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WEAPONS
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Research Notes

Documenting Weapons in Situations of Armed Conflict

Methods and Trends

The proliferation and misuse of small arms, light weapons, and their associated ammunition in situations of armed conflict have been important concerns for the international community for the last 20 years (see, for example, UN, 1995, paras. 62–63). Yet it is only more recently that specific knowledge about the models and origins of the small arms circulating in conflict zones has emerged. Thanks to the work of a multitude of actors who make their findings public, a wealth of data is now available for analysis. Based on several chapters of the last three Small Arms Survey yearbooks and additional sources, this Research Note reviews some of the methods and sources employed by Survey researchers and consultants to document weapons and ammunition in situations of armed conflict, and highlights the main patterns emerging from this research.

Initially it is important to note that the producing countries identified below are not necessarily responsible for transferring the arms and ammunition in question directly to conflict zones. Indeed, producers may have exported materiel legally to these or other countries before it was retransferred without their knowledge, or diverted to non-state armed groups or illicit markets. Information on producers is nevertheless important in generating a baseline for the armaments in circulation, which in turn may facilitate the identification of unusual or new flows over time and across borders. Moreover, identifying producers is often a necessary first step in establishing the full chain of custody of weapons transfers to areas affected by conflict.

Methods and sources

Processing data collected in the field

A primary technique used to document and analyse weapons in conflict environments relies on field investigation, during which the physical characteristics and markings of observed arms and ammunition are recorded and photographic evidence is assembled. While UN Panels of Experts to a great extent initiated this practice, a growing number of actors, including research organizations, NGOs, investigators, and war reporters, now routinely document war materiel captured or abandoned

on battlefields, held by combatants, or found in stockpiles.

The accurate identification of a weapon or munition necessitates the precise recording of its physical characteristics, markings, and dimensions. When available, packaging and shipping documents also provide valuable information. No single reference book exists for the identification of all small arms and ammunition; rather, networks of researchers with specialized expertise in specific families of weaponry share knowledge and assist each other in the identification process. In addition to the exact type or model, researchers will generally seek to establish the exact production facility where the materiel was manufactured, its date of manufacture, and any information about its chain of custody. Once the materiel is identified, this information can be processed for further analysis, typically using one or several of the steps discussed below.

