visible in a <u>video</u> and matching it with relative height measurement equations. We captured a frame from the video showing the individual seconds before the explosion and measured the ratio of the person's shadow length to their actual height using the Automeris tool. The measurements showed that the shadow length was 42.61 pixels and 68.07 pixels, respectively. Based on the principle of proportionality, the shadow-to-person height ratio was determined to be 0.62:1, meaning that the shadow's length was 62% of the person's actual height. Using the <u>Sun Calc</u> tool, we entered the previous values (shown in the highlighted rectangle in orange) to calculate the actual time of the video recording. We found that the video was captured at 9:48 AM (highlighted rectangle in orange).



This timing matches the accounts shared by <u>Facebook</u> users, who <u>reported</u> that three violent explosions occurred between approximately 9:50 AM and 9:55 AM.



At the Center of the Explosion: An Intense Portrait of Force

At the epicenter of the incident, the circle of destruction widened to reveal an explosion's core that surpassed estimates, unleashing a violent shockwave toward the surroundings. The data reveals figures that mirror what neither sound nor image can fully capture, leaving behind a scene that is difficult to sum up in words or numbers.

Satellite images from Sentinel Hub, available on May 24, 2025, showed the extent of the destruction caused by the explosion. The area highlighted in red marks the epicenter of the blast, which lies 60 meters southeast of the Khushm Al-Bakrah point, as confirmed by journalist and open-source intelligence specialist Farouq Moqbel Al-Kamali in a <u>post</u> on his Facebook page dated May 24.



We determined the diameter of the explosion's epicenter, which ranged from 20 to 24 meters—the area directly impacted and completely destroyed. It's worth noting that the explosion's impact extended beyond 60 meters, meaning the level of destruction decreased with distance from the core, something not clearly captured by the available satellite images since the minimum diameter for the epicenter to appear clearly on the map is usually no less than 10 to 20 meters.





To estimate the approximate energy of the explosion, physical models were applied that correlate the size of the visible fireball with the destruction radius observed in the images. Assuming that the fireball, as seen in the explosion video, had an estimated diameter of about 20 meters, and that the destruction radius extended approximately 60 meters, this points to an estimated explosive yield ranging between 1,000 and 2,300 kilograms of TNT equivalent, with a weighted average around 1,500 to 2,000 kilograms. This is a significant amount of energy, consistent with the detonation of a warehouse containing large quantities of munitions or ballistic missile warheads.



Blood and Numbers: Images Beyond Statistics

Far from being mere numbers, these statistics reveal a shocking human reality where the loss of lives intersects with the loss of homes and memories. The explosion's impact extended to every house that witnessed the incident and every family that paid the price. Here, the numbers are only the entry point for understanding the magnitude of the tragedy, which left its mark on faces and hearts. They also serve as a silent reminder that what happened cannot be ignored or reduced to a list or table–it remains present in the details of lives that will never be the same.

A local resident told SAM that the explosion resulted in civilian casualties, about 45 people from the adjacent neighborhood. He stated that the blast destroyed nearby homes and caused severe damage to surrounding houses, noting:

"The homes of residents of Sarf, above the Khushm Al-Bakrah point, were affected, including the house of Hazam 'Azzi and Sheikh Mani's house, whose wife was injured. Also, some houses belonging to 'our friends' from Sarf, inhabited by people from Wasab, were completely destroyed." Among those whose rented homes were destroyed, he mentioned the names: Mohammed Fayadh, Hussein Mahmoud 'Awsah, and Hazem Ali Nasser 'Awsah.

According to eyewitnesses, a local source close to one of the victims, and three medical sources who spoke to <u>Al-Masdar Online</u>, the number of dead and wounded exceeded 150. They added that about 23 bodies were transported on trucks to the Police and Zayed hospitals. One of these bodies was of a girl whose head and limbs had been severed, making her identification extremely difficult. The wounded were forcibly taken under the supervision of Houthi gunmen to the sections designated for Houthi casualties in the Police, Thawra, Republican, and 48 hospitals, in addition to three private hospitals.

