Programme of Action on Small Arms and Light Weapons

Second Open-ended Meeting of Governmental Experts 2015

Chair's summary

Overview

In the drafting of the Chair's summary, the Chair has taken into account discussions by States during MGE2, expert technical presentations offered under each agenda item and the MGE2 working papers prepared by delegations, as well as presentations by international organizations and civil society organizations.

The Chair heard strong requests by States at MGE2 to include in the Chair's summary concrete measures for taking forward the issue of recent developments in small arms and light weapons technology under the Programme of Action process. He also heard calls from States to provide initial conclusions on ways forward to address the challenges posed by these technologies. As such, these elements have been addressed in the current summary.

There were many considerations emerging from discussions. These reflect the following – firstly, a technological divide between States means that new developments in small arms and light weapons technology affect States differently. While some States are weighing the potential implications of 3D printing, many still face barriers in implementing the basic requirements of the Programme of Action and the International Tracing Instrument. Therefore there was a strong emphasis at MGE2 for more in-depth consideration of new and existing technologies, including in the light of international cooperation and assistance, capacity-building, and the transfer of technology and knowledge.

States unanimously reaffirmed the validity of the Programme of Action and the International Tracing Instrument, while some States indicated that additional guidance is required for the purposes of implementation of the International Tracing Instrument, particularly regarding modular weapons and other new developments.

While recognizing the need to continue tackling existing challenges, there was general agreement that in addressing new developments in technology, States are looking to ensure that they are well prepared to address issues that may become challenges in the future, thus ensuring that the international community remains ever ready and ahead of the curve in addressing the illicit trade in small arms and light weapons.

The present summary outlines core elements as they were discussed during MGE2. The summary was prepared by the Chair under his own responsibility and reflects his interpretation of the main points under discussion. It cannot represent a full record of all issues discussed during the week, nor reproduce the national positions of delegations.

1. Consideration of the implications of recent developments in small arm and light weapon manufacturing, technology and design for effective marking, record-keeping and tracing

Materials: How to mark?

1. Until the third quarter of the twentieth century, essential parts of small arms were generally made of steel. Since then, aluminium, titanium and other metals have come into use, and polymers were introduced in the mid-1960s as a cost efficient method of manufacturing predominantly handgun frames.

2. Polymers are now being used more often in the production of handgun frames and some long-arm receivers as well. They have become a mainstream method of manufacture within the industry.

Polymers provide lower cost, lighter weight, resistance to moisture, ergonomic design and thermal neutrality. However, they offer less tensile strength than steel or aluminium and are more susceptible to accidental damage. Polymers are cheaper in general, but it is more expensive to customize them to specific marking requirements under the International Tracing Instrument.

3. At MGE2, States considered the implications for effective marking of polymer frames used in small arms production. They noted that durable marking, as prescribed by the International Tracing Instrument (para. 7) was more difficult to achieve in the case of polymer, especially after the time of manufacture—for example, at the time of import.

4. Laser marking and micro-percussion (dot-peen) were marking methods considered in the above context of polymer frames. States noted that the cost of laser marking was relatively high, while in the experience of some delegations, neither method presented a sufficiently durable option for marking polymer weapons. The ability to recover laser or dot-peen marks that had been erased or altered was also very limited.

5. In order to ensure that a polymer frame weapon received a durable marking, one option recommended was to use a traditional stamping method of marking on metal parts of the weapon, such as the barrel or bolt. This option however does not comply with the International Tracing Instrument (para 10) as these components (barrel and bolt) are not the essential structural core component of the weapon.

6. Another option was to require all manufacturers to insert a metal tag or plate in the polymer frame. While some States noted that it was possible, in some cases, for an arms trafficker to easily remove such a tag, States considered the suggestion of embedding the metal tag in such a way that it could not be removed without damaging the frame.

7. Some States pointed out that the use of metal tags did not necessarily resolve the difficulty of marking polymer frame firearms after the time of manufacture as there might be insufficient space on the metal tag for such markings. While manufacturers could leave some space on the metal tag for post-manufacture markings, space might still be insufficient if the arm was imported into several countries. One of the follow up suggestions was to place an additional unmarked metal tag for the purposes of post-manufacture marking.

