TECHNOLOGY FOR GLOBAL SECURITY

LAW, TARGETING AND NUCLEAR WEAPONS

TECHNOLOGY FOR GLOBAL SECURITY SPECIAL REPORT

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10/31/19

I. INTRODUCTION

In this essay, Bill Boothby observes: "For all States, there is an obligation to take constant care in nuclear operations to spare civilians and civilian objects. More detailed precautionary rules apply to all States with certain additional rules only applying to States that are party to API and that made no nuclear statement. States adopt numerous measures to disseminate this body of law. International engagement seems to be the best approach for promoting international compliance."

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Acknowledgments: The workshop was funded by the John D. and Catherine T. MacArthur Foundation.

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Summary

The prohibition of the threat or use of force in article 2(4) of the UN Charter applies to nuclear weapons as it does to conventional uses of force. Likewise, an armed attack giving rise to the right to use force in self defence might take the form of a nuclear strike. It is the scale and effects of the nuclear strike that will determine its classification as a use of force and armed attack. The principle of distinction and linked rules of the law of targeting also apply to nuclear operations. The legal position differs as between States that are or are not party to API and as between such States party that did or did not make nuclear statements when ratifying the treaty. For all States, there is an obligation to take constant care in nuclear operations to spare civilians and civilian objects. More detailed precautionary rules apply to all States with certain additional rules only applying to States that are party to API and that made no nuclear statement. States adopt numerous measures to disseminate this

body of law and international engagement seems to be the best approach for promoting international compliance.

Introduction

The breadth of this topic is enormous and the space available for its discussion is limited. In the paragraphs that follow, therefore, the aims will be twofold. First, the paper will seek to explain in clear, succinct terms the law of armed conflict rules that regulate respectively the resort to nuclear force and the use of nuclear force during an international armed conflict. While the idea of a threat or use of nuclear weapons in the context of an armed conflict that is internal to a State cannot be completely discounted, the discussion of the subject is more sensibly conducted by reference to armed conflicts between States. Second, the paper will, by expressing the law in terms that apply to, and are believed to be accepted by, all States, provide an accepted baseline for the dissemination of the law with a view to achieving a common understanding and acceptance of it by all nuclear States. Accordingly, if a rule is mentioned that is only accepted by certain States or that is known to be rejected—e.g., by the United States, this will be made clear. This paper will not consider policy in relation to the use of nuclear weapons. Where the United States is concerned, aspects of that policy are referred to in the US Department of Defense Law of War Manual.[1]

It should be noted that the two bodies of law, namely on the resort to nuclear force and on its use during an armed conflict, are distinct and must be considered separately.[2] States perceived to have initiated an armed conflict by aggressive action, for example, have duties and rights that are equal to those enjoyed by their victim(s) once an armed conflict is under way.[3] We should therefore start by considering what rules relate to the resort to the use of nuclear force.

Law on the Resort to the Use of Nuclear Force

The threat or use of force against the territorial integrity or political independence of any State, or that is in any other manner inconsistent with the purposes of the United Nations, is unlawful.[4] This is a customary international law norm, meaning that all States are bound by the prohibition to use any kind of force inconsistently with the purposes given in article 1 of the UN Charter.[5] This prohibition therefore applies equally to a threat or use of force by

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[1] US DoD Law of War Manual, para 6.18.1.

[2] US DoD Law of War Manual, para 3.5.2.

[3] See US DoD Law of War Manual, para 3.5.2.1.

[4] United Nations Charter, article 2(4).

[5] Article 1 of the UN Charter stipulates that the purposes of the United Nations, in abbreviated form, are the maintenance of international peace and security, the development of friendly relations among nations based on respect for the principles of human rights and self-determination, the achievement of international cooperation in solving international problems and to be a centre for the harmonizing of the actions of nations in the attainment of these ends.

means of a nuclear weapon.[6] Whether a particular use of force constitutes a breach of article 2(4) will in part depend on its scale and effects.[7] It will also depend on whether the use of force, or indeed threat, is lawful as being action taken in necessary and proportionate self-defence or whether it constitutes action authorised by the United Nations by means of a resolution issued under Chapter VII of the UN Charter.[8] It is highly likely that a use of a nuclear weapon by one State against another would meet the scale and effects criterion. The remaining issue to consider would therefore be whether the State employing the weapon had a lawful reason for doing so.

