Article36

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Report on a workshop examining military policies and practices on the use of explosive weapons in populated areas

2-3 May 2018

The use of explosive weapons in populated areas has been identified as a key issue on the protection of civilians agenda by states and organisations over recent years. Operational policies and procedures provide guidance for armed forces including over the choice of weapons and how weapons can be used. Such policies and procedures to assess, reduce, and mitigate civilian harm are an important mechanism for ensuring implementation of international humanitarian law (IHL). It is these military policies and procedures, applied in the context of weapon choices, that are the central focus of this report.

Article 36 and CIVIC convened a workshop on 2-3 May 2018 to gather military and civilian perspectives, and to identify, share and discuss military policies and procedures relevant to the use of explosive weapons in populated areas.[1] This paper summarizes some of the key presentations and discussions from the workshop. We do not seek to suggest that all participants were in agreement on all points, but our intent is to share key considerations raised by participants and to note both the potential, and the challenges, in implementing some of the policies and tools that were discussed.

Following the structure of the workshop, this report summarises:

I. Technical characteristics of weapons and their effects on civilians
   x Technical characteristics of explosive weapons
   x Impact on civilians and infrastructure
   x Policies, tools and procedures relevant to the use of explosive weapons
II. Identifying operational good practices
III. Challenges and recommendations
IV. Conclusion

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Workshop participants came from different backgrounds and the workshop showed again the potential for cross-sectoral dialogue to enable critical and constructive thinking about how civilian harm might be mitigated. Whilst participants diverged on questions of which stronger procedures or policies might be required in all situations, there was broad agreement on the technical questions of how weapon choices relate to the potential for civilian harm.

I. TECHNICAL CHARACTERISTICS OF WEAPONS AND THEIR EFFECTS ON CIVILIANS

The first session looked at technical characteristics of various types of explosive weapons and munitions, including air-dropped bombs, artillery, mortars, and rockets, and the direct and reverberating effects of their use in populated areas.

In general terms, it was noted that armed conflict is increasingly taking place in populated areas due to urbanization and strategic considerations for some parties to armed conflict. This means that the complexity of conflict is compounded by the intermingling of

combatants and military objectives with civilians and civilian objects (whether intentional, unintentional or forced). It was noted that explosive weapon systems designed for use in open battlefields are now being used against military objectives located in populated areas with severe consequences for civilians.

Technical characteristics of explosive weapons

Explosive weapons function by projecting blast, heat, and fragmentation around the point of detonation. Primary explosive weapon effects originate directly from the munition itself; secondary effects stem from mobilisation of the immediate environment (including debris from glass from damaged buildings); and tertiary and reverberating effects result from damage to infrastructure and services (such as impairment water or power supplies which can have severe, long-term effects on people distant from the actual blast).

Whilst the primary effects are design-specific, they are complicated and multiplied by the specificities of the urban environment. Although buildings and barriers in populated areas provide a degree of shelter against fragmentation, urban areas can also produce a channeling of blast effects, **enhancing those effects** in a way that does not happen in more open areas. In populated areas, civilians people and objects, and key infrastructure nodes, are more densely concentrated. Particularly in urban areas essential services are interconnected and interdependent and can often serve a large population.

Wide area effects from explosive weapons tend to result from three main characteristics, either individually or in combination:

x   A substantial blast and fragmentation radius resulting from a large explosive content, for example aircraft bombs with extensive blast and fragmentation range;
x   Inaccuracy of delivery, meaning that the weapon may land anywhere within a wide area i.e. unguided indirect fire weapons such as artillery and mortars; and
x   Use of multiple firings or multiple warheads, which are sometimes designed to spread across an area, such as multi-barrel rocket launchers.

These characteristics can produce a pattern of physical effects that extends beyond or affects the area around a specific target.

Putting improvised explosive devices (IED) aside, in recent conflicts some of the most common types of explosive weapon systems causing harm to civilians and damage to civilian infrastructure are multi-barrel rocket launchers, unguided medium and heavy mortars, unguided artillery guns, tank guns, and large radius aircraft bombs. This is often due to the wide impact area of these weapon systems, which when used in populated areas can result in the effects of the weapon extending beyond or occurring around the intended target.