8. Another partial solution was for the manufacturer to include the import marking during time of manufacture at least in cases where the end user was known at the time of manufacture. Some States also raised the question of whether a specially designated area on a weapon could be ensured during manufacture for durable marking, using dot-peen or other type of marking.

9. States noted that while the utmost should be done to mark small arms and light weapons durably, in line with the International Tracing Instrument, criminals intent on doing so can often remove any ITI-compliant markings.

10. Several States called for further consultations with manufacturers on issues relating to weapon marking, including regarding guidance on cost-effective options. While they noted that some details of implementation should be left to producers, they stressed that it was the responsibility of governments to develop the applicable rules in this area.

Modular Weapons: Where to mark?

11. As national armed forces sought to prepare for a wide range of operational scenarios, they were driving demand for the development and production of modular weapons featuring a core or fixed component around which most other components of the rifle can be changed, allowing for fundamental changes in the weapon's configuration and even, in some cases, its calibre.

12. The fact that modular weapons can be fitted with different components, including from other weapons, would result in different serial numbers appearing on the same weapon, increasing the risk of misidentification.

13. At MGE2, experts' presentations indicated that with the advent of modular weapons, the question of where best to mark a weapon has become an increasingly important. The International Tracing Instrument prescribes the application of a unique marking to an essential or structural component of the weapon, such as the frame and/or receiver, and also encourages the marking of other parts of the weapon, such as the barrel and/or slide or cylinder.[1]

14. However, it was pointed out that some weapons have split receivers, which makes it more difficult to identify the essential or structural component for purposes of unique marking. For some modular weapons, the essential or structural component is the upper receiver, which can have a marked changing barrel or a non-removable barrel, while in others it is the lower receiver. A challenge in this regard might be that many States have not decided at the national level, which component constitutes the essential or structural component.

15. Several States suggested that the original manufacturer of a modular weapon could determine what part of the weapon was the essential or structural component. That component would serve as the 'control component' of the weapon. That component would, therefore, receive the unique markings prescribed in the International Tracing Instrument (para. 8). At the same time, only the markings on the control component would be used to create the record for the weapon.

16. There were several proposals regarding the marking of modular weapons. In the view of some States, the markings on the control component could be preceded by the number "(1)", with the markings on other components of the weapon preceded by the number "(2)…", in order to distinguish the control component from the weapon's other components. Some States proposed that only the control component be marked, while others saw no problem in continuing to mark the non-control components of a modular weapon provided it was clear which component served as the control component, in essence, representing the weapon for purposes of tracing. Again, States stressed that it was the responsibility of governments to develop the applicable rules in this area.

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[1] Paragraph 10.

2. Consideration of practical steps to ensure the continued and enhanced effectiveness of national marking, record-keeping and tracing systems in the light of such developments, including ways to support the transfer, uptake and effective utilization of relevant tools and technologies

Production: Potential challenges?

17. Three-dimensional (3D) printing, or "additive manufacturing" technology, has been mainly used in architecture, industrial design, biotechnology and aerospace. In 3D printing, a machine reads the design from a 3D-printable file and lays down successive layers of liquid, powder, paper or sheet material to build the model from a series of cross sections. These layers are joined or automatically fused to create the final shape.

18. In recent years, 3D printing technology has been, on some occasions, used for making weapons, first using polymers and then also using metals, though a weapon's reliability produced this way is not very high for the moment. This may change as technology progresses, while currently a printed weapon that can fire a single shot or more than 10 shots already poses a threat.

19. Experts pointed out that the manufacture of a 3D weapon requires no small amount of resources and time to produce. At the same time, the private assembling of a 3D printer and its use for the production of a functioning weapon has already been shown to be possible.

20. At MGE2, a potential challenge related to 3D printed firearms was the greater ease with which these weapons could be smuggled past many standard screening mechanisms, in particular metal detectors: Some tests have shown that 3D printed weapons, even when containing metal elements, have passed through traditional walk-through metal detectors, although they have been detected with X-ray scanners, used at airports.

21. States further heard from expert presentations that specialized, high-end 3D printers have an associated high cost: US$500,000 to US$1 million, putting them out of reach of most individuals at present. Technological improvements will likely decrease the cost of high-end 3D printers. Low-end printers on the other hand cost from US$1,500 onwards.