Rashed Al-Kindi lost his wife, Asmah Abdullah, and his children: Khaled (10 years old), Reem (16), Nasira (14), Kholoud (12), and Ghoroub (6). Two of his houses were destroyed—one collapsed on top of his family, the other on top of his tenant neighbors. His van was also destroyed, and two of his brothers were injured, according to a source who spoke on condition of anonymity.

Farouq Al-Kindi wrote on his <u>Facebook</u> page that Rashed Al-Kindi lost his wife, his four daughters, and his only son, as well as his van (his livelihood) and his modest home, all because of an arms depot explosion that affected the neighboring Sarf area along the Hatarsh road.

Another family that had rented an apartment nearby the night of the incident was killed entirely. Their exact number is unknown because they had just moved in, but it's believed they were from the Al-Haima region. Among the victims was also the



Al-Mahweeti family: the first wife, Ameera, and her children (Hanan, Hadeel, Majdi, Mehran, and Ahmed) were killed, as well as the second wife and her two children (an 11-month-old boy and a two-year-old boy). The two families lived in adjacent houses and both perished in the blast.

A fourth family, named Al-Wasabi, consisting of a grandmother, a father, two wives, and three children, died beneath the rubble. Two shopkeepers near the explosion site were also killed: one named Mutahar from Al-Mahweet and the other known as "Al-Azraq." According to an eyewitness, both men's remains were collected as scattered body parts.

A relative of several victim families said he was prevented from reaching the area due to newly established military checkpoints. Four of his relatives were injured. To his knowledge, "at least 19 people died in the blast, some pulled from beneath the rubble. One child died on Friday from his injuries." He estimated that the number of wounded could be between 60 and 80, according to <u>Al-Masdar Online</u>.

Activist Ahmed Al-Ashwal <u>reported</u> that about three entire families were transported to the Republican Hospital and the Police Hospital, confirming that many of the wounded remain unaccounted for. He added that the Republican Hospital had issued a statement in the morning mentioning an airstrike and the intention of the hospital director to visit the victims, but this post was deleted after it was discovered the incident was not an airstrike.



Screenshots from a video showing the bodies and remains of Rashid Al-Kindi's children, who were killed in the explosion.



After the Explosion: Scenes That Speak for Themselves

After the explosion, the images become a silent testimony, telling the story that words cannot fully express. Here, the images need no commentary, and the testimonies require little explanation. The destruction alone fills the place, narrating the moment after which life was never the same.

According to estimates by a local resident who spoke to <u>Al-Masdar Online</u>, the explosions and falling missiles destroyed between 20 and 30 vehicles, either partially or completely. Around 100 houses and 8 commercial shops suffered varying degrees of damage.

The available footage <u>shows</u> a stark contrast between the state of the area before and after the devastating explosion. On the left side of the visual comparison, the neighborhood appears in a clear aerial image, with neatly aligned buildings, welldefined streets, and a sense of calm daily life marked by order and stability. Homes stood solidly in their places with no signs of impending chaos or destruction. In stark contrast, the images on the right reveal the vast scale of <u>destruction</u> left by the arms depot explosion. Residential buildings and other structures were reduced to piles of scattered rubble, with the original landmarks of the area completely erased under the overwhelming force of the blast.



The extensive damage to Rashed Al-Kindi's <u>house</u> is clearly visible: the walls have completely collapsed, roofs have caved in, and concrete debris is scattered in every direction. The wreckage piles up, and among the physical remnants are torn personal belongings, shattered furniture, and other items that instantly lost their value and function in the moment of the blast.





Screenshots from a video show the destruction of Al-Kindi's home and grocery store

Even homes farther from the explosion's epicenter did not escape damage, with <u>shattered</u> windows and scattered <u>furniture</u> caused by the shockwave. The explosive force was enough to tear out even firmly anchored windows, highlighting the extraordinary strength of the blast.