A threat breaches article 2(4) if the threatened action, when carried out, would be an unlawful use of force. Accordingly a threat to act in lawful self-defence would not breach this provision. The threat must however be communicative in nature.[9] Where there is an evident intent to carry out the threat and the capability to do so, a threat to use force will breach this provision. If either capability or intent is absent, the better view seems to be that an empty threat would be insufficient to constitute such a breach.[10] Action by a State that constitutes a threat or use of force contrary to article 2(4) also amounts to an internationally wrongful act justifying the use by the victim state of countermeasures[11] or the taking of action justified on the basis of necessity. Countermeasures are actions taken by the wronged State against the State that is responsible and that would breach an obligation that the former owes to the latter were it not for its classification as a countermeasure. The wronged State may only take such action to cause the other State to resume compliance with its legal obligations.[12] It may be realistic to contemplate countermeasures in response to the issuing of an unlawful threat to use nuclear force.

The most grave forms of a use of force would also amount to armed attacks. The United States is known to take the view that all unlawful uses of force in breach of article 2(4) also justify the use of force in self-defence.[13] The better, and more generally adopted view is that only the most grave forms of use of force amount to armed attacks giving the victim State the right to use force in self-defence. If a use of force is capable of amounting to an armed attack, it is for the victim State to choose whether to treat it as such. A victim State has the right to use force in self-defence if an armed attack occurs or, in the view of most

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[6] *Legality of the Threat or Use of Nuclear Weapons,* Advisory Opinion, 1996 I.C.J. 226 (Nuclear Weapons Advisory Opinion), paragraph 39.

[7] M N Schmitt and L Vihul (eds), Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations (Cambridge 2017) ('Tallinn Manual 2.0'), rule 69 and pages 330-337.

[8] United Nations Charter, article 42.

[9] Tallinn Manual 2.0, page 338.

[10] Ibid, page 339.

[11] See for example *Military and Paramilitary Activities in and against Nicaragua (Nicar. V US),* 1986 I.C.J. (Nicaragua Judgment), para 249.

[12] See International Law Commission, Responsibility of States for Internationally Wrongful Acts, GA Res 56/83 annex, U.N. Doc A/Res/56/83 (12 December 2001), article 49 and paragraph 3 of the associated Commentary.

[13] US DoD Law of War Manual, para 1.11.5.2.

commentators, if such an attack is imminent.[14] What constitutes imminence is the subject of some controversy.

In the view of the present author, there is some flexibility in the notion. It includes a right to act in self-defence when the last feasible window of opportunity presents itself. The likely severity of the consequences of failing to act will, it is suggested, have some bearing on the degree of permissible flexibility. The likely severe consequences of a nuclear armed attack imply, therefore, a reasonable degree of flexibility in interpreting the notion of imminence, although the important point is that a use of force in self defence must be just that, in defence, not in retaliation, vengeance or out of some other sentiment inconsistent with the notion of defence. If, therefore, the use of force is not needed to repel an imminent armed attack successfully or to defeat an armed attack that has already commenced, then the necessity requirement will not be satisfied and the 'self-defence' action will be unlawful. Likewise, the scope, scale, duration and intensity of the self defence action must be no more than what is required to end the situation that gave rise to it. There is no requirement that force in self-defence be equal in kind or quantity to that which constituted the armed attack. It is what is needed to bring the situation to an end that matters.

Force may be used in self-defence either individually or collectively. Individual self-defence arises, for example, when a State defends itself against an actual or imminent nuclear or other armed attack against itself. In the case of collective action, the States taking collective action must be responding to a request from the victim State and must act in accordance with the terms, if any, of that request.[15]

It should be borne in mind that this section is limited in its scope to a relatively brief summary of elements of the rules of that part of the law of armed conflict referred to as the *jus ad bellum.* States may be subject to other obligations arising, for example, from treaties dealing with disarmament, including those which specifically address nuclear weapons. Those provisions lie outside the intended scope of this paper. It should also be borne in mind that the International Court of Justice opined on the legality of the threat or use of nuclear weapons, and the judgment of that Court is discussed in the next section.