22. Some States highlighted that they have already put in place measures to mitigate the risks associated with 3D printing of weapons. Such measures include laws prohibiting making available 3D weapon designs on the Internet; instituting national awareness-raising programmes targeted at 3D printer manufacturers of the potential risks and; ensuring export licences were in place for 3D printers.

23. Given that 3D printers themselves can potentially be used for printing illicit weapons, States also highlighted the need to pay attention to the resale of such printers.

Marking, record-keeping and tracing: Existing and new practices

24. The International Tracing Instrument[2] requires that unique markings are applied to small arms and light weapons at the time of manufacture, including the name of the manufacturer, the country of manufacture, the serial number or any alternative unique user-friendly marking with simple geometric symbols in combination with a numeric and/or alphanumeric code, which would permit ready identification by all States

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[2] Paragraph 8.

of the country of manufacture. The Instrument also requires, to the extent possible, that appropriate simple markings be made on each imported weapon that will permit the identification of the country of import and, where possible, the year of import.

25. Under this agenda item, States heard from experts regarding current and effective methods for marking weapons. With the partial exception of polymer frame weapons, traditional methods such as dot-peen, engraving and hand stamping continue to meet most requirements.

26. This could also be a solution where challenges are associated with the potential breakdown of marking machines, or the logistical challenges of transporting these machines to different locations. It would be also appropriate to consider such scenarios in corresponding international assistance programmes.

27. New technologies (for example microdot and nano trace technologies, etc.) recently entered the market. However these are not visible to the naked eye and while they do not replace traditional marking methods due to the ITI requirement for easily readable markings, conspicuous without technical aids or tools, they can complement traditional marking methods by creating hidden marks that are difficult to find and erase.

28. States also considered micro-stamping technology which for instance enables a mark to be imprinted on an ammunition cartridge, by the firing pin, when the weapon is fired with the aim of enhancing tracing. Experts highlighted that this technology was easily defeated by erasing the mark, if found, or the entire firing pin could be replaced. Without being a primary marking technology, if desired, micro-stamping can provide an addition to other types of marking.

29. States highlighted that beyond the marking of weapons, the accurate recording of such marks – even by hand – was key, as in the end, this was what could help enable a successful trace.

Stockpile management: New methods for traditional tasks
30. Under the Programme of Action, UN Member States undertake to ensure that their armed and security forces 'establish adequate and detailed standards and procedures relating to the management and security of their stocks of these [small arms and light] weapons'. These standards and procedures are to include 'physical security measures; control of access to stocks; inventory management and accounting control … [and] security, accounting and control of small arms and light weapons held or transported by operational units or authorized personnel' (PoA, II para.17).

31. Experts shared national practices and regulations relating to stockpile management including the marking, record-keeping and tracing of weapons, and in this regard considered barcodes, radio frequency identification (RFID) and biometrics for purposes of electronically identifying stored items, collecting data on them and enabling the data to be entered automatically into record-keeping systems.

32. Some States shared their practice of using blue-tooth and other technologies to support the inventory management of their stockpiles. Among other things, such technologies enable the real-time tracking of inventoried items, for example from manufacturer to storage and from storage up to the individual users.

33. In a similar vein, States also considered the usability of RFID and biometric technologies in limiting the access to the weapon to authorized users only. States considered that for armed and security forces, this, together with Global Positioning System (GPS) tracking technologies, may create operational challenges which could put personnel at risk. At the same time, some States noted that the application of such technologies to civilian-owned weapons could be a possibility in the future, for those who wish to use it.

3. The transfer of technology and equipment, as well as capacity-building, in particular training, for the full and effective implementation of the Programme of Action and the International Tracing Instrument

International cooperation and assistance: Needs and challenges

34. At MGE2, a recurring theme was the technical divide between States which did not have or use new technologies and those which did. It was emphasized that the traditional methods of marking, record-keeping and tracing were often entirely adequate and reliable. States considered international cooperation and assistance including the transfer of technology and equipment to be a central component for the full and effective implementation of the Programme of Action and the International Tracing Instrument.