Image shows damage to two houses as a result of the explosion



The explosion site was a fenced yard containing a hangar built with lightweight brick walls and covered with a thin metal roof, along with an underground basement. This setup created confined and semi-confined spaces, known to amplify the effects of blast waves due to multiple reflections. This significant amplification of the blast's effects, due to the structural configuration of the storage area, aligns with findings by <u>Silva</u> et al. (2021), who concluded through numerical analysis that "confined spaces (such as rooms, hallways, or urban canyons) significantly increase the destructive potential of blast waves."

Using the Kingery-Bulmash <u>blast parameter calculator</u> and assuming an explosive charge equivalent to 1,000 kilograms of TNT, the calculated overpressure at a distance of 20 meters is approximately 221 kPa, with a reflected overpressure of about 1,329 kPa. At a distance of 60 meters, these values decrease to 8.2 kPa (incident overpressure) and 49.2 kPa (reflected overpressure), respectively. This explains why the most severe structural damage and injuries occurred within a radius of 20-30 meters from the explosion site. Beyond that range, the overpressure remains strong enough to shatter windows and cause minor structural damage, especially in older or poorly built homes.

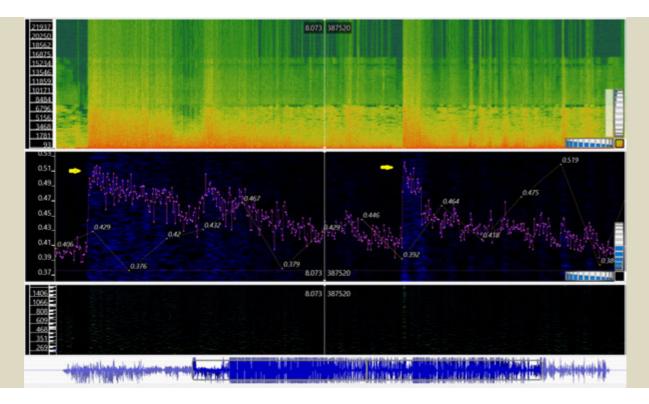


Evidence and Analysis: An In-depth Reading of the Explosion's Fingerprints

Amid the echo of the blast and its devastating effects, field evidence converges to reveal a clear picture of the magnitude of destruction and its circumstances. Satellite imagery, field testimonies, and visual and audio recordings reveal the incident's details through purely objective criteria.

Spectral Analysis

The results of the spectral analysis-which is based on comparing with military explosion patterns rather than direct laboratory testing-of the audio clip associated with the explosion reveal several indicators that support the conclusion that the blast resulted from a high-energy military explosive material, rather than conventional fuels or accidental combustion.



The spectral analysis of the explosion sound reveals the signature of military-grade munitions



The most striking feature in the upper part of the image is the wide spectral spread of the sound energy, which appears clearly across the entire frequency range, from low frequencies (93 Hz) to very high frequencies (above 20,000 Hz). This sharp and rapid energy spread is a distinctive sonic <u>fingerprint</u> of high-energy detonations, which is almost impossible to replicate with slow explosions or conventional fires. The sharp peak at the beginning of the clip–seen in the lower graph as a sudden pressure wave followed by a rapid return to low energy levels–indicates a powerful and immediate shockwave. This pattern perfectly matches the behavior of military explosives like TNT or RDX/HMX compounds, which produce a very short-duration, extremely intense shockwave because of their high detonation velocity and nearinstantaneous energy release. This differs from explosions involving ammonium nitrate or other slower oxidizing materials, which usually generate a less intense initial shockwave with a longer temporal tail–meaning the sound intensity remains high for a longer period before returning to normal, due to the slower chemical reaction and longer energy release.

According to analytical work by <u>Eric Salomons (2024)</u>, the sound spectrum and waveform of high-energy explosions—such as those involving military explosives—display distinctive characteristics (like high-amplitude shock fronts and nonlinear expansion) that help differentiate between accidental fires and deliberate munitions detonations.

Moreover, the absence of recurring oscillations or secondary peaks after the main blast suggests there was no dense dispersal of metal fragments, which aligns with the nature of the depot, built from lightweight brick walls and a thin metal roof– structures that allow energy to escape quickly. <u>Gary S. Settles (2006)</u> demonstrated that "strong air shockwaves traveling at Mach 2 (680 m/s) produce overpressure peaks of several atmospheres, causing severe damage to structures and biological tissues. Reflected shockwaves in confined spaces can amplify these destructive effects."