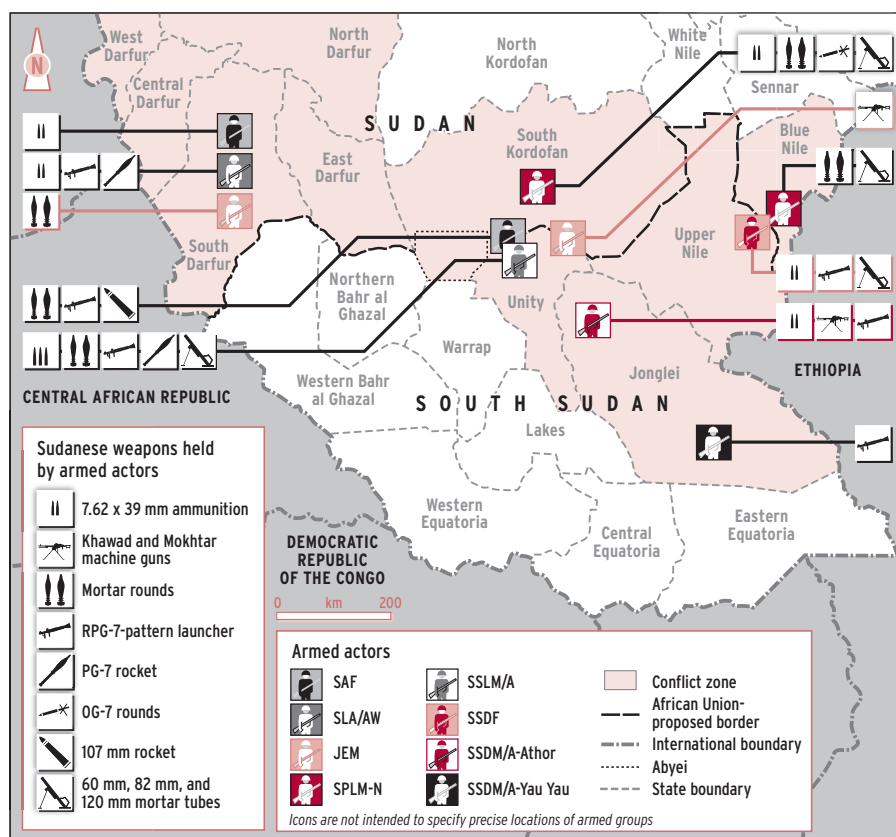
Profiling

Profiles are researchers' compilations of all available information on the various identified types of weapons and ammunition circulating in a particular location. Profiles of small-calibre ammunition, for instance, typically involve recording into a database the calibre, production facility (including country of manufacture), and year of manufacture of all cartridges found in a particular conflict zone or region (see Bevan, 2008; Florquin and Leff, 2014; Jenzen-Jones, 2013). This makes it possible to generate a baseline for the equipment in circulation that will form the basis for further analysis.

Mapping

Mapping involves the cross-referencing and analysis of separate samples of arms and ammunition, in order to identify common patterns in holdings and procurement across different actors in conflict areas (see Map 1). While it relies on datasets that can be similar to those established for profiling, these datasets generally contain more detailed information about the identity of the groups holding the weapons and the precise location where these weapons were found. Over time it becomes possible to draw conclusions about the chain of custody of particular materiel shared by distinct armed organizations.

Map 1 Sudanese weapons identified among armed actors, Sudan and South Sudan, 2011-13



Source: LeBrun and Leff (2014, p. 231)

Tracing

The UN defines tracing as the

systematic tracking of illicit small arms and light weapons found or seized on the territory of a State from the point of manufacture or the point of importation through the lines of supply to the point at which they became illicit (UNGA, 2005, para. 5).

With the cooperation of the states that manufactured and imported the weapons, tracing involves tracking changes in ownership through available records. The ultimate—but often elusive—goal of weapons tracing is to identify the point in the transfer chain at which the weapon entered the illicit market.

Government databases

Official government records of firearms and ammunition seized in situations of armed conflict represent a vastly underutilized, yet rich source of information on conflict weapons. The existence of these datasets is often not well known or advertised: accessing them requires querying the appropriate government agencies as to the type of information

that is available and then making an official request, sometimes through ‘Freedom of Information’ mechanisms. As part of its multi-year project on illicit weapons, for instance, the Survey collected and analysed data on 80,000 illicit small arms and light weapons in Afghanistan, Iraq, and Somalia. The datasets included hundreds of previously unreleased records obtained from the Australian, British, and US governments. Many of the records were extremely detailed and some included photographs of the seized weapons (see Figure 1). They typically specified contextual information such as the date, time, and location of the seizure, while also identifying the model, country of origin, and—in some cases—condition of the seized weapons.

Figure 1 Gripstock for Chinese QW-1 MANPADS seized in Iraq



Source: US military photos

Illicit-market-price monitoring

Journalists and researchers regularly report on the prices of illicit firearms in situations of armed conflict. These illicit markets can be the ‘open-air’ type, as has been the case at various times in Pakistan’s Federally Administered Tribal Areas and Somalia’s Bakaara market in Mogadishu, or they can be more clandestine. While challenging, sometimes these illicit markets can be monitored quite systematically, making it possible not only to obtain an overview of the types of materiel in circulation, but also to study the price differentials among different types of weapons and ammunition, as well as price fluctuations over time. The resulting datasets often shed light on broader trafficking dynamics, including the prevailing supply and demand factors that influence these prices.