35. States heard from expert presenters that in the provision of assistance, key issues included taking into account the national priorities of beneficiary countries and crucially, involving national authorities in the entire cycle of project implementation, beginning with the planning, design, and continuing to implementation and assessment phases. Among other things, such a involvement would facilitate a more efficient transfer of relevant knowledge to the beneficiary country.

36. The sustainability of assistance, including the development of a regulatory environment, and the transfer of knowledge was emphasized along with the need to take into account the local environment, including the provision of training in local languages. The need for an agreement of terms between donors and beneficiary countries was also highlighted. Recurring costs such as training, electricity and fuel, and possibilities for regional harmonization, including the provision of compatible equipment, should be considered.

37. It was underscored that coordination remained a very important issue to be addressed in the provision of international assistance, as there were often several donor countries, international or regional organization and non-governmental organizations, each with different projects, providing assistance in the same country. States highlighted the need to ensure regular coordination meetings between assistance providers at the country level, including through the United Nations, and including in the early project planning phase to prevent duplication.

38. Some States have suggested to increase and direct the cooperation efforts through the Regional Centres of the UN Office for Disarmament Affairs, which would help share the experience and adjust it to the national individual demands.

39. It was noted that regional and subregional organizations have an important role to play, upon request, in the implementation of the Programme of Action and the International Tracing Instrument, including in the coordination of assistance. States were also encouraged to cooperate closely with regional and subregional organizations as a matter of good practice, given their particular knowledge of the countries and circumstances of the relevant region or subregion.

40. It was highlighted that international assistance is a partnership in which donors and beneficiaries should work closely together. Also, donor States highlighted that they face some challenges in the provision of assistance and urged for the consideration of regulations, structures, infrastructure and support mechanisms, including adequate national personnel management practices to take place in recipient States.

International cooperation and assistance: Trust funds

41. States considered the question of strengthening the mechanisms for the provision of assistance under the Programme of Action and the International Tracing Instrument.

42. There were calls for the establishment of a UN trust fund dedicated to the implementation of the Programme of Action and the International Tracing Instrument. Some States also suggested additional modalities for the trust fund such as funding through the UN regular budget, while others did not agree with this option, proposing voluntary funding mechanisms instead. States also suggested the establishment of similar trust funds at the regional levels, through the Regional Centres of the UN Office for Disarmament Affairs. There were also calls for a database of donor resources.

43. Some States highlighted the existence of the UN Trust Facility Supporting Cooperation on Arms Regulation (UNSCAR), through which a group of donors providing for the implementation of the Arms Trade Treaty as well as the Programme of Action. States in a position to do so were urged to contribute to existing trust fund arrangements including UNSCAR.

4. Additional issues related to the implementation of the Programme of Action and the International Tracing Instrument

Issues raised under this agenda item, and previously introduced by delegations, included:

(a) Promotion of a culture of peace;
(b) Strengthening the implementation of existing provisions of the International Tracing Instrument and the Programme of Action;
(c) Awareness-raising and training in affected areas;
(d) Strengthening border controls and cross-border cooperation;
(e) Ammunition;
(f) Craft production of small arms and light weapons;
(g) Direct State control over transfers of small arm and light weapons, including brokering;
(h) Unlicensed manufacturing of small arms and light weapons;
(i) Re-export of small arms and light weapons produced under foreign licence;
(j) Licensing of the manufacture of small arms and light weapons as a matter of intellectual property;
(k) Transfer of weapons to non-state armed groups;
(l) Synergies between relevant instruments, including linkages between the Programme of Action and the Arms Trade Treaty; and
(m) Security Council resolutions 2117 (2013) and 2220 (2015) on the issue of small arms and light weapons.

5. Initial conclusions and recommendations

Materials

44. Some traditional marking methods of marking weapons are not suitable for marking polymer weapons. While laser marking can be used, it is also more expensive than other methods and does not yield a durable (recoverable) mark. Other potential solutions to the marking of polymer weapons include the insertion of a metal plate or tag in the polymer weapon and the stamping of durable marks on such plates or tags, as already done by some manufacturers. When the end-user of a weapon is known, manufacturers can also put import markings on it at the time of manufacture. It would be interesting to further explore, with

manufacturers, the idea to insert an additional metal tag, for post-manufacture markings. Further guidance on cost-effective options for the marking of polymer weapons may be considered.