The spectral analysis reveals a sudden and sharp frequency shift at the moment of the explosion, with the shockwave waveform retained for a short time before quickly dropping, indicating a primary explosion rather than a sequential munitions detonation—supporting the likelihood of a unified warhead explosion.

It's worth noting that the recorded sonic fingerprint of the explosion-with an extremely rapid initial overpressure (positive shock front), an exponential decay phase, and a broad frequency spectrum spanning from infrasonic to high-frequency components-perfectly matches the acoustic properties described in the U.S. Department of Defense's acoustic fingerprinting <u>methodology</u> (standard 806-03). This provides additional scientific context for interpreting the audio evidence and supports the conclusion that the incident involved high-energy military munitions rather than low-energy industrial sources.



Visual Indicators

The first images and footage of the explosion present a vivid visual scene, reflecting highly violent reactions and intense color emissions that capture the moment in sharp detail.



Screenshots from three different angles show a violent explosion with a strong fiery flash and thick white/gray smoke cloud, accompanied by intense dust agitation

The visible colors—a mix of bright yellow and white with orange and red edges indicate the combustion of <u>high explosion</u>, thermally intense materials, such as packed military explosives (TNT, RDX, or similar compounds). The type of explosive material appears to be consistent with conventional high-explosive <u>munitions</u>, possibly including a short-range ballistic missile warhead. These warheads typically have unarmed fusing systems, but in some cases, the fuse or sensitive components can react to heat or electrical faults, triggering direct detonation without missile launch.

The absence of thick black or dark gray smoke in the initial moment suggests there were no petroleum-based or chemical rocket fuels involved, supporting the idea of a solid munitions explosion. While the possibility of rocket fuel combustion cannot be entirely ruled out, it's considered low to moderate, unless it was part of a warhead or stored propulsion unit with other explosive components.



Ballistic missile warheads usually contain compounds like HMX (Octogen) or RDX (Cyclonite), which are extremely sensitive and detonate with propagation <u>speeds</u> exceeding 1,000 m/s, producing extremely high heat and intense flame density with a sharp acoustic signature and intense white-orange fireball–exactly as seen in the attached video, unlike ammonium nitrate explosions, which produce brown or gray smoke clouds and do not create such fireball shapes.



Screenshots highlight the smoke plume before and after the explosion

The images clearly show thick white smoke rising just before the blast, possibly indicating the start of a thermal leak or gradual ignition of propellant materials or primary charges within the warhead. Ballistic missile warheads usually contain highly explosive charges like TNT, HMX, or RDX, which can undergo a "deflagration to detonation transition (DDT)" if gradually heated, especially in poorly ventilated storage environments.

Some visual indicators (like the mushroom cloud and white/gray color) may be similar to ammonium nitrate explosions, but these alone are insufficient for conclusive differentiation, especially if the acoustic spectrum does not match the ammonium nitrate pattern.

It's important to note that these estimates are based on scientific visual and acoustic analysis of the available data and images and do not replace direct field measurements conducted by specialized investigation teams.



Rejecting the External Attack Hypothesis: A Clarified Context

The rejection of an external attack hypothesis complements the rest of the evidence supporting the occurrence of an internal reaction, showing this rejection not as an isolated claim but as an element that enhances understanding of the incident sequence and associated responsibilities. In light of all technical, visual, and acoustic indicators, the hypothesis of an external attack is unsupported by any objective evidence, as there is nothing linking the blast to an aerial or missile strike in form, behavior, or timing. Instead, all available data consistently points to an internal explosion caused by an uncontrolled reaction within the depot, likely involving inadequately secured explosive materials or munitions.



Post-Explosion: Security Clampdown and Heavy Silence

In the immediate aftermath of the explosion, the Houthi group enforced a stringent security cordon, restricting access to the incident site and refraining from issuing any official statements to clarify the circumstances. The silence surrounding the event was as pervasive as the destruction itself, with details remaining confined within walls shrouded by security and media blackout.