Many explosive weapons were conceived as 'area effect weapons' designed to spread the munitions' effects over a large area in order to achieve a suppressive effect on an enemy. Such systems were intended for use on open battlefields, but present a high risk of harm when used in towns, cities and other populated areas.

Their characteristics mean that in order to effectively destroy a specific target, for example a fortified building, multiple munitions need to be fired in order to have a sufficient likelihood of directly hitting that target. There is, however, no guarantee that the target will be hit by the munitions fired. There is a danger that an emphasis on achieving the desired effect on the target itself, comes at the expense of considering the effects being exerted on the surrounding population.

The characteristics of 'accuracy' (striking close to a target) and 'precision' (striking the same place consistently) differs substantially from one system to another. In this paper, we tend to use the term 'accuracy' as a catch-all term for these combined characteristics.

Unguided **indirect fire weapons** are less accurate than direct fire, and therefore present a greater risk to civilians when used in populated areas. Indirect fire weapons are generally surface-to-surface weapons such as artillery and mortars, that project explosive munitions in an arc towards a target at a distance. **Direct fire weapons** are those that fire munitions on a flatter trajectory towards targets that can be seen directly by the operator.

As an example, artillery rockets are an indirect fire weapon and are neither accurate or precise having been developed initially as an area weapon. At a distance of 19 km from a target, a 122mm Grad rocket system might be expected to land just 40% of rockets fired within a 315m by 560m ellipse. This means that 60% of rockets fired can be expected to land outside that area. A full salvo of 40 rockets from this multi-barrel system might spread detonations across an area over a kilometer in width and over 600m in range. In an urban setting, use of such a weapon would put a large number of civilians at grave risk, as well as causing extensive damage to civilian property, buildings and infrastructure.

The imprecision of the Grad multiple launch rocket system, or dispersion of the rockets in technical terms, is dependent upon several factors. These include the firing distance between the system and the target, positioning of the rocket launcher, the suspension and tyre pressure of the launcher, weather conditions, topography of the target area, and the temperature, consistency and level of degradation of the rocket propellant, as well as slight differences in weight from one rocket to another. These technical differences also vary from launcher to launcher or artillery cannon to cannon as well.

The **accuracy of a weapon system can be affected by several key factors** including: the weapon design, the weapon's alignment and sighting, the level of wear and tear, the munitions management process, the ability to incorporate meteorological data into firing calculations, and operator training. Inadequate training of the firing crew in ballistics and the use of firing tables presents further challenges to those inherent in the weapon and the operating environment.

Some of these factors can be adjusted and addressed to reduce area effects. There are however, limits to how such adjustments can mitigate the scale of area effects presented by certain types of weapons, particularly in urban settings. When explosive weapons with wide area effects are used in populated areas, against most specific targets, it can be assumed that they will exert their effects significantly on the population around the intended object of attack.

Modern **precision guided munitions** (PGM) can achieve a circular error probable (CEP) of less than 2m. CEP typically expresses the radius of a circle within which 50% of munition firings can be expected to land when aimed at the same point.

Guided air bombs and tank guns can be very accurate and precise. Accuracy, however, does not limit area effects that result from a high explosive yield. When the amount of high explosive inside a munition is in the tens of kilos, even if the target was accurately hit on first attempt, the blast and fragmentation effects, as well as the secondary fragments, may easily extend beyond a specific target. Most militaries do not have PGMs and those that do mainly have missiles and air-dropped bombs with large explosive yields.

In the absence of access to precision-guided munitions, mortar and artillery projectiles continue to be brought closer to the intended target by means of **observation and correction**. This means that it is expected that the first projectiles fired will fail effectively to strike the target due to the inaccuracy of the munition, and further fires will be adjusted based on observation of where the initial firings land. This is highly problematic in urban settings given that some of the munitions are expected to land wide of the target and multiple firings must be used in order to get closer to that target. This process is a product of difficulties in aiming the munitions effectively and the subsequent firings are all also subject to the variations represented by the circular error probable of the weapon/munitions combination.