Modular weapons

45. The part of the modular weapon which is the essential or structural component (and thus bears the serial number of the weapon for record-keeping and tracing purposes) needs to be clearly identifiable. Such a component can be marked with a number "(1)" just before the serial number, to make it easily recognizable. Although modular weapons are not yet found in many States, further guidance on the marking, record-keeping, and tracing of modular weapons may be considered.

Production

46. States noted that while the use of 3D printing technology to manufacture small arms and light weapons was still in its infancy, it had the potential to pose serious challenges to the implementation of the Programme of Action and the International Tracing Instrument. In particular, as the costs of hardware, software and printing materials declined, there was a risk that the technology would become more attractive to criminals. Further consideration of ways of strengthening controls over 3D printing technology may be required in order to prevent illegal applications of the technology.

Marking, record-keeping and tracing

47. Equipment requires consistent care and maintenance, which can be a challenge. In many cases traditional marking methods offer the most cost-effective solution to the marking, record-keeping and tracing of weapons. If barriers to effective implementation exist for a pen-and-paper approach to record-keeping, these barriers may also exist should sophisticated technology be emplaced, and the respective barriers may be tackled first. New marking technologies, however, can provide an additional level of support in tracing, where their implementation is possible.

Stockpile management

48. A differentiation was made between technologies used for tracing, as per the International Tracing Instrument, and technologies used for stockpile and inventory management. RFID and other tracking technologies were notably more used for the latter purpose currently. Some States mentioned the desirability for the creation of adequate and sensible safe storage requirements for weapons owned by civilians, taking into the account the capacity of the local community to do so.

International Cooperation and Assistance

49. Further attention needs to be given to the issue of international cooperation and assistance including the transfer of technology, particularly in light of the discussions at MGE2 of new developments in small arms and light weapon technology. The modalities of international cooperation and assistance should be further enhanced and could be a topic to be considered at BMS6.

50. States continued to observe the need to increase the utility of reporting, in particular by using national reports to identify implementation trends and challenges and to enhance the matching of assistance needs with available resources.

Trust funds

51. At BMS6, States could consider the adequacy of existing voluntary trust fund mechanisms for international cooperation and assistance, including the transfer of technology, as well as how they may wish engage these for the more effective implementation of the Programme of Action and the International Tracing Instrument.

52. Noting the presentation provided by UNODA at MGE2 on options for enhanced funding and trainings, States reiterated their request for the Secretariat to fulfil its mandate of the outcome document of BMS5 by presenting for consideration at the BMS6:

- options for the enhanced funding of activities relating to the implementation of the Programme of Action and the International Tracing Instrument, including trust fund arrangements; and
- for the establishment of programmes for the training of relevant officials, nominated by their respective Governments, in areas related to the implementation of the Programme of Action and the International Tracing Instrument;

53. States also requested the Secretariat to fulfil its mandate of the outcome document of BMS5 for carrying out a comprehensive study on the adequacy, effectiveness and sustainability of financial and technical assistance, including the transfer of technology and equipment, particularly to developing countries since 2001, for the full implementation of the Programme of Action, and to submit this study for consideration before the Sixth Biennial Meeting of States (2016). The Secretariat was asked to issue a note verbale to States requesting their inputs to these documents, and States were urged to submit such inputs in order to support the Secretariat in fulfilling its mandate.

Looking towards BMS6

54. At MGE2, States raised specific issues and suggested that these be taken up at BMS6. These issues included:

(a) Consideration of the need for further agreed guidance for marking polymer weapons; the marking, record-keeping and tracing of modular weapons; and strengthening 3D printing regulations in the context of 3D weapon printing, including further dialogue with Industry on the above issues;

(b) Consideration of enhancing the modalities related to international cooperation and assistance, including the transfer of technology;

(c) Consideration of an enhanced role for regional and subregional organizations in international cooperation and assistance and the exchange of information;

(d) Consideration of the further utility of national reports submitted on the Programme of Action and the International Tracing Instrument for the provision of information on matching needs with resources;

(e) Consideration of existing trust fund modalities for the full and effective implementation of the Programme of Action and the International Tracing Instrument, and whether the setting up of other trust funds is required.