The American Center for Justice (ACJ) <u>documented</u> the imposition of a strict security perimeter by Houthi forces around the explosion site, extending from the Al-Malikah area in Bani Hashish District to Zayed Hospital. The ACJ confirmed that access to the area was denied to media outlets and humanitarian relief teams.

The center observed the deployment of armed personnel from the Houthi security and intelligence apparatus, arriving from the Sarf military camp. These forces were reinforced with additional units from the Military Engineering College to secure the area. This was <u>corroborated</u> by reports from Al-Masdar Online, which noted that the group established military checkpoints at the entrances of Sarf and its side streets, preventing relatives of the victims from accessing the area. Activist Ahmed Al-Ashwal <u>reported</u> that the area was completely isolated with a security fence, and individuals entering or exiting were subjected to searches following the explosion.



Coordinated Denial and Doubt Campaign

Analysis of comments-conducted via artificial intelligence-revealed a coordinated attack by accounts believed to be affiliated with electronic propaganda networks. Many of these accounts aimed to cast <u>doubt</u> on the reality of the incident or downplay its significance. Several attempts were made to deny the occurrence of the explosion altogether, with some commenters asserting that "this video is old" or "we didn't hear any explosion." Others claimed that the event resulted from external aerial bombardment, whether by coalition aircraft or Israeli or American planes, in an effort to divert attention from the true cause of the explosion.

Comments frequently included phrases like "this is Saudi bombing from the war days" or "this is clearly an airstrike," with some alleging that the circulated footage pertained to previous events unrelated to the recent incident. Others attempted to distract from the incident by claiming that the videos were "fabricated," or that the explosion was due to a "plastic factory," "gas station," "gas cylinder," or "tire explosion," even suggesting "these are clouds, you fools," or "missiles headed to the sea," or "an electrical short circuit," all aiming to sow doubt about the credibility of the circulating news.

Additionally, there was a wave of comments <u>attacking</u> those who shared any details about the incident, accusing them of spreading <u>rumors</u> or exaggerating. Attempts were made to redirect the discussion to other issues, such as focusing on events in Gaza or accusing media outlets of inflating matters or falsifying facts. Some comments even mocked the victims or justified the incident, suggesting that storing weapons among residential neighborhoods is normal or unsurprising given the current circumstances.

An escalation in personal attacks was noted, characterized by direct accusations and overt betrayal, with some commenters labeling those discussing the incident or sharing its details as "mercenaries," "traitors," "agents," or "Zionists." These attacks extended beyond questioning narratives or denying the incident, encompassing personal insults and belittling of the affected individuals or those seeking to uncover the truth. Comments accused those demanding accountability or condemning the storage of weapons in residential areas of being "dogs" or even "hypocrites," aiming to silence critical voices and deter serious discussions about the causes of the disaster. Some used mocking and sarcastic language toward critics of the Houthi group, revealing organized efforts to tarnish the image of dissenters and demonize them instead of addressing the core issue.

This organized campaign of denial and skepticism, alongside attempts to justify the incident or attribute it to external forces, reflected a clear desire to cover up the catastrophe and divert attention from its real causes, amid continued official media blackout regarding the incident's details.



Legal Accountability: Who Bears Responsibility for the Destruction?

At the heart of this explosion, questions extend beyond how it occurred to encompass the extent of responsibility for storing weapons and ammunition within a densely populated residential area. Here, the facts of the explosion intersect with provisions of international law that impose clear obligations to protect civilians, bringing criminal responsibility to the forefront as an undeniable reality that cannot be overlooked or dismissed over time.

The incident of the weapons depot explosion in a densely populated residential neighborhood in Sana'a on May 22, 2025, resulting in the death and injury of over 150 civilians, constitutes a serious violation of international humanitarian law, necessitating clear criminal accountability. International humanitarian law obligates parties involved in armed conflicts, whether international or non-international, to respect the principles of distinction and proportionality and to prevent harm to civilian populations.

