

## **Boothby**

Mr Chairman, Ladies and Gentlemen

Most of the States represented in this room are party to the First Additional Protocol to the Geneva Conventions. This means that they are legally required to comply with the requirements of article 36 to that Protocol, the text of which you can see on the screen (slide 2). You will notice that the obligation related to weapons and the methods of using them. The legal duty is to check that the planned use of the weapon or method will comply with all of the international law rules binding on that State. The duty to consider these legal matters starts with the study of the weaponisation of a technology and continues through development to when the completed weapon is acquired. States that are not party to Additional Protocol I are required, as a matter of customary law, to conduct these weapon reviews in relation to all new weapons they acquire.

These reviews must determine whether the new weapon complies with the existing rules of weapons law. So it is existing law that determines the acceptability of new technology. In very brief terms (slide 3), those conducting weapons reviews must determine whether the new weapon:

is of a nature to inflict additional injury or suffering for which there is no corresponding military purpose;

whether the new weapon or method is by nature indiscriminate;

whether it breaches environmental protection rules the detail of which will depend on whether the particular state is or is not a party to Additional Protocol I;

if the State is party to the 1976 UN Environmental Modification Convention, whether the weapon uses elements of the environment as a weapon in a way prohibited by the treaty; and finally

whether the weapon, either as such or in the way it is intended to use it, breaches any of a complex and lengthy set of rules that relate to specific weapons technologies.

These, then, in very brief summary form, are the criteria that must be applied by all States to determine whether any weapon is legally acceptable. One is judging the weapon in its normal intended circumstances of use and it is the generic characteristics of the weapon that will be relevant when conducting such a weapon review. The weapon reviewer is not normally being asked to consider the lawfulness of a particular attack – that is usually a matter for the operational commander to assess by applying targeting law with the assistance of his/her deployed legal adviser.

(Slide 4) With autonomous attack technologies, however, some additional factors must be considered when a legal review is undertaken. The weapon reviewer of

an autonomous system must still focus on the generic characteristics of the weapon system, but taking human beings out of the decision to attack raises an important issue, namely can the system comply with targeting law. In other words, if you take the human being out of attack decision-making, you need to be sure that the targeting law rules that the human would normally apply can be applied. Targeting law requires a number of complex assessments in relation to attacks and some of these are listed on the slide. We should focus on precautions that attackers are required to take. So as a weapon reviewer of an autonomous weapon system, you ask yourself:

Can the system assess anticipated military advantage?

Can the system assess expected collateral damage?

Can the system determine whether expected collateral damage is excessive?

Can the system choose a weapon/method/target to minimise collateral dangers?

In anti-personnel roles:

Can the system distinguish able-bodied combatants from those hors de combat?

Can it distinguish combatants from peaceful civilians?

Can it decide whether a warning is required?

While currently available technology may be able to identify certain military objects such as tanks, artillery etc, it cannot comply with the evaluative targeting law requirements listed here. So this will limit the circumstances in which autonomous technologies can lawfully be employed.

It may sometimes be possible at the mission planning stage for a human being to determine that in all foreseeable circumstances attacks programmed attacks will always comply with these evaluative rules. This may involve limiting the area to be searched for targets and the time when search will happen, so targeting law may in this way be complied with by the human planner. This may be the case, for example, in remote areas of desert or remote, little-used areas of ocean.

I would also distinguish between essentially defensive systems that are designed to protect a location e.g. by engaging inbound rocket, torpedo or similar systems, and those which seek out their own targets for offensive attack. The objects the defensive system I have mentioned is designed to neutralise are by definition military objectives, rockets, torpedoes etc, and again the proportionality and other evaluative rules can be considered at the time when the defensive weapon system is being deployed.

The important point, in my view, is that what I would describe as offensive autonomous weapon systems that go out and choose their own targets are, judged by reference to currently available technology, generally going to fail a

weapon review. The circumstances in which they could lawfully be used, discussed earlier, are very limited, e.g. remote desert and ocean. Much work is being done however to address these technological shortcomings. We do not know whether future technology may produce weapon systems that can outperform humans in protecting civilians and civilian objects. It would in my view be a mistake to try to ban a technology on the basis of its current shortcomings, when in future it may actually enable the law to be complied with more reliably than now. Rather than pursue ill-advised bans, the proper answer has to be ensuring that states properly review weapons and you will find leaflets at the back of the room describing a modestly-priced course on weapons law available to you and to your colleagues in capitals undertaking weapons law-related work.

Permit me to add one brief thought. I hear numerous references to 'meaningful human control'. Of course, an autonomous system over which there is meaningful human control is not an autonomous system. Meaningful human control can, I think, be a useful policy approach for the time being to address the shortcomings in currently available technology that we have discussed. Meaningful human control should not, however, in my view be elevated into some sort of legal criterion that determines the acceptability of a weapon system. The applicable criteria are the ones I have mentioned earlier. Implementation in good faith by States of their weapon review duties, and proper adherence by them to the vitally important targeting law rules that seek to protect civilians and civilian objects are, I think, the answer here. Introducing 'meaningful human control' as a criterion as to the acceptability of some weapons risks weakening the focus on existing weapons law and targeting law standards by introducing this less clear, even ambiguous, notion. In addition, a legal requirement for 'meaningful human control' might cause some to call into question weapons in widespread use on which States rely for their security.

W H Boothby