Briefing Memo

International Regulations on Cluster Munitions

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Introduction

The Convention on Cluster Munitions (hereinafter referred to as the "Oslo Convention"), which in effect calls for the across the board decommissioning of cluster munitions, was adopted in Dublin on May 30, 2008. Since its signing ceremony on December 3, 2008, the number of signatory states has been steadily rising. It is expected that it will be possible to achieve ratification in the near future with the 30 countries necessary to enter the treaty into effect. Japan also concluded the convention in July, and by so doing it resolved to decommission all of the cluster munitions in the possession of the Japan Self-Defense Forces (JSDF).

Conversely, major stockpilers like the United States, Russia, China, and Israel have shown no signs of agreeing to the Oslo Convention as of the present. Yet if these stockpilers do not agree, then there is the possibility that cluster munitions will continue to be used in conflicts in regions around the world in the future. Because of this, there is currently growing interest in moves over how to incorporate such countries into these international regulations in the future. The stockpilers have conventionally viewed the Convention on Certain Conventional Weapons (hereinafter referred to as the "CCW") framework as the sole venue for such negotiations, and have carried out numerous debates centering on meetings of government experts. As a result of this, an additional Draft Protocol on Cluster Munitions was recently created, and is expected to serve as the sixth additional protocol to the CCW. This draft protocol is scheduled to be deliberated at the meeting of signatory states to the CCW that will be held in November of this year.

Just how much leeway is there in terms of the extent to which cluster munitions stockpilers will accept limitations on their own country's use and stockpiling? This issue is a challenge that remains with respect to cluster munitions regulations, and simultaneously serves as a point of contention that can by no means be overlooked when thinking about the future course of the Oslo Convention. Therefore, this briefing memo will take up the Draft Protocol on Cluster Munitions, which addresses these major stockpilers, and will consider its significance and challenges.

1. Inhumane Injuries from Cluster Munitions

Cluster munitions are conventional munitions that are comprised of explosive sub-munitions and a

parent munition in which several of these are housed. After the parent munition has been dropped from an airplane or shot from the surface it discharges and disperses its sub-munitions at a certain height. Each sub-munition is designed to explode upon impact with the target or ground, and their structure causes damage to people and armor in the impact zone by penetration, fragmentation, and their incendiary effect. The military usefulness of cluster munitions has long been evaluated in terms of this capacity to damage a large number of enemy forces at once in this manner.

However, unexploded ordnance that fails to explode after impact continue to pose a threat for a long time after the end of combat. In reality, ordinary residents of conflict regions frequently suffer damage that is harmful or fatal when they come into contact with such unexploded ordnance in various different regions. As a measure to improve this, there have recently been increasing examples of cluster munitions being equipped with self-destruct mechanisms in the aim of making them safer. However, unexploded cluster munitions equipped with self-destruct mechanisms were later found in South Lebanon after large numbers of such munitions had been dropped during the fighting between Israel and Hezbollah in 2006. The outcome of this was to further diminish the position of the faction of countries calling for their partial ban at negotiations over the creation of the Oslo Convention, which had already begun by then.

2. Applying Other Methods of Regulating Weapons to the CCW

The possibility that the aforementioned cluster munitions stockpilers will comply with an across the board ban is extremely low. Therefore, this briefing memo will consider whether a number of other methods that have been adopted in the past can be applied to the CCW on the premise of the continued stockpiling of such munitions.

(1) Protocol III on Incendiary Weapons

The Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III) prohibits carrying out attacks using incendiary weapons against densely populated territories. If the use of cluster munitions against densely populated territories was banned, then this method would seemingly decrease the danger of returning residents suffering damage from unexploded ordnance, and would appear to be useful for cluster munitions regulations. But numerous examples exist in Cambodia and other places where such munitions were used in territories that were not densely populated during fighting, but where damage from unexploded ordnance occurred afterwards due to population migration. Agricultural and livestock areas which are not in and of themselves densely populated territories are also vital means for the residents to earn a living, and as a consequence there are quite a few cases where people have come into contact with unexploded ordnance when they set out to dispose of them on their own. Since unexploded ordnance is semi-permanent, simply restricting attacks to specific territories will not necessarily lead to protecting ordinary residents.

(2) Amended Protocol II on Anti-Personnel Landmines

The Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices (Amended Protocol II) introduced clear standards concerning improving the reliability of ammunitions, and mandates that signatory countries must equip anti-personnel landmines with self-destruct and self-deactivation features. This is one of the methods that the CCW signatory countries are currently considering for cluster munitions. Incidentally, the Protocol on Explosive Remnants of War (Protocol V) which was established in 2003 requests signatory countries to achieve the "greatest reliability" for cluster munitions in their manufacturing, procurement, and transfer processes. However, these are nothing more than nonbinding targets, and do not touch on a single specific measure such as numerical targets or self-destruct mechanisms.

The three types of safety mechanisms below are commonly installed in order to improve the reliability of ammunitions. These are common among both landmines (anti-personnel and anti-tank) and cluster munitions. The first of these is self-destruction which destroys the warhead itself, the second is self-deactivation which destroys part of the fuse within the warhead, and the third is self-neutralization which irreversibly depletes a part of the fuse, such as by discharging the battery (only electronic fuses fall under the category of being "irreversible" in a qualitative and practical sense). Since the second and third methods leave behind the sub-munition itself with the explosives inside and merely disarm them by making the fuse inoperative, it is no simple task to confirm whether it has been disarmed from its external appearance. For cluster munitions, for a time stockpilers were proposing a distinction between so-called "safe" unexploded ordnance and "dangerous" unexploded ordnance, which took into consideration the workings of their safety mechanisms. However, even for "safe" unexploded ordnance there is the risk that the explosives within the sub-munition will cause an explosion due to defects in the mechanisms, and particular attention is paid when disposing of said unexploded ordnance.