Trends

Using the above methods and sources, the Small Arms Survey has paid particular attention to documenting conflict weapons and ammunition in recent years. While findings always need to be placed in their geographical context, a number of common trends have emerged that appear to be highly policy relevant.

The continuing use of old stocks

In a number of conflict zones, weapons and ammunition designed, manufactured, and distributed decades earlier—specifically in the context of cold war proxy arming—are often still in frequent use. A review of arms caches recovered in Afghanistan, Iraq, and Somalia revealed that the vast majority of seized small arms were Kalashnikov-pattern rifles and foreign variants—the same pattern of rifles that have been used by governments and armed

groups in these countries for decades (Schroeder and King, 2012, p. 314). Similarly, armed groups in Afghanistan and Iraq appear to have acquired very few technologically sophisticated or latest-generation light weapons. Perhaps more surprising, given its consumable nature, small-calibre ammunition produced during the cold war is still circulating widely. A review of 560 samples of such ammunition documented since 2010 in seven conflict zones of Africa and Syria found that more than half of the identified types of ammunition were produced before 1990 (Florquin and Leff, 2014, p. 189). Moreover, the age of small-calibre ammunition does not appear to greatly affect its price on the illicit markets of Lebanon, Pakistan, and Somalia (Florquin, 2013, p. 263). Taken together, the continued circulation of and demand for old weapons and ammunition illustrate the importance of initiatives to secure aging surpluses of stockpiled military equipment to prevent their diversion to conflict zones.

New gear; more diverse producers

While old materiel circulating in areas experiencing conflict is often identified as manufactured in China and former Eastern Bloc countries, this picture tends to change when examining weapons and ammunition produced more recently. Iranian weapons of recent manufacture circulate in Iraq (Schroeder and King, 2012, p. 314), and cartridges produced in Iran since 2000 were found in a number of recent conflicts, including in Côte d'Ivoire, South Sudan, Sudan, and Syria (Florquin and Leff, 2014, p. 194). Sudan is another major manufacturer of newly produced ammunition found in conflict zones. Among the 29 samples of ammunition produced in 2010, 2011, and 2012 and documented in the context of seven recent or ongoing conflicts in Africa and Syria, most were manufactured in China (12 samples) and Sudan (also 12 samples) (Florquin and Leff, 2014, p. 194). Recently manufactured Sudanese ammunition has been repeatedly documented in service among a variety of armed groups in Sudan and South Sudan (LeBrun and Leff, 2014, pp. 231-35). Overall, recent data

reveals an increasingly diverse range of conflict weapons and ammunition than were previously thought to be in circulation.

Local sourcing









Research suggests that the parties to a variety of recent conflicts tend to rely primarily on regional and local sources of arms and ammunition. The vast majority of illicit arms shipments to Somalia recorded by the UN Monitoring Group on Somalia and Eritrea for the period May 2004–November 2008 originated in neighbouring countries, especially Eritrea, Ethiopia, and Yemen (Schroeder and King, 2012, p. 344). Sudanese government stockpiles are the primary source of weapons for non-state armed groups of all allegiances in South Sudan and Sudan, through deliberate arming and battlefield capture (LeBrun and Leff, 2014, p. 213). A variety of types of domestically produced small arms ammunition

are also used in Sudan and Syria (Florquin and Leff, 2014, p. 191). Lastly, armed groups across regions rely on craft-produced weapons, including a variety of small arms, hand grenades, grenade launchers, and rocket launchers, as the Survey has documented in Afghanistan, Iraq, and the Philippines (Schroeder, 2013, p. 311; 2014). Perhaps the deadliest craft-produced light weapon is the improvised explosive device (IED). In Iraq, for example, IEDs accounted for most of the casualties suffered by US troops from 2003 to early 2012 (Binnie and Wright, 2013; Schroeder and King, 2012, p. 326).