Militaries typically know the primary effects of their munitions and have weaponeering measures to gain some control over these, but there is generally less awareness of the effects that are specific to built-up, urban areas, or of the long-term, reverberating effects.

Whilst there are mechanisms for controlling or limiting weapon effects, operational conditions including the tempo of operations, will often limit both the range of weapon alternatives available and the amount of additional control that can be exerted given the baseline characteristics of a given weapon.

Impact on civilians and infrastructure

The effects of explosive weapons on civilians can be classified as direct and indirect. **Direct effects** include the immediate physical result of the attack. These can include death, injury (physical or mental), and damage or destruction of civilian objects (including dual use objects) as a result of the blast and fragmentation caused by the detonation.

Injuries caused by explosive weapons can be pressure related; fragments related; blast wind related; heat and smoke related; and chemical related. Studies are increasingly being conducted into the differentiated impact of explosive force on **children** compared to adults, as well as on **mental injury** caused by exposure to explosive force. The latter may not be immediately apparent and victims may not present physical symptoms until a later stage.

Indirect or reverberating effects are not a direct, physical result of the attack, but are nevertheless a product thereof. Reverberating effects are usually (but not always) more remote in time and space from the point of impact. They can ultimately present in a variety of

forms, ranging across death, injury, disease, mental trauma, damage to civilian objects, displacement, lack of access to education, health care or agricultural land, loss of livelihoods, and unemployment.

Reverberating effects can be visualized by thinking of an attack damaging a water supply facility. This can mean no water to part of the population. Lack of water could also affect a power plant, resulting in power shortages. Such power shortages can, in turn, affect hospitals in the area, which may not have alternative sources of power and may be unable to treat injuries or diseases causing death. Water shortage to the population may also lead to disease outbreaks. When essential services are disrupted or cease to function at all, civilians may be forced to leave.

This domino effect is due to the fact that essential services, especially in urban areas, are interconnected and interdependent. The reverberating effects of attacks using explosive weapons are multiplied in urban areas because the dependency of civilians on such services is greater.

When critical infrastructure or essential services are affected, the quality of life for the civilian population is significantly reduced. This, combined with uncertainty and lack of security, leads to displacement, which may in turn lead to increased mortality. Protracted armed conflicts and/or repeated attacks in an area create a cumulative impact that may downgrade the quality of urban services and infrastructure, sometimes beyond repair.

Thus, the initial effect of the use of explosive weapons in populated areas can trigger humanitarian consequences that affect a much larger part of the population than those in the immediate vicinity of the impact zone.

Under the law, parties to an armed conflict must take into account the reasonably foreseeable direct and reverberating effects of explosive weapons before launching an attack, in order to determine whether that attack would be proportionate, as well as in order to take all feasible measures to avoid or minimize civilian harm from the attack.

Commanders acting in good faith must seek and use information reasonably available to them. This implies a positive duty of the commander to collect information, insofar as feasible. What is reasonably foreseeable should be informed by past practice, lessons learned, and the experience of armed forces.

In the case of reverberating effects, increased understanding of the interconnectedness and interdependency of urban services and infrastructure suggests that the domino effects on civilians caused by the damage of one or more components of an essential service are in vast majority of circumstances reasonably foreseeable.

Not all reverberating effects of the use of explosive weapons in populated areas will qualify as incidental harm under international humanitarian law (IHL), which takes into account loss of life, injury to civilians, damage to civilian objects or a combination thereof. As a result, not all of the effects must necessarily to be taken into account in the proportionality assessment under the law.

However, parties to armed conflict have a general duty to take constant care to protect civilians and civilian objects in the conduct of military operations. The principle of protection of civilians dictates that all reasonably foreseeable direct and reverberating effects are considered when deciding upon, planning, and executing an attack.

Policies, tools and procedures relevant to the use of explosive weapons

Adherence to IHL is essential to reduce civilian harm. But how the law is translated into trainings, policy, and guidance, including decisions on choice of weapons, is critical from an operational lens to reduce impact of war on civilians.

A common recognition in military policies and procedures related to targeting and weapons choice is the direct relationship between the use of weapons, the scale of their area effects, and the risk to civilians and objects in the surroundings.[2] Some of those policies, practices are discussed here.

