

# FROM LEGAL TO LETHAL

## Converted Firearms in Europe

Nicolas Florquin and Benjamin King



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Cover photo: Unconverted Ekol Special 99 with a barrel occlusion still in place, at the Swedish National Forensics Centre. Source: Glenn Lawrence/Arquebus Solutions

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# List of abbreviations

<b>AEW</b>	Acoustic expansion weapon
<b>ATF</b>	US Bureau of Alcohol, Tobacco, Firearms and Explosives
<b>CIP</b>	Permanent International Commission for the Proof of Small Arms
<b>ENFSI</b>	European Network of Forensic Science Institutes
<b>EMPACT</b>	European Multidisciplinary Platform Against Criminal Threats
<b>EU</b>	European Union
<b>EUR</b>	Euro
<b>FNIB</b>	Fichier national d'identification balistique (France)
<b>GBP</b>	British pound
<b>IFFS</b>	Interpol Firearms Forensics Symposium
<b>IRCGN</b>	Institut de recherche criminelle de la gendarmerie nationale (France)
<b>NABIS</b>	National Ballistics Intelligence Service (UK)
<b>OSCE</b>	Organization for Security and Co-operation in Europe
<b>RCMP</b>	Royal Canadian Mounted Police
<b>SAFTE</b>	Studying the Acquisition of Illicit Firearms by Terrorists in Europe
<b>SCAEMS</b>	Section centrale armes, explosifs et matières sensibles (France)
<b>UK</b>	United Kingdom
<b>UN</b>	United Nations
<b>US</b>	United States
<b>USD</b>	United States dollar



# Executive summary

Firearms conversion is a challenge in all European countries. While the phenomenon may be more visible in countries with the strictest gun laws, ease of access to converted firearms and their cheap prices make them attractive alternatives to lethal-purpose firearms in all corners of Europe. Converted firearms are also challenging to investigate, which reinforces their appeal among criminals.

Converted firearms include imitation guns such as alarm weapons and deactivated firearms that have been modified to function as real, lethal-purpose weapons. Basic engineering skills, available workshop space, and commonly used tools are often all that is required to perform some conversions. Petty criminals are generally the primary users of converted alarm weapons, while organized crime groups and terrorist actors have used both reactivated firearms and converted acoustic expansion weapons. There is, however, a growing concern that organized crime and terrorist actors might increasingly resort to converted alarm weapons.

Strengthened European Union regulations and coordinated law enforcement operations have succeeded in reducing some specific sources of converted firearms. Yet the efforts of regulators and law enforcement agencies to counter firearms conversions have been mainly reactive. Real-time firearms-related crime intelligence and data sharing are critical to preventing, detecting, and rapidly tackling fluid firearms conversion patterns.

In this report, the Small Arms Survey undertakes a detailed examination of the firearms conversion challenge in Europe. More specifically, the report provides a typology of converted firearms, examines the nature and scope of the firearms conversion threat, reviews the mechanics of trafficking in converted firearms, and assesses the European response to this issue. Research for this report drew from consultations and interviews with a broad range of law enforcement actors in Europe, with particular focus on firearms investigators and forensic experts.

## Key findings

- Current record-keeping systems and statistics in Europe often do not allow meaningful analysis of firearms conversion trends and early warning of new threats.
- While converted firearms in Europe include a range of items, two main types of readily convertible firearms have been fed into the illicit arms market in recent years: Slovak-origin acoustic expansion weapons (AEWs) and Turkish-manufactured alarm handguns.
- The actors involved in the conversion process are not limited to well-organized crime groups, but also include individuals who self-train, for instance, by using instructions that are available online.
- Recent European Union (EU) regulations—including the 2015 deactivation standards (revised in 2018) and the 2017 amendment to the Firearms Directive—have the potential to make the reactivation of deactivated firearms more difficult and to greatly reduce demand for AEWs.
- Surplus government weapons that were deactivated or modified for the civilian market have represented an important source of convertible firearms in recent years. Promoting policies that favour the destruction of these surpluses rather than their sale would help to prevent the emergence of future conversion pipelines.
- In the absence of regional standards for manufacturing alarm weapons, a variety of readily convertible models have proliferated since the beginning of the century. The European Commission is due to adopt such standards in 2018.
- Efforts to curtail conversion pipelines are often confronted with new emerging sources, as illustrated by recent trafficking in firearms designed or modified to fire small-calibre ‘Flobert’ ammunition.
- The speedy and universal implementation of existing and new European standards and regulations, and the reinforcement of dialogue and cooperation with manufacturers, retailers, and customs officials, are among the priorities identified by the law enforcement community for tackling the threat of converted firearms.
- Due to the technical diversity of converted firearms, the forensics and ballistics community can play a meaningful role in countering their proliferation if it is given the means to more systematically analyse recovered illicit firearms and support related investigations.