Concealed supply patterns

While the physical characteristics of unmarked weapons and ammunition can sometimes suffice to identify the country where they were produced, the absence of markings on such items typically makes this task more difficult. Investigators working for the Survey's

Table 1 Case head photos and key characteristics of samples of unmarked ammunition

Ammunition characteristics	Calibre	Country or territory where documented	Case head photos
Brass cartridge case and red primer sealant	7.62 x 39 mm	Somalia	 © Small Arms Survey
		South Sudan	 © Small Arms Survey
		Sudan	 © Small Arms Survey
Copper-clad steel cartridge case with unevenly applied red primer sealant and yellow neck sealant	7.62 x 54R mm	Côte d'Ivoire	 © Holger Anders/UNOCI
		South Sudan	 © Small Arms Survey
Brass cartridge case and red primer sealant	7.62 x 54R mm	Somalia	 © Small Arms Survey
		South Sudan	 © Small Arms Survey
Brass cartridge case and red primer sealant	7.62 x 51 mm	Somaliland	 © Small Arms Survey
Brass cartridge case with green primer sealant and three-square-stake primer crimp	7.62 x 51 mm	Syria	 © C.J. Chivers (New York Times)

Source: Florquin and Leff (2014, p. 205)

Human Security Baseline Assessment project have documented an increasing number of weapons held by rebels in South Sudan whose markings (serial numbers and other factory markings) had been removed (LeBrun and Leff, 2014, p. 221). The fact that a weapon's markings have been intentionally removed is itself a clear red flag—evidence that at least one party found it necessary to obscure the weapon's identifying features, presumably to prevent tracing. In other cases, ammunition recovered in conflict zones had never been marked, meaning that no information was stamped onto the head of the cartridge, where a head-stamp would normally appear. Survey research has uncovered examples of unmarked small arms ammunition in six conflict zones (see Table 1; Florquin and Leff, 2014, pp. 204–07). The systematic recording of information on unmarked weapons and ammunition, including their packaging, nevertheless helps to reveal important patterns over time and can ultimately lead to the identification of their origins (see LeBrun and Leff, 2014, p. 221; Florquin and Leff, 2014, p. 205).

Conclusion

The monitoring of conflict weapons and ammunition has become a dynamic field of research involving an increasing variety of investigators, research methods, and sources. It has already brought a more nuanced understanding of the types and origins of small arms and ammunition used in recent armed conflicts, making it easier to identify new destabilizing flows. Yet, as researchers and investigators are perfecting their research techniques, it also appears that the actors involved in illicit trafficking are trying to cover their tracks. While this could potentially hamper arms monitoring, precise reporting by and improved information sharing among researchers can be expected to continue to improve our understanding of illicit arms flows in conflict zones. The more systematic collaboration of producing states in identifying authorized end users and initiatives to improve the marking and record keeping of stockpiled weapons and to identify and destroy surpluses are among the critical policies that hold promise for preventing the diversion of more materiel to conflict zones. ■

Sourcing

This Research Note is based on Schroeder and King (2012), Schroeder (2013), Florquin and Leff (2014) and LeBrun and Leff (2014).

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For more information about weapons tracing, please visit: <www.smallarmssurvey.org/?marking-record-keeping-tracing.html> and <www.smallarmssurvey.org/?illicit-trafficking.html>

About the Small Arms Survey

The Small Arms Survey serves as the principal international source of public information on all aspects of small arms and armed violence, and as a resource centre for governments, policy-makers, researchers, and activists. In addition to Research Notes, the Survey distributes its findings through Occasional Papers, Special Reports, Working Papers, Issue Briefs, a Book Series, and its annual flagship publication, the *Small Arms Survey*.

The project has an international staff with expertise in security studies, political science, international public policy, law, economics, development studies, conflict resolution, sociology, and criminology, and works closely with a worldwide network of researchers and partners.

The Small Arms Survey is a project of the Graduate Institute of International and Development Studies, Geneva. For more information, please visit:

www.smallarmssurvey.org

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