

READY, SET, TRACE

Making Progress in Tracking Illegal Arms

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Tracing small arms and light weapons has been identified as an important component in reducing the illicit trafficking of weapons to regions of conflict as well as use in violent crime. At the national, regional and international levels policy makers and practitioners are working to make tracing more effective. This article outlines some of the key elements of an effective tracing regime and reviews where areas of agreement currently exist. It concludes with observations on some of the challenges facing countries as they try to implement these systems and respond to the problem of illicit arms trafficking.

Watch the television news most nights in South Africa and one will see a report of violent crime that has taken place, sometimes with a picture of the gun used in the crime lying on the ground. Stay tuned and images will come up of rebels in Liberia or Côte d'Ivoire hoisting automatic rifles over their heads. Most often the viewer is caught up in the story being told and the unfolding political events. However some people spend their time focusing on the weapons shown on the screen and wondering how that pistol ended up in Hillbrow or that AK-47 in Liberia.

Increasingly, politicians, policy-makers and law enforcement agencies are realising that if they focus on the weapons themselves and try to identify how certain weapons reach certain

destinations, it may be possible to choke the supply of small arms and light weapons to illegal destinations.

Initially this process, known as tracing, was used primarily by law enforcement agencies to identify the source or last known user of a firearm used in a violent crime in order to identify a suspect or build a case against a suspect.¹ More recently however, police agencies are realising that by tracing *all* weapons recovered² they can build a comprehensive database of information on the sources and destinations of these weapons.

The United States—the country with the highest number of firearms in the world (approximately 200 million)—has reported that more than 500,000 guns are stolen each year

from private homes and vehicles. Recognising that these guns could provide important information on the sources of illegal weapons, the Bureau of Alcohol, Tobacco and Firearms (BATF) started in 1996 to conduct traces on all recovered weapons. In 1999 the BATF received 150,000 requests for tracing from the various law enforcement agencies in the US, more than three times the number in 1993.³

The South African Police Service has recently completed a pilot tracing system, whereby the movement of firearms within the country were traced from the point where they were recovered (such as at a crime scene) back to their origin or point of sale.

In the United Kingdom, the National Crime Intelligence Service (NCIS) UK Threat Assessment for 2002 identified, for the first time, that the possession and use of firearms presents one of the most significant serious and organised crime threats facing the UK.⁴ The NCIS established the National Firearms Tracing Service to respond to the need for more accurate and reliable information on where weapons were coming from and how they were being used (historically police forces in the UK were not obliged to trace recovered firearms).

This increased focus on the utility of tracing firearms has yielded significant results in the US, where the available data has been analysed. Researchers have found that this data can be used by law enforcement agencies to improve their planning and identify and shut-down known sources of illegal acquisition; identify specific firearms dealers and traffickers; and provide a basis for evaluating changes in gun-control laws.⁵ The US research found that the origin of firearms used by criminals and youth could frequently be traced to registered dealers and not to firearms already in private possession.⁶

Tracing flows of weapons is also important to prevent weapons from reaching zones of conflict. The United Nations has established investigative panels to look into the ways in which weapons reach groups and countries under embargo. In the past five years, such panels have provided detailed information to the United Nations Security Council on the routes that weapons and ammunition have

taken to reach Liberia, Angola, the Great Lakes and most recently Somalia. By identifying the origins of these weapons and the people and companies involved in breaching arms embargoes, the spotlight is shone on the murky world of illicit gun running and slowly steps are being taken to restrict this trade.

Marking, tracing and record-keeping

What does tracing actually mean? Tracing refers to a comprehensive system that allows for the systematic tracking of one or more illicit weapons that have been found, from their source to the point at which they were diverted into the illicit market and ultimately to the person or group of persons who last possessed it. There are three key components needed for an effective system for small arms tracing:

- adequate marking;
- adequate record-keeping; and
- mechanisms enabling markings and records to be used to trace the origin and lines of supply of a firearm.⁷

Although awareness about the utility of tracing is growing among countries around the world, research to date and the experiences of police personnel suggest that there are a number of important weaknesses in existing practices in all three of these areas. These are elaborated below.