For purposes of targeting, the **collateral damage estimation (CDE) methodology**, encompasses methods, techniques and processes to estimate the risk of harm to civilians and mitigate that risk. This is also used to protect friendly forces from harm. This methodology can factor in population density data in the target area, and draw on the estimated area effects of specific weapon types as a central and direct technical factor that influences the likelihood of civilian harm.

There are limitations to using CDE methodologies as not all militaries can employ such procedures and those that do don't always evaluate, subsequently, the actual impact of weapon use against the estimation. Such processes also acknowledge the challenges in conducting these procedures for certain types of explosive weapon systems beyond a certain level because their wide area effects mean that the risk of civilian harm cannot be mitigated further. Such methodologies are used primarily for planned attacks, rather than dynamic targeting (targets of opportunity).

Battle damage assessments (BDA) after a strike are also being used to analyse weapons' impacts and to make adjustments to weapon choices and to the selection of targets for particular area and terrain.

Elevating the level of command authority required for the use of particular weapons in certain contexts is another potential mechanism for controlling potential harm. By ensuring that a more senior commander needs to authorise the use of certain weapons, an additional layer of scrutiny can be put in place to ensure that the potential impact on civilians and civilian objects has been fully assessed and all possibilities to avoid that harm have been considered.

More stringent **rules of engagement** can restrict or avoid the use of certain explosive weapons in populated areas for specific operational contexts. For example, for a specific operation, a prohibition might be put in place against use of unobserved indirect fire into a populated area, as is provided as an example in the 2009 San Remo Handbook on Rules of Engagement.

These difference procedures are important building blocks and provide opportunities to reduce civilian harm. The articulation of such rules and processes is often driven by militaries and with political support emphasizing protection of civilians as critical to the mission.

For example, the African Union Mission in Somalia (AMISOM) responded to rising levels of civilian casualties by adopting an indirect fire policy that limited the use of indirect fire weapons such as artillery in populated areas and additional tools to professionalize the force. Similarly, in Afghanistan, NATO's International Security Assistance Force (ISAF) developed and implemented tactical directives restricting the use of air-to-ground and indirect fire weapons in certain situations. Both examples reflect a both political and military emphasis to protect civilians and recognition of the link between use of explosive weapons with wide area effects and risk of civilian harm.[3]

There are additional measures and tools to mitigating civilian harm that have been used by some militaries. **Civilian casualty tracking** mechanisms have been successfully employed by some militaries to better understand the immediate impact of conflict on civilians, identify root causes, and undertake remedial efforts through adjustment of tactics, guidance, and trainings to reduce harm. **No strike policies** have also been used to avoid harm to civilians by identifying infrastructure, buildings and other entities that should not be attacked. **Tactical patience** has been used to describe restraint in order to seek a better opportunity to engage a target in order to reduce civilian harm has also been used in recent operations. Requiring **positive identification (PID)** of a military target prior to using force in order to ensure distinction is also an important general procedure adopted by some militaries.

Reviewing, strengthening, and sharing these policies and procedures should be a central component of collective efforts to reduce civilian harm from the use of explosive weapons.

II. IDENTIFYING OPERATIONAL GOOD PRACTICES

In addition to presentations, the workshop participants worked through scenarios to facilitate thinking on operational planning, the choice of weapons, and consideration of the impact on civilians and infrastructure in practice. The scenarios included: a large-scale high intensity conventional operation against a near peer competitor; a large-scale operation where the civilian population was held hostage in an urban area; and an operation to clear enemy forces from a village. The scenarios were intended to function as a tool for dialogue around the issues of weapon characteristics, understanding contexts of use and decision-making at different operational levels. The goal for this session was to identify operational tools and practices on choice of weapons to minimize civilian harm in each scenario.

The section below provides some key observations from the discussion of these scenarios in the following areas:

x Planning
x Policy guidance
x Intelligence and information-gathering
x Training
x Tools
x Mitigation measures

Planning

Participants noted that political and strategic guidance of a military operation sets the parameters for the mission. They highlighted the need to have a clear end-state for the mission that is both achievable within the framework of IHL and in line with strategic and political guidance from the government. The planning phase should involve integrating legal, policy, and humanitarian considerations from a variety of advisors to provide the foundation for effective civilian protection.