As will be seen below, the Draft CCW Protocol on Cluster Munitions incorporates reliability standards similar to those in Revised Protocol II. But the results that will be obtained from this are not necessarily the same for both of these. This is because the utility and nature of the weapons are completely different for landmines and cluster munitions, and therefore the manner in which their safety mechanisms function will also differ.

3. The Draft CCW Protocol on Cluster Munitions

Article 4, Paragraph 2 of the Draft CCW Protocol on Cluster Munitions gives the following reliability standards as an exempt condition from the ban (this paper omits the condition on accuracy in terms of accurately attacking the target).

(a) Installation of self-destruct mechanisms, self-deactivation mechanisms, or self-neutralization mechanisms or two or more detonators, or
(b) Holding the dud rate down to less than 1%

For example, the M85 sub-munitions used by Israel in Lebanon in 2006 fulfill both of the conditions in (a) and (b). The M85 is furnished with a gunpowder-style time delay self-destruct mechanism and self-deactivation function (slider lock) on its mechanical impact fuse. According to Israeli Military Industries (IMI), which was in charge of its development and manufacture, it has a dud rate of 0.06%.

The M80 sub-munitions that the United States stockpiles similarly rely on disarmament via self-destruction and self-deactivation, but their specific means of doing this differ from that of the M85. The M80's fuse is a hybrid fuse that is equipped with a mechanical impact mechanism and an electronic time delay self-destruct mechanism, and it is characterized by the fact that it has a lithium reserve battery that is used exclusively for self-destruction. In other words, since the self-destruct mechanism goes into operation independently through a battery exclusively for this purpose, then it will at the very least disarm by destroying its fuse even if the required safety release fails to explode on impact. The M80's self-destruct mechanism is said to boast reliability of 99.8% (Source: Jane's website).

Incidentally, when the United States Department of Defense announced its new policy regarding cluster munitions in July of last year it set its reliability standard at "a dud rate of less than 1% after the safety release." But because this policy puts self-neutralized sub-munitions in the category of unexploded ordnance, it can be evaluated as setting unprecedentedly strict standards (but if the operation rate of the safety release mechanism is taken into consideration, then it is possible that the dud rate will rise on the whole).

4. Characteristics of Cluster Munitions – Factors for the Non-Operation of Safety Measures

It is not the case that damage from the unexploded ordnance of cluster munitions can be fundamentally resolved through the installation of the right safety mechanisms alone. This is because cluster munitions have characteristics that are much more easily affected by their usage environment compared with landmines, and there are significant variations in the success rates for explosion upon impact. Factors that affect them during usage include how the parent munition is discharged (firing system, altitude, velocity, and angle), the number of sub-munitions, and the configuration of the landing surface (hardness, and the presence of things like snow, mud, trees and structures). In reality, there are numerous cases where the firing pin, safety release mechanism, or the like is damaged or

rendered inoperative by a combination of these factors, thereby resulting in unexploded ordnance. However, there are also styles of self-destruct mechanisms like that on the aforementioned M85 that do not start to operate unless the safety release is turned off. With these, they cannot explode upon impact or self-destruct once the safety release has failed. This is in stark contrast to the fact that anti-personnel landmines equipped with self-destruct mechanisms are almost certain to function properly.

This may be superfluous, but the Oslo Convention approves the stockpiling and use of cluster munitions by signatory countries only when they weigh more than 4 kg apiece and have no more than nine sub-munitions which fulfill the accuracy condition and have been equipped with electronic self-destruct mechanisms and electronic self-neutralization mechanisms. But at least from the perspective of reliability it is thought to be impossible to prevent the generation of a certain number of unexploded ordnance for the same reasons as those mentioned above (there is also the fear that static electricity will cause neutralized unexploded ordnance to explode).

Most of the damage from unexploded ordnance has been caused by the old style of cluster munitions, which were not equipped with even a single safety mechanism. When this is taken into account, the introduction of reliability standards undoubtedly represents a major step forward for stockpilers. But compared with anti-personnel landmines, which are inexpensive and easy to control, cluster munitions are high-tech weapons that require advanced technical prowess. Cluster munitions also have the inherent problem that depending on their design the self-destruct mechanism may not function on its own on some occasions. Even if techniques which appear to be the same are utilized, it must still be said to be much more difficult to obtain more certain and universal ammunition reliability from cluster munitions compared with anti-personnel landmines.

To achieve the goal of improving the reliability of cluster munitions, improving not only the safety mechanisms but also the operation rate for the components that are essential for the munitions to explode on impact is considered to be a more reliable approach. In this sense, using numerical targets like the 1% dud rate together with giving consideration to the operation rate of the ammunition as a whole, including the safety mechanism, is thought to be useful (this is currently being treated as one option for the draft protocol).

Conclusion

In this manner, the current draft protocol approves the use of cluster munitions by stockpilers with certain conditions attached. But even today as the Oslo Convention is getting underway, the CCW signatory countries, especially the major stockpilers, must find a concrete way to express that the CCW framework is useful for regulating conventional weapons. For this reason, the international

agreement formed here must impose true international obligations on stockpilers, rather than for each objective. The hope is that substantive debates will be carried out at the approaching meetings of signatory countries.

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