Marking

Adequate marking refers to a system that allows each small arm to be uniquely identifiable, including the serial number, the name of the manufacturer, the place and country of manufacture, date of manufacture, the date of import, model and calibre. There is presently considerable variation in the kind of information marked on small arms and light weapons and the form such information takes. Divergent marking practices hamper the identification of weapons, especially if they are recovered outside the country of manufacture, as officials abroad may lack the knowledge and/or expertise needed to interpret relevant markings (China marks some weapons with a figure resembling a triangle, which makes identifying the manufacturer very difficult for those outside China).

Some of the weaknesses in current marking systems include the following:

- markings, and especially serial numbers are not unique;
- duplicates of the same serial number can be found on same type of firearm if these are manufactured in different countries under the same license;
- some manufacturers periodically reset their numbering system;
- markings such as serial numbers are not indelible and can be removed or falsified;
- markings may be difficult to read and/or understand;
- the placement of marks varies making identification more time-consuming;
- manufacturers, in the main, can decide on the type of marking they put on their firearms;
- manufacturers continue to produce unmarked or inadequately marked weapons; and
- markings do not identify the country of manufacture or the factory that produced them, making tracing more complicated.

The marking of ammunition represents another weakness in tracing. Often the underside or the back of ammunition shells has the initials of the manufacturer and calibre engraved or painted. However, these markings alone are not sufficient to trace the ammunition's origin or path and only the type of ammunition can be identified.⁸ Including batch or lot numbers would be one way of improving the tracing of ammunition.

Improving reliability

There are several possible approaches to improving the reliability of markings. The location and visibility of the markings are important factors, as well as the technologies used. If the weapon is marked in several places, the task of removing the marking is increased, and the prospects of being able to recover the marks are improved. If the visible marks on a weapon are supplemented with invisible marks that can only be detected with specialist knowledge and equipment, the weapons is likely to remain traceable even after determined attempts to remove the visible markings. Also, markings that penetrate the weapon are obviously partic-

ularly difficult to remove: for example a technique of marking a weapon with tiny holes using lasers now appears feasible and reasonably cost-effective.⁹ Ideally, weapons could be marked in such a way that attempts to remove the markings would cause irreparable damage to the weapon.

The form that the information takes is equally disparate. Alphanumeric codes used alone are the preferred method but are also used in combination with symbols. In some cases, a single code that contains all of the information marked on, and unique to, the specific item is chosen. In other cases, separate alphanumeric codes or identifiers, located on different parts of the weapon, and which have to be read in combination in order to uniquely identify the weapon is used.

A sample serial number could look like this:

ZA195812340000001MAU

Country Code, e.g. ZA = South Africa

Year of Manufacture = 1958

Manufacturer or factory code,

e.g.1234 = Smith Pty Ltd

Serial number, e.g. 00000001

Country of Destination/Import,

e.g. Mau = Mauritius

Marking techniques

A variety of marking techniques are used, including engraving, casting, stamping/punching, and etching. Technologically advanced techniques are also being considered, including laser etching and embedded microchips that contain all the relevant information about the firearm.

Because one of the biggest hindrances in tracing weapons is the lack of adequate markings, the choice of marking technique needs to be evaluated by how easily it can be removed. Stamping is now widely used since it is simple and inexpensive and is more resistant to removal than etching and engraving.

The role of Industry

Co-operation with the manufacturing industry is a crucial component in improving marking. In countries with significant small arms

production, such as South Africa, industry plays an essential role in effective marking and record-keeping, and may serve, in addition, as an important repository of expertise (for example in weapons identification and marking techniques).

Record-keeping

Attempts to trace a fully and uniquely marked weapon are frequently frustrated by inadequate record keeping. Ensuring adequate, unique marking of each small arm means little unless records are kept that systematically identify each weapon and track the key elements of its history, including its production, distribution, and transfer.¹⁰ The need for adequate record keeping refers to the need for reliable and accessible records for each weapon at the each stage of its existence (manufacture, distribution, transfer, possession, storage and eventual, if and when necessary, destruction).

As with marking, existing record-keeping systems for small arms vary enormously.

Records are often widely dispersed and time-consuming to access. Countries differ in the types of information they require to be kept, and in some cases ambiguous and vague rules exacerbate this difficulty. In many countries, the records are maintained by the companies involved rather than in a central register, and are sometimes disorganised or lost after changes of location, ownership or bankruptcy. Records kept by dealers or local authorities of sales or changes of ownership of small arms are often less adequate than the production records of the manufacturer.