Participants discussed the different levels of authority required for decisions over the use of force, and escalation of authority to approve the use of force, or certain weapons, in particular circumstances.

Participants noted that well-defined targeting processes during planning and execution stages provide strategic, operational and tactical flexibility for the commander on how, where, and when to engage a target. This phase also needs to incorporate preparedness to respond for civilian displacement and ensure shelter, medical assistance, food, and water.

Policy guidance

There was recognition that command guidance can and often does place additional restrictions on use of certain types of weapons. Rules limiting the use of indirect fire weapons in populated areas, which participants noted is not required by law, would have to be explicitly stated in guidance and soldiers would need to be equipped and trained to use direct fire weapons or low collateral munitions.

Some participants expressed preference for the use of direct fire weapons at close range in urban areas, over indirect fire weapons given the latter's higher likelihood of civilian harm. The use of small arms fire, smaller mortars, and grenades was preferred by some participants where it was considered these could achieve the military effects being sought.

Overall, there was a general recognition that the scale of a weapon's area effects had a direct bearing on civilian risk in the area where that weapon would be used.

As part of policy guidance, creating no-strike and restricted lists of civilian objects and protected sites—such as religious sites, hospitals, critical infrastructure—was identified as important. Participants did recommend the flexibility to remove some objects on such list upon higher command approval in certain cases for e.g. self-defense, whilst still adhering to legal constraints relating to distinction and proportionality. If such authorization would result in, for example, degradation of a water treatment facility, mitigation plans to provide clean water to civilian population should be prepared.

Intelligence and information gathering

Participants stressed the need to obtain reliable and up to date intelligence on movements of civilians before and during operations in relation to military targets. This pattern of life analysis was considered important in the targeting process.

There was a recognition that information should be requested from different sources and not only on military intelligence reconnaissance and surveillance (ISR) assets. For example, civilian experts such as engineers could advise on structural make-up of buildings and sub-surface electric, water and sewage conduits to assess weapons effects. Consultation with water and sanitation or weapon contamination experts was also recommended.

It was recommended that information is available and updated throughout operations, and not just in planning phase, in order to improve targeting process and weapons choices.

Some raised concern that this creates increased burden on commanders who may not have resources or time to procure such engineering documents of target areas.

Training

Participants highlighted the need to have scenario-based trainings for particular terrain, enemy tactics, and presence of civilians in determining appropriate weapons usage. Armed actors should know type and size of munitions they would use, their blast and fragmentation range or effects, their delivery system, the distance from which weapon was launched, as well as the timing and angle of the attack, and related accuracy characteristics.

Live fire simulation exercises for commanders to directly understand the effects of weapons on a dense population, and in a built-up area in contrast to open de-populated areas were suggested as an important part of training and preparedness.

Computer simulations and virtual reality tools was identified as helpful. Participants discussed the need for extensive trainings on all fire support systems.

Tools

Discussants recommended using the entirety of fire support control measures (FSCM), including forward observers, to facilitate planning and executing rapid engagement of targets with the appropriate weapon. This was seen as safeguarding friendly forces and civilians.

Discussants suggested using CDE methodologies to assess foreseeable impact on civilians and infrastructure and undertaking BDA. It was recognized that CDE cannot be used effectively for all indirect fire platforms and many militaries don't have this tool. Similarly, while BDA are increasingly being applied by some militaries, they don't take into account impact on civilians and civilian objects unless directed by command. It was recommended that BDA can be more effectively used to update the CDE process and improve understanding of forseeable effects during targeting.

The use of civilian casualty tracking cells in order to assess patterns of harm, advise on new tactics, and learn from mistakes was also recommended by some discussants. This tool needs required resources and command support to be effective.

It was noted that the use of some of the tools discussed tends to become more challenging as the tempo of operations increases and as the scenario moves away from pre-planned deliberate targetting to dynamic targetting.

Mitigation measures

Participants discussed the need to have mitigation measures integrated in planning process but also during operations. These included, resources such as engineers, doctors who are prepositioned to deal with death, injury, and loss of critical infrastructure.