ICJ Nuclear Weapons Advisory Opinion

By means of a resolution dated 14 May 1993, the World Health Organization asked the International Court of Justice (ICJ) for an advisory opinion on whether the use of nuclear weapons by a State during war or armed conflict would constitute a breach of international law.[16] For reasons that do not need to trouble us, the ICJ declined to deal with that request. However, on 15 December 1994 the United Nations General Assembly adopted a resolution

[14] Letter from Daniel Webster to Lord Ashburton, 6 August 1842, concerning the *Caroline* incident: the right of self-defence only applies when the 'necessity of self-defence is instant, overwhelming, leaving no choice of means, and no moment for deliberation'.

[15] Consider US DoD Law of War Manual, para 1.11.5.5 where the view is expressed that an explicit request is not required.

[16] A Roberts and R Guelff, *Documents on the Laws of War* (3rd edn, 2000) 639.

in which it sought an Advisory Opinion from the ICJ on the following question: 'Is the threat or use of nuclear weapons in any circumstance permitted under international law?'[17]

In July 1996 the Court gave its comprehensive opinion,[18] concluding:

> There is in neither customary nor conventional international law any specific authorisation of the threat or use of nuclear weapons;
>
> There is in neither customary nor conventional international law any comprehensive and universal prohibition of the threat or use of nuclear weapons as such;
>
> A threat or use of force by means of nuclear weapons that is contrary to article 2, paragraph 4, of the United Nations Charter and that fails to meet all the requirements of article 51, is unlawful;
>
> A threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and other undertakings which expressly deal with nuclear weapons;
>
> It follows from the above-mentioned requirements that the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law;
>
> However, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self defence, in which the very survival of a state would be at stake.[19]

Paragraphs one, three and four above were adopted unanimously by the judges. Paragraph two was adopted by eleven votes to three. The last two paragraphs were adopted following the court President's casting vote. Some commentators have found the final sentence troubling and inconsistent with the basic principle that the law of armed conflict applies equally to all belligerent States irrespective of the merits of their cause. One highly respected commentator suggests that this *non liquet* element of the judgment is surprising given the court's earlier determination that there was no conventional or customary comprehensive prohibition on the use of nuclear weapons as such, and given the general

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[17] Resolution 49/75(k) acting under art 96(1) of the UN Charter.

[18] There is an extensive literature discussing this important piece of international law. See, eg, (1997) 316 IRRC; and Y Dinstein, 'The Laws of Air, Missile and Nuclear Warfare' (1997) 27 Israel Yearbook on Human Rights 1, 11–15.

[19] Nuclear Weapons Advisory Opinion, para 105. One issue that the court mentioned but on which no definitive opinion was given was the suggestion that the effects of nuclear weapons cannot be contained within the territories of the belligerent States and that they therefore are contrary to the principle of neutrality, D Akande, 'Nuclear Weapons, Unclear Law? Deciphering the Nuclear Weapons Advisory Opinion of the International Court' (1997) 68 BYIL 165, 202–3.

understanding that, if international law does not prohibit particular conduct, it is permitted.[20]

The ICRC made a statement to the 51st Session of the United Nations General Assembly in response to the Advisory Opinion. It found it 'difficult to envisage how a use of nuclear weapons could be compatible with the rules of international humanitarian law.'[21] Christopher Greenwood analysed the Advisory Opinion, concluding that a finding that the use of nuclear weapons is unlawful in all circumstances would not have been warranted.[22] He agreed that there is at present no specific prohibition on their use but that any such use would be subject to ordinary principles of law on the use of force. He commented, in relation to the general principles of unnecessary suffering, discrimination and proportionality, that, given the need to consider the use of the weapon in an infinite variety of circumstances, the court could not have determined as a matter of law that a nuclear weapon could not be used without violating one or more of those principles, even if some members of the court may have suspected that in fact that is so.[23]

Other authoritative commentators,[24] however, have criticized the judgment for its failure to mention the Treaty on the Non-Proliferation of Nuclear Weapons and the 183 States that were then party to that document. The *non liquet* on the issue of the legality of the use, or threat to use, nuclear weapons was, some argued, discriminatory in that P5 States and non-parties to NPT are privileged by having the possibility of defending themselves with nuclear weapons while other States cannot. As readers will appreciate, however, the fact that certain States are bound by particular treaty provisions does not predetermine the issue of the legality of a certain course of action for States that are not similarly bound.