An effective system is one that is consistently reliable and responsive. Law enforcement officials usually face acute time constraints in their pursuit of specific criminal investigations. They need to have reasonable confidence that weapons traces will be satisfactorily completed within the typical lifespan of an active investigation before they will give them much attention. It should be borne in mind that tracing is not a system for transparency. It is only the requesting state and the receiving or responding state that normally has access to the particular record requested.¹¹

Centralization of records

A key issue in the area of record keeping is the extent to which records are centralized. In many countries record keeping is often decentralized, despite the obvious advantages that centralization offers in terms of facilitating timely access to relevant records. In South Africa, a centralized system is kept, and this appears to be the trend in Southern Africa generally.

Speed of access

Speed of access is important in order to trace a weapon in sufficient time that resulting information can actually be used. This depends on how records are kept. This issue is normally couched in terms of whether the system has moved from a manual (card) operation to a computerized one. However, ease of access to records is key and manual systems can be established that are both easy to use and efficient. More important for tracing operations to succeed, is the need for law enforcement officials to have timely access to privately held records (manufacturers, dealers) if these are not also held by a government agency.

Life-span of a record

Another issue is the length of time that records are held. It should be borne in mind that the life span of most small arms can extend over many decades. For example, in Mozambique, where the conflict ended more than 10 years ago, 90 percent of the arms found in caches are in working order.

Integrity of data

The accuracy of records is also important. Misidentification of weapons is an especially common error. Small errors in the description of a weapon can result in delays or the complete failure of the trace. Validation of information when initially entered into relevant databases helps minimize mistakes. Like all databases the integrity of the data needs to be ensured through checks and controls and appropriate monitoring and auditing systems should be put in place. Licences authorizing the manufacture of small arms should contain obligations to maintain comprehensive records that would be subject to verification/auditing procedures.

Weapons in Storage

There is little doubt that there is a need to ensure that every firearm that is manufactured or released into circulation is adequately and reliably marked and recorded and can be traced. However, a further issue that needs to be tackled is that of existing weapons. Many existing small arms in government stocks or authorised holdings are inadequately marked. Measures need to be taken to promote actions to mark these weapons, so that they are traceable if they are misused, lost, stolen or transferred. Admittedly, the scale of the task could be large. But, one could for example, prioritise weapons that are more vulnerable to theft or diversion, for example those in active use, than weapons held in long-term storage.

Tracing

A basic norm in relation to tracing has been broadly agreed (see next section). This states that every country should ensure that it co-operates in efforts to trace lines of supply of weapons that contribute to excessive and destabilising accumulations and flows of small arms. Tracing includes those mechanisms that enable authorities to use marking and records to trace the origin and lines of supply of small arms in a timely and reliable manner.

What is therefore needed is a system whereby:

- information can be exchanged across national boundaries;
- mutual acknowledgement of original marking systems;
- a particular agency is responsible for sending and receiving and responding to requests; and
- there are regulations that require manufacturers, exporters and importers to regularly submit their records to the national government.

Tracing occurs at both a national level and at the international or regional levels. Many illicit arms originate in another country and arrive through transnational trafficking routes. International and regional marking, record keeping and tracing co-operation is thus essential. What is therefore now needed is for countries to further commit themselves to

respond promptly and accurately to requests from other appropriate authorities to assist them in their efforts to trace sources and lines of supply of weapons of concern, and to ensure that mechanisms that facilitate this are established.

Systematic tracing brings benefits that may extend well beyond a specific investigation, allowing for the identification of patterns and trends in the sources and lines of supply of illicit weapons. This broader, crime prevention, function of tracing can be significantly enhanced where law enforcement data extrinsic to the weapon itself is gathered and shared. Such extrinsic data can include firearms recovery location, type of crime committed, possessor, associates and dealers.

Building on commitments

At the international, regional and sub-regional levels, countries in Africa, and Southern Africa specifically, have agreed to many of the principles that will allow more effective tracing to take place.