Coordination with humanitarian actors before and during operations to mitigate impact on civilians was identified as critical. Planning is important to facilitate safe and voluntary evacuation of civilians whilst also recognising that some civilians will not leave and thus those situations need different mitigation planning.

There was recognition of the need to develop new ways to give effective warnings to civilians so that they have the opportunity to make plans to seek safety. Consideration needs to be given to whether civilians are actually able to leave safely. Some participants noted challenges in evacuating civilian population safely and in creating safe routes, especially where blocking the movement of enemy forces may be considered a military priority.

Many acknowledged that absence of civilians does not mean that all weapons at commander's disposal can be used, as destroying a city has consequences for civilians.

III. CHALLENGES AND RECOMMENDATIONS

All participants recognised that urban warfare will likely remain a reality in many conflict contexts as armed actors embed themselves in cities, sometimes to seek cover amidst civilians. Participants also highlighted challenges in applying current policies, practices, and tools relating to weapons choices in populated areas. Some of the challenges and recommendations from participants include:

x   A recognition of particular concerns regarding explosive weapons with wide area effects (i.e. where effects of the weapon extend beyond or can occur around a specific target.). These concerns relate to civilian deaths, injuries, and damage to civilian objects, the latter of which is enhanced in urban areas due to the interconnectedness of infrastructure serving large numbers of people. Many operational policies and procedures could avoid such effects if implemented effectively.

x   The proportionality rule is important regarding the use of explosive weapons in populated areas as is the prohibition of indiscriminate attacks. Some explosive weapons when used in populated areas can be assumed to be indiscriminate given inherent inaccuracy of the weapons.

x   Militaries will feel pressure to use weapons that they have. States need to equip militaries with the right munitions for mission and terrain.

x   Militaries need training to fight in cities and need tactical alternatives, appropriate weapons, and ISR capabilities, and other forms of gathering information for targeting, for operations in cities.

x   When fighting in coalitions, militaries need common language and approaches to fighting in cities that are interoperable.

x   The choice of tactics and weapons will need to adapt to the pace and tempo of operations, the stage of conflict, and the enemy's tactics.

x   Using unguided indirect fire weapons in populated areas is problematic, carries a high risk to civilians and should be avoided. Some suggested that taking all indirect fires out of use may not be feasible, but the elevated likelihood of civilian harm was broadly recognised.

x   It was noted that there are also risks associated with an assumption that greater precision, in itself, automatically reduces civilian harm. The type of precision weapon that is used, how often it is used within an area, and how information is gathered in targetting processes remains essential in evaluating likely impact.

x   Consideration could be given to an organization dedicated to the study of urban war operations where lessons on equipment and techniques can be collected and shared to inform a range of military forces, and promote understanding of the vulnerabilities specific to urban warfare.

x   There was an acknowledged need to identify good practices that have worked in populated areas to minimize civilian harm and share with other militaries and embed within military.

IV. CONCLUSION

The use of explosive weapons with wide area effects in populated areas produces a pattern of severe harm to civilians. Both the direct and the indirect effects to civilians is amplified when armed conflict takes place in urban areas. As more conflicts are taking places in such contexts, armed actors need to be prepared to learn, adapt, and equip themselves appropriately to fight in populated areas and identify ways to minimize widespread harm.

The discussion in the workshop suggests that there are polices and tools that can result in constraints on choices regarding wide-area effect weapons, improved targeting and better understanding of likely harms, in order to reduce the burden of conflict on the civilian population. There are challenges to the practical application of these tools and policies in all circumstances. However, strengthening dialogue between humanitarian and military perspectives has potential to identify and promote improved practices and so strengthen the protection of civilians.