International Armed Conflict

The law of international armed conflict applies to 'all cases of declared war or of any other armed conflict which may arise between two or more …[States]… even if a state of war is not recognized by one of them.'[25] So an international armed conflict arises when hostilities occur between two or more States. As the Commentary to the 1949 Geneva Conventions explains, '[a]ny difference arising between two States and leading to the intervention of armed forces is an armed conflict….It makes no difference how long the conflict lasts, or

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[20] Y Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict* (2nd Edn 2010) 85. Stefan Oeter also concludes that the international law in force does not contain any explicit prohibition against the use of nuclear weapons; S Oeter, Methods and Means of Combat, in D Fleck (Ed), The Handbook of International Humanitarian Law (3rdEdn) (2013), 115, 154, and discuses the numerous multi- and bi-lateral treaties designed to prohibit their proliferation; ibid, 153-4.

[21] (1997) 316 IRRC 118, 119.

[22] C Greenwood, 'The Advisory Opinion on Nuclear Weapons and the contribution of the International Court to international humanitarian law' (1997) 316, IRRC 65, 73.

[23] Greenwood (n 22 above) 72.

[24] TLH McCormack, 'A non liquet on nuclear weapons—The ICJ avoids the application of general principles of international humanitarian law' (1997), 316 IRRC 76.

[25] Article 2(1) common to the Geneva Conventions, 1949.

how much slaughter takes place.'[26] So it is the resort to armed force between States that triggers the application of the law of armed conflict and that law applies to the first strike, whether that strike is nuclear or otherwise. The law of armed conflict includes rules that address targeting, and the next section will give a brief summary of those rules as they apply to the use of nuclear weapons.

Law of Nuclear Targeting

The cardinal, intransgressible principle that lies at the core of the law of targeting, and that applies equally to any use of nuclear weapons, is the principle of distinction.[27] Under that principle, to 'ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.'[28] Targeting law rules refer frequently to 'attacks.' Attacks are defined as 'acts of violence against the adversary, whether in offence or defence'[29] and would thus include any use of a nuclear weapon.

So, attacks must be limited strictly to military objectives. The generally accepted definition of military objectives, so far as objects are concerned, is 'objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralisation, in the circumstances ruling at the time, offers a definite military advantage.'[30] This definition binds all States. It is known, however, that the United States takes the view that military objectives include objects that are war-sustaining— i.e., that an 'object's effective contribution to the war-fighting or war-sustaining capability of an opposing force is sufficient.'[31] In the author's view, this is too broad an interpretation and the language of article 52(2) is to be preferred.

Where persons are concerned, the principle of distinction prohibits making civilians the object of attack.[32] For these purposes, a civilian is any person who is not a member of the armed forces of a party to the conflict, a member of a militia, volunteer corps or resistance movement satisfying prescribed conditions, a member of armed forces professing allegiance to a government or authority not recognised by the opposing party or a member

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[26] J S Pictet (ed), Commentary on Geneva Convention I (ICRC 1952), page 32.

[27] Nuclear Weapons Advisory Opinion, paras. 78 and 79.

[28] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, Geneva, 8 June 1977 (API), article 48.

[29] API, article 49(1).

[30] API, article 52(2).

[31] US DoD Law of War Manual, para 5.7.6.2.

[32] API, article 51(2).

of a *levee en masse.*[33] Attacks must therefore be limited to combatants, civilians taking a direct part in the hostilities[34] and to members of a *levee en masse*.

Of great significance to any employment of nuclear weapons is the rule that prohibits indiscriminate attacks.[35] These are defined as attacks that are not directed at a specific military objective[36] and that are consequently of a nature to strike civilians, civilian objects and military objectives without distinction. The indiscriminate attacks rule also prohibits weapons that are not capable of being directed at a specific military objective or the effects of which cannot be limited as required by API.[37] These provisions relating to weapons were, arguably, new rules introduced by API and are therefore subject to the statement made by a number of States when ratifying that treaty to the effect that the new rules it introduced do not apply to nuclear weapons.[38] Reference will be made below to other new rules to which such statements on ratification also apply.