International awareness of the need to take measures to enhance traceability of firearms and small arms and light weapons (SALW) developed rapidly in the late 1990s. Prominent amongst these are: the 1999 Report by the UN Group of Governmental Experts on Small Arms; negotiations and adoption of a UN Firearms Protocol; regional agreements amongst members of the Organisation of American States (OAS), the Organisation for Security and Co-operation in Europe (OSCE), and between members of the Southern Africa Development Community (SADC).

The UN General Assembly has established a Group of Governmental Experts on Tracing Illicit Small Arms and Light Weapons (GGE). In seeking to define the scope of its task with the necessary precision, the GGE is examining the main components of tracing, namely marking, record keeping, and international co-operation, and their respective technical and political dimensions, in the context of both combating crime and conflict and post-conflict situations. The second session of the GGE took place from 24 to 28 March 2003 in Geneva and the third session will be from 2 to

6 June 2003 in New York. Following this meeting the GGE will submit a report to the 58th Session of the UNGA with a recommendation on whether or not it is feasible to negotiate an international treaty on tracing to improve international cooperation.

The various protocols and declarations that exist either oblige (legally bind) countries to implement provisions or make recommendations (politically bind). These documents differ in terms of the context in which they were developed and thus their scope, definitions and status varies.

The UN Protocol

Core to the UN Firearms Protocol is the legally binding agreement to an international standard for marking firearms at the point of manufacture and at the point of import to assist in tracing and criminal investigations relating to crimes committed with firearms. The Protocol defines tracing as “the systematic tracking of firearms and, where possible, their parts and components and ammunition from manufacturer to purchaser for the purpose of assisting the competent authorities of States Parties in detecting, investigating and analysing illicit manufacturing and illicit trafficking.”¹²

The UN Protocol requires that records should be kept for not less than ten years with “information on firearms and, where appropriate and feasible, their parts and components and ammunition that is necessary to trace and identify those firearms and, where appropriate and feasible, their parts and components and ammunition which are illicitly manufactured or trafficked and to prevent and detect such activities.”¹³

The UN Protocol requires the following in terms of marking:¹⁴

States Parties shall:

(a) At the time of manufacture of each firearm, either require unique marking providing the name of the manufacturer, the country or place of manufacture and the serial number, or maintain any alternative unique user-friendly marking with simple geometric symbols in combination with a numeric and/or alphanumeric

code, permitting ready identification by all States of the country of manufacture;

(b) Require appropriate simple marking on each imported firearm, permitting identification of the country of import and, where possible, the year of import and enabling the competent authorities of that country to trace the firearm, and a unique marking, if the firearm does not bear such a marking. The requirements of this subparagraph need not be applied to temporary imports of firearms for verifiable lawful purposes;

(c) Ensure, at the time of transfer of a firearm from government stocks to permanent civilian use, the appropriate unique marking permitting identification by all States Parties of the transferring country.

2. States Parties shall encourage the firearms manufacturing industry to develop measures against the removal or alteration of markings.

To date, the UN Protocol has been signed by 52 countries and ratified by three. Two of the three ratifications are from Africa: Mali and Burkina Faso.

The SADC Protocol

The Southern African Development Community (SADC)¹⁵ adopted a Protocol on the Control of Firearms, Ammunition and Other Relation Materials in August 2001. The Protocol has been ratified by seven countries and requires another two ratifications before it enters into force.

The states of southern Africa realised in the mid-1990s that in order to combat the proliferation of weapons in the sub-region an approach emphasising cooperation and coordination among countries was necessary. This recognition stemmed from the understanding of the linkages between the illicit trafficking in small arms and in other illegal commodities—including drugs, vehicles, precious metals and endangered species. It also grew out of the understanding that smuggling routes for weapons spanned the sub-region. The SADC Protocol is one of the strongest tangible results.

In terms of its marking obligations it is quite similar to the UN Firearms Protocol. "State Parties undertake to establish agreed systems to ensure that all firearms are marked with a unique number, at the time of manufacture or import, on the barrel frame and, where applicable, the slide and undertake to keep proper records of the markings."¹⁶

However, it goes quite a bit further with respect to the number and location of marks and in terms of the obligations for record keeping. It also reinforces the global standard on tracing.