Annex A:
Relevant articles and reports

Areas of harm: Understanding Explosive Weapons with Wide Area Effects
Article 36 & PAX, October 2016, http://bit.ly/2dGaVLx

Compilation of military policy and practice: Reducing the humanitarian impact of the use of explosive weapons in populated areas, OCHA, October 2017, https://bit.ly/2xaAgXc

Explosive Weapon Effects, GICHD, February 2017, http://bit.ly/2ruUZCC

Explosive weapons in populated areas: humanitarian, legal, technical, and military aspects, ICRC, June 2015, https://bit.ly/2Jk8ZHc

Explosive Weapons in Populated Areas: Technical Considerations Relevant to their Use and Effects, ARES & ICRC, May 2016, http://bit.ly/1PsxPRJ

Indirect Fire: A technical analysis of the employment, accuracy and the effects of indirect fire artillery weapons, ARES & ICRC, February 2017, https://bit.ly/2Hoedl0

International humanitarian law and the challenges of contemporary armed conflicts, ICRC, October 2017, https://bit.ly/2HJjZ3T

Sahr Muhammedally, "Lessons from Mosul: How to Reduce Civilian Harm in Urban Warfare," Just Security, July 2017, https://www.justsecurity.org/43382/lessons-mosul-reduce-civilian-harm-urban-warfare/

Sahr Muhammedally, Minimizing Civilian Harm in Populated Areas: Examination of ISAF and AMISOM Policies and Practices, in International Review of the Red Cross, March 2017 https://bit.ly/2vyGflS

John Spencer, A Soldier's Urban Warfare Wish List for Christmas, Modern War Institute, December 17, 2017, https://mwi.usma.edu/soldiers-urban-warfare-christmas-wish-list/

John Spencer, A Better Approach to Urban Operations: Treat Cities Like Human Bodies, Modern War Institute, September 13, 2017, https://mwi.usma.edu/better-approach-urban-operations-treat-cities-like-human-bodies/

Urban Services During Protracted Armed Conflict, ICRC, October 2015, https://bit.ly/1FSXlAp

Annex B:
Agenda for Workshop on May 2-3, 2018

WEDNESDAY 2 MAY

13.00 Welcome and introductions: Scope and objectives of the workshop - Richard Moyes and Sahr Muhammedally

SESSION 1: SETTING THE SCENE
Objective of Session 1: This session will look at technical characteristics of various types of explosive weapons and munitions – including air-launched bombs, artillery and mortars, rockets, and improvised explosive devices (IEDs). It will consider factors determining the area affected by blast and fragmentation, including fusing, issues around accuracy and precision of delivery and amplification/shielding in built-up environments. This session will also consider the direct impacts of the use of explosive weapons in populated areas (including urban centres) on the health and wellbeing of civilians, as well as indirect, longer-term, 'reverberating effects' from damage to infrastructure including housing and vital public services. This session will look at known military policies and procedure relevant to the use of explosive weapons.

13.15 Protecting civilians: direct and reverberating effects from the use of explosive weapons in populated areas - ICRC

Explosive weapons: characteristics and effects - GICHD

Discussion

14.45 Operational policies, tools, and procedures relevant to explosive weapons in populated areas - Article 36

Discussion

SESSION 2: OPERATIONAL SCENARIOS
Objective of session 2: This session will include the presentation of 3 scenarios followed by a discussion to facilitate thinking on operational planning, choice of weapons and the implications of certain policies and processes in practice. The scenarios are intended to function as a tool for dialogue around the issues of weapon characteristics, understanding contexts of use and decision-making at different operational levels.

16.30 Operational Scenario 1 - CIVIC

THURSDAY 2 MAY

09.30 Operational Scenarios 2 and 3 - CIVIC

SESSION THREE: IDENTIFYING OPERATIONAL GOOD PRACTICES
Session Objective: Based on the above discussions, this session aims at recapping and exchanging views from the operational scenarios on the measures that could be taken to mitigate civilian harm from the use of explosive weapons in populated areas.