According to international criminal law and human rights expert Moatasem Al-Kilani, speaking to SAM Organization, the Houthi group, as a non-governmental party in a non-international armed conflict, is subject to the provisions of international humanitarian law. This includes key provisions such as Article 13 of Additional Protocol II to the Geneva Conventions (1977), which mandates the protection of civilian populations from the dangers of military operations and prohibits targeting them. It also forbids acts or threats primarily aimed at spreading terror among civilians.

Furthermore, Article 58 of Additional Protocol I obligates parties to the conflict to take all feasible precautions to protect civilians. These precautions include avoiding placing military objectives within or near densely populated civilian areas and relocating such objectives away from populated areas. In this legal context, international law, specifically Article 8 of the Rome Statute of the International Criminal Court (1998), considers the use of civilians as human shields or the storage of weapons and explosives among them in a manner that endangers them as war crimes, according to Al-Kilani.

Al-Kilani points out that the group's storage of weapons and explosives in populated civilian areas constitutes a blatant violation of the principle of distinction between military and civilian targets, directly holding them responsible for the damages and casualties resulting from such storage. He also notes the group's failure to take any preventive measures to protect civilians, such as efforts to relocate explosive materials to safe areas away from civilians, representing a breach of their legal obligations as a non-state armed party. Al-Kilani highlights that imposing a media blackout and preventing documentation of the incident further reinforces the suspicion of criminal responsibility.

Al-Kilani adds: Based on the above, the Houthi group bears legal responsibility for the civilian deaths and injuries resulting from this explosion, and this act can be considered a war crime under the Rome Statute. It also represents a grave violation of international humanitarian law that necessitates accountability.



Beyond the Numbers: A Final Reflection on the Explosion Scene

The incident of the weapons depot explosion in the Sarf neighborhood of Sana'a underscores the grave danger posed by the continued practice of storing weapons within populated residential areas, directly threatening the lives and property of civilians. The evidence and analyses presented in this report demonstrate that such practices constitute a blatant violation of the principles of distinction and the protection of civilians during armed conflicts.

The incident highlights the extent of suffering endured by civilians amid armed conflicts, as their neighborhoods are transformed into weapons depots and hazardous zones without regard for their lives or safety. This occurs as armed parties persist in disregarding the rules of international humanitarian law, converting residential areas into military targets, thereby exacerbating civilian vulnerability and perpetuating the cycle of violence.

In light of the findings of this report, there remains an urgent need for serious action to protect civilians and put an end to these dangerous practices. The responsibility of the international community, humanitarian organizations, and de facto authorities extends beyond mere condemnation to ensuring genuine safety for those caught in the heart of the explosion and working to restore the fundamental right of civilians to live in safety and dignity, free from the fear of another explosion that could threaten their lives at any moment.



Recommendations

This report calls upon the international community to adopt effective measures to investigate the explosion incident and accurately determine responsibilities, ensuring accountability for those involved in accordance with international humanitarian law. It is essential to work towards forming an international investigative committee or an independent fact-finding mission capable of accessing and documenting field evidence to guarantee justice and prevent impunity.

The report also urges the de facto authorities in Sana'a to take immediate and transparent steps to relocate weapons and ammunition from populated residential areas to safe locations away from civilians and to cease any practices that endanger residents' lives.

Additionally, the report calls on United Nations agencies and human rights organizations to comprehensively and continuously document all incidents of explosions in civilian areas, thereby strengthening the database on these violations and paving the way for effective legal accountability. Finally, the report emphasizes the importance of providing psychological, social, and material support to the victims and their families to enhance their ability to recover and overcome the effects of this disaster.



Disclaimer:

All the information and estimates provided in this report are based on witness testimonies, available data, and the technical and visual analyses conducted. However, these findings remain within the scope of approximate estimations and are not absolute facts. The nature of events that occurred in a tense security context and under difficult field conditions may affect the accuracy of some of the figures and details included, which calls for always treating this data as an entry point to understanding the scale and repercussions of the disaster, without considering it as final or definitive results. In the end, the purpose of this report is to shed light on the incident's facts as far as the available evidence allows and to open the door for further independent research and documentation in the future.





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