As part of its plan of implementation of the SADC Firearms Protocol, the Southern African Regional Police Chiefs Cooperation Organisation (SARPPCO) has been assisting the SADC Secretariat in operationalising certain provisions of the Protocol through workshops and expert meetings. A workshop on marking, tracing and the disposal of state-owned firearms was held in April 2003. The workshop adopted recommendations to assist with implementation of marking and tracing measures, including the need for detailed procedures and training for countries in the sub-region.

The UN Programme of Action

The first UN Small Arms Conference adopted the UN Programme of Action in July 2001. Among its many provisions, it includes specific commitments on marking. Participating States have agreed to:

- Ensure that henceforth-licensed manufacturers apply an appropriate and reliable marking on each small arm and light weapon as an integral part of the production process. This marking should be unique and should identify the country of manufacture and also provide information that enables the national authorities of that country to identify the manufacturer and serial number, so that the authorities concerned can identify and trace each weapon.¹⁷
- Adopt where they do not exist and enforce, all the necessary measures to prevent the manufacture, stockpiling, transfer and possession of any unmarked or inadequately

marked small arms and light weapons.¹⁸

- Participating States were further encouraged to: Exchange information on a voluntary basis on their national marking systems on small arms and light weapons.¹⁹
- The first meeting of states to review the implementation of the UN Programme of Action will take place in July 2003. At this stage, countries will report on steps they have taken to implement provisions of the Programme of Action. A first review conference will be held in 2006.

Conclusion

As more countries witness the utility of using firearms tracing to improve their own efforts to combat illegal weapons, the impetus for sub-regional and international responses will grow.

To a large degree there is a common acceptance of the requirements for effective tracing, including marking, record-keeping and international cooperation. However, many of the implementation details remain up to national interpretation and action. Within Africa the capacity of countries to implement tracing systems remains largely untested and an important recommendation of the recent Southern African workshop on marking and tracing was the need to identify national requirements for capacity building and resources.

In addition, for countries such as South Africa that produce weapons, discussions need to take place with manufacturers to identify how the manufacturing process can work so that it facilitates any eventual tracing requirement.

Notes

1. U.S. Bureau of Alcohol, Tobacco, and Firearms, U.S. Department of the Treasury, *Gun Dealer Licensing and Illegal Gun Trafficking*, 1997.
2. For example, a firearm may be confiscated by the police for illegal possession or may be recovered during a raid on premises where no known violent crime has occurred.
3. P Cook and A Braga, *Comprehensive Firearms Tracing: Strategic and Investigate Uses of New Data on Firearms Markets*, Terry Sandford Institute of Public Policy, Duke University, Working Paper Series

- SAN01-11, February 2001, p. 3.
4. National Crime Intelligence Service, *The National Firearms Tracing Service – the NCIS response to firearms related crime*, 7 January 2003, www.ncis.co.uk/briefing/070102.asp.
 5. P Cook and A Braga, op cit., p. 4. This last point is especially relevant for South Africa, which will soon be implementing its new Firearms Control Act.
 6. P Cook and A Braga, op cit., p. 15
 7. BASIC, International Alert & Saferworld, *Enhancing Traceability of Small Arms and Light Weapons Flows*, 2000.
 8. Groupe de recherche et d'information sur la paix et la sécurité (GRIP), *Marking and Tracing Small Arms and Light Weapons: Improving transparency and control*, 2002.
 9. Ibid.
 10. United Nations Institute for Disarmament Research, *The Scope and Implications of a Tracing Mechanism for Small Arms and Light Weapons*, Geneva, 2003.
 11. United Nations General Assembly, *Protocol Against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the United Nations Convention against Transnational Organised Crime*, UN, New York, A/55/255, 8 June 2001, Article 15, paragraph 5.
 12. UN Protocol, op cit., Article 3.
 13. Ibid, Article 7.
 14. Ibid, Article 8.
 15. The fourteen member countries of SADC are: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe.
 16. Southern African Development Community, *Protocol on the Control of Firearms, Ammunition and Other Relation Materials in the Southern African Development Community*, SADC, Gaborone, 21 August 2001, Article 9.
 17. United Nations, Report of the United Nations Conference on the Illicit Trade in Small Arms and Light Weapons in All Its Aspects, UN, New York, A/CONF.192/15, Chapter II, paragraph 7.
 18. Ibid, Chapter II, paragraph 8.
 19. Ibid, Chapter III, paragraph 12.