The important point, however, is that the principle of distinction and the prohibition of indiscriminate attacks apply to nuclear weapons. The indiscriminate attacks rule, as articulated in API, provides that if an attack treats a number of separate and distinct military objectives located within a similar concentration of civilian objects as a single military objective it will be unlawful because it would be indiscriminate.[39] Likewise, if an attack may be expected to cause death or injury to civilians or damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage that is anticipated, the attack would also be regarded as indiscriminate and would therefore be prohibited.[40] It can, however, be argued that these developments of the discrimination rule constitute new rules and therefore, for the States that made nuclear statements of the kind referred to in the previous paragraph when ratifying API, that they do not apply to the use of nuclear weapons. Of course, States that have ratified API without making a nuclear statement must comply with the rules as to distinction, discrimination, proportionality and precautions in the same way in respect of nuclear weapons as in connection with weapons use in general. Moreover, the US DoD Law of War Manual takes the position that 'attacks using nuclear weapons must not be conducted when the expected incidental harm to civilians is excessive compared to the military advantage expected to be gained'.[41]

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[33] Inhabitants of a non-occupied territory who spontaneously take up arms to resist the invading forces and who comply with certain conditions are members of a *levee en masse*; Geneva Convention III, article 4A(6).

[34] Note that under article 51(3) of API and customary law, civilians are protected from being made the object of attack "unless and for such time as they take a direct part in hostilities'.

[35] See for example 1923 Hague Draft Rules of Aerial Warfare, article 24(2) to (4).

[36] 1923 Hague Draft Rules of Aerial Warfare, article 24(1).

[37] API, article 51(4).

[38] Consider e.g. statement (a) made by the UK when it ratified the treaty on 28 January 1998.

[39] API, article 51(5)(a).

[40] API, article 51(5)(b).

[41] US DoD Law of War Manual, section 6.18.

Constant care must be taken in nuclear as well as in other military operations to spare the civilian population and civilian objects. One hundred and seventy-four States in the world are party to API[42] and those that did not make a nuclear statement when ratifying the treaty are therefore legally required to apply the detailed precautions in attack set forth in article 57 paragraphs (2) to (3) of that treaty. Those States that did make such a statement are not obliged in connection with nuclear operations to take the precautions that reflect the proportionality rule for the reasons explained in the preceding paragraphs. In summarised form, the obligations in paragraphs (2) to (3) are as follows:

> to do everything feasible[43] to verify that the objectives to be attacked are not civilians, civilian objects, or subject to special protection but are military objectives whose attack is not prohibited by AP1;
>
> to take all feasible precautions in the choice of means and methods of attack to avoid, and in any case to minimize, incidental loss of civilian life, injury to civilians or damage to civilian objects; and
>
> to refrain from deciding to launch an attack which may be expected to cause excessive incidental loss of civilian life, injury to civilians, or damage to civilian objects in relation to the military advantage the attack is anticipated to yield.

The paragraphs also require that attacks be cancelled or suspended if it becomes apparent that the objective is not a military one, or is subject to special protection, or that the attack may be expected to have the excessive collateral consequences that are prohibited by the proportionality rule. However, when ratifying AP1, the United Kingdom stated its understanding that the obligation to comply with this rule only extends to those who have the authority and practical possibility to cancel or suspend the attack and some other States made similar statements.[44]

Paragraph (2)(c) requires effective advance warning to be given of attacks which may affect the civilian population, unless circumstances do not permit.[45] Paragraph (3), which the United States is known to reject and which is probably not customary law, requires that where, in order to obtain a similar military advantage, it is possible to choose between military objectives, the objective to be chosen shall be that the attack on which may be expected to cause the least danger to civilian lives and to civilian objects.[46]

The law of targeting also requires that precautions be taken against the effects of attacks. These precautions require the parties to the conflict, to the maximum extent feasible, to

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[42] www.icrc.org viewed on 25 September 2018.

[43] Statement (b) made by the UK on ratification of AP1 on 28 January 1998 notes the UK understanding that the term "feasible" here means 'that which is practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations.'