11.15 Open discussion on identifying key operational considerations and good practices

12.30 Concluding remarks by Article 36 and CIVIC

Annex C:
Participant List

Ms. Alma Al-Osta – Disarmament and Protection of Civilians Advocacy Manager, Handicap International, Belgium

Ms. Laura Boillot – Programme Manager, Article 36, INEW Coordinator, UK

Col. Adolf Brückler – Military Adviser at the Permanent Mission of Austria in Geneva

Ms. Amanda Brydon – Conflict and Humanitarian Advocacy Advisor, Save the Children, UK

Col. Jim Burke – Director of Engineering, Defence Forces, Ireland

Ms. Anna de Courcy Wheeler – Advisor, Article 36, UK

Lt. Col. Raymond Farrell – Canadian Forces Warfare Centre

Brigadier Lisa Ferris – Director Defence Legal Services, New Zealand Defence Force

Dr. Eirini Giorgou – Arms Unit, International Committee of the Red Cross, Switzerland

Mr. Frank Groome – Disarmament and non-proliferation section, Department of Foreign Affairs and Trade, Ireland

Commander (Navy) Wolfgang Heuer – Desk Officer Humanitarian Arms Control, Federal Ministry of Defence, Germany

Mr. Mark Hiznay – Associate Arms Director, Human Rights Watch, USA

Lt. Col. (Retd) Harry Konings – Netherlands

Ms. Siv Mjaaland – Head of Policy, Norwegian People's Aid, Norway

Mr. Richard Moyes – Managing Director, Article 36, UK

Ms. Sahr Muhammedally – MENA Director, Center for Civilians in Conflict, USA

Lt Col Craig Palmer – Targets Policy, Military Strategic Effects, Ministry of Defence, UK

Mr. Samuel Paunila – Head of Ammunition Operations, Geneva Centre for International Humanitarian Demining (GICHD), Switzerland

Ms. Sandra Rossiter – Natural Disaster Response and Civilian Security Policy, Government of Canada

Colonel (Retd) Thomas Sheperd – Senior Military Advisor, Center for Civilians in Conflict, USA

Major John Spencer – Deputy Director, Modern War Institute, USA

Mr. Gary Toombs – Global Chief Technical Advisor, Humanity and Inclusion, Jordan

Mr. Hugo Van Halder – Project Officer, Humanitarian Disarmament Team, PAX, Netherlands

Lt. Col. Dave Walker - Counter-Proliferation and Arms Control Centre, Ministry of Defence, UK

ACKNOWLEDGMENTS

ABOUT

Article 36

Article 36 is a specialist non-profit organisation, focussed on reducing harm from weapons. We work with civil society partners and governments to develop new policies and legal standards to prevent civilian harm from existing and emerging weapons. Our work is underpinned by rigorous, transparent and independent analysis of how weapons harm civilians, and how such harm can be reduced and prevented. Article 36 is part of the leadership groups for several international disarmament coalitions, including the International Campaign to Abolish Nuclear Weapons (ICAN), which won the 2017 Nobel Peace Prize. Article 36 also provides leadership and expertise for the International Network on Explosive Weapons (INEW), the Campaign to Stop Killer Robots, International Campaign to Ban Landmines (ICBL), and the Cluster Munition Coalition (CMC). For more information about Article 36, please contact:

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Center for Civilians in Conflict (CIVIC)

Our mission is to work with armed actors and civilians in conflict to develop and implement solutions to prevent, mitigate, and respond to civilian harm.

Our work takes us from the homes of civilians in active conflict zones to the halls of power around the world where decisions are made that affect their lives. We document harm to civilians and analyze its causes. We advise parties to a conflict on practical tools for preventing and responding to civilian harm. We advocate for the adoption and implementation of solutions to the problems we identify and specifically encourage military actors to track, investigate, and make amends for the harm they cause. We then offer our technical expertise to implement proposed protection solutions. At the same time, we work with civil society partners and local communities to enable civilians to raise their voices and advocate for their own protection. CIVIC is headquartered in Washington DC, and has offices in New York, Afghanistan, Iraq, Mali, Nigeria, Switzerland, Ukraine, and Yemen.

For more information about CIVIC please contact:

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END NOTES

1   Chatham House rule was observed during the workshop. The rule instructs that "when a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed."

2. See, e.g., OCHA, Compilation of military policy and practice: Reducing the humanitarian impact of the use of explosive weapons in populated areas, October 2017, https://bit.ly/2xaAgXc

3. See, e.g., Sahr Muhammedally, "Minimizing Civilian Harm in Populated Areas: Examination of ISAF and AMISOM Policies and Practices," in International Review of the Red Cross: War in Cities, March 2017 https://bit.ly/2vyGfIS