[44] Statement (o) made by the UK on ratification of AP1 on 28 January 1998. Those persons, moreover, necessarily have to reach decisions on the basis of their assessment of the information from all sources which is reasonably available to them at the relevant time; UK statements on ratification, statement (c).

[45] AP1, art 57(2). Those circumstances may include military and humanitarian factors.

[46] AP1, art 57(3).

take necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations.[47] Which precautions are necessary will inevitably depend on the circumstances. If there is evidence to suggest that the opposing party intends to use nuclear weapons, this will inevitably affect the extent and nature of the precautions that must be considered.

Finally and briefly in this section of the paper, it must be noted that the law of armed conflict specially protects certain persons and objects. Thus, medical facilities and transports and cultural objects are examples of objects that must not be made the object of attack unless they become military objectives. Even then, they benefit from a particular kind of warning regime before an attack can lawfully be made. Medical and religious personnel are also entitled to receive special protection. Where the natural environment is concerned, for API States party '[i]t is prohibited to employ methods or means of warfare which are intended, or which may be expected, to cause widespread, long-term and severe damage to the natural environment.'[48] This is not a rule of customary law. For States not party to API, such as the United States, there is a customary rule that the wanton destruction of the natural environment is prohibited. Destruction is wanton if it is carried out deliberately and maliciously.[49] Accordingly, when planning or conducting air or missile operations due regard ought to be had to the natural environment.[50]

The law of armed conflict deals with certain methods of warfare. So, acts or threats of violence the 'primary purpose of which is to spread terror among the civilian population' are prohibited,[51] and this rule would apply in relation to nuclear weapons as an extension of the distinction principle. API prohibits the taking of reprisals against the civilian population and against civilian objects. That was a new rule introduced by the Protocol which would not, therefore, bind States party to API that ratified subject to a nuclear statement similar to that referred to earlier.

Dissemination of the Law

States adopt a number of measures to promote compliance with international law in armed conflict, and these measures are of particular importance in relation to nuclear operations. The process of disseminating the law internally within a State often starts with the publication by that State of a Manual, such as the US DoD Law of War Manual or the UK's Manual of the Law of Armed Conflict. The next stage in the process is the training of the members of the armed forces in the law, to include particular focus on the aspects of the law that are likely to be of greatest relevance to the duties of the particular armed forces members. During military operations, legal advice is made available to commanders at

[47] API, article 58, particularly paragraph (c).

[48] API, article 35(3). Note that this was a new rule introduced by the Protocol which is therefore subject to the nuclear statements made by a number of States party.

[49] HPCR Manual on International Law Applicable to Air and Missile Warfare, 2010, rule 88 and paragraph 2 of the associated Commentary.

[50] Ibid, rule 89.

[51] API, article 51(2) and consider article 48.

appropriate levels on the rules of the law of armed conflict and related matters. Procedures for the clearance of targets are established in order to seek to ensure that only lawful attacks are conducted and rules of engagement are issued, promulgated and briefed in order to seek to ensure that military activities are in accordance with the Commander's intent and with applicable law. Finally, the maintenance of discipline in the armed forces is an important ingredient in securing compliance by the force as a whole with the law of armed conflict. All of these measures apply in connection with nuclear operations just as much as they apply in connection with the conduct of hostilities in general.

Understanding of the law is also disseminated externally by means of courses taught at training institutes, as part of military training provided to other States, by preparing and conducting role play during international exercises, and by discussing, sharing and seeking to agree interpretations of the legal rules. Securing compliance with nuclear operations law is confronted with substantially the same challenges as in the case of the law of armed conflict in general. It makes sense to monitor such compliance carefully, given the potentially very dangerous consequences of breaches of the law. It would be sensible for States to provide for such breaches to be penalised and, it is suggested, for compliance to be recognised. Perhaps the most important suggestion is that there be suitable bi-lateral and multi-lateral engagement among States, at the political/diplomatic, at the official and at the academic levels, to achieve and thereafter maintain mutual international understanding as to the rules that apply to nuclear operations and as to how those rules should be understood. Finally, international including regional teaching of the law of armed conflict should be encouraged, with appropriate reference being made to the law as it applies to nuclear operations.

III. ENDNOTES

IV. TECHNOLOGY FOR GLOBAL SECURITY INVITES YOUR RESPONSE

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