The multiple and deadly terrorist attacks involving the use of firearms that have taken place since 2015 underscore the urgency of tackling the problem of illicit firearms in Europe.”

## Introduction

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The multiple and deadly terrorist attacks involving the use of firearms that have taken place since 2015 underscore the urgency of tackling the problem of illicit firearms in Europe. While limited, the available information suggests that criminal and terrorist networks on the continent obtain firearms from two major sources: weapons trafficked from South-east Europe following the Yugoslav wars of the 1990s, and the more recent trade in converted firearms, some of which originate in EU member states. As Europol notes in its 2017 serious and organized crime threat assessment, ‘The reactivation of deactivated weapons and conversion of blank-firing firearms are among the main sources of illegal firearms trafficked in the EU’ (Europol, 2017C, p. 54).

Converted firearms include imitation guns and deactivated firearms that have been modified to function as real, lethal-purpose weapons. They are often cheap, readily available, and difficult to trace—characteristics that make them attractive to criminals. Despite growing political concern over the issue, little publicly available data and analysis are available on the proliferation and criminal use of converted weapons in Europe.<sup>1</sup> Yet stopping the proliferation of these weapons requires a robust understanding of the firearms models, patterns of supply, and sources of weapons being used.

To fill this gap, and with support from the Governments of France and Germany, the Small Arms Survey undertook a detailed examination of the firearms conversion challenge in Europe. In particular, this report aims to:

- determine the types, makes, models, and calibres of the most frequently used converted firearms;
- review historical and recent trends in firearms conversion, including its technical characteristics, geographical distribution, and the actors involved; and
- identify policy challenges and opportunities to counter the proliferation of converted firearms.

The sources used to compile the report primarily involved obtaining data from, interviewing, and engaging with European law enforcement officials, and in particular firearms forensic experts. The research focused on this specialized community with a view to accessing the most reliable and detailed information on the subject. Most notably, on 29 June 2017, and in partnership with EMPACT (European Multidisciplinary Platform Against Criminal Threats) Firearms, the Survey hosted and organized a technical workshop on the proliferation of converted firearms in Europe. Twenty-nine participants, mostly firearms investigators and forensic specialists representing 11 countries and various institutions, actively participated in and contributed to the event.<sup>2</sup> The authors further participated in specialized meetings of firearms forensic expert networks,<sup>3</sup> and undertook country visits to Austria, France, Germany, Romania, Spain, and the United Kingdom in 2017. Lastly, the project benefited from the Survey’s participation in other

European Commission-funded initiatives, such as the Studying the Acquisition of Illicit Firearms by Terrorists in Europe (SAFTE) project,<sup>4</sup> the relevant findings of which are integrated into this report.

The report is divided into four sections. The first section reviews definitions and offers a typology of readily convertible firearms. The second section examines the nature and scope of the firearms conversion threat. It includes a historical review of firearms conversion in Europe, a discussion of available indicators to measure the scale of the phenomenon, and an analysis of the types of crime involving these weapons. The third section reviews the mechanics of conversion, most notably the geographical distribution of conversion workshops, the profile of converters, and the main smuggling techniques that are used. The last section focuses on Europe-wide responses to this issue, including changes in the regulatory environment and enforcement measures. The report concludes with a summary of policy-oriented challenges and opportunities for the attention of policy-makers. ●

# Definitions of converted firearms

Converted firearms refer to modifications of objects that are incapable of firing a projectile, to ones capable of doing so.

## Alteration of originally non-lethal purposed imitation firearms



Non-lethal purposed firearms

Conversion

Lethal imitation firearms

## Reactivation of firearms that had been previously modified not to fire live ammunition



Lethal firearms

Deactivation

Unable to fire live ammunition

Reactivation

Lethal firearms

### Key

- Legal firearm
- Illegal firearm
- ! Able to fire solid projectiles
- × Not able to fire solid projectiles



Diverse objects in Europe  
have been converted into firearms  
without the need for specialized  
skills or equipment.”

## Definitions

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## Firearms conversion

In 2014 the Small Arms Survey asked a group of firearms investigators from a sample of countries from around the world about their conception and use of the term ‘firearms conversion’.<sup>5</sup> The answers revealed that, when referring to firearms, the term ‘conversion’ was used in reference to three general situations: (1) The conversion of imitation firearms—or any object resembling a firearm, but incapable of expelling a projectile—to lethal-purpose weapons; (2) the reactivation of deactivated firearms; and (3) the modification of semi-automatic firearms into fully automatic weapons.

Each of these modifications entails changes to the firing capacity of the modified weapon: in the case of the first two, the modifications alter the function of non-lethal types of weapons, enabling them to expel projectiles; while the last example alters the rate of fire the weapons can achieve. All EU member states would consider all of these modifications to be illegal—with the rare exception of instances where the state authorizes them—because they change the legal status of the weapon or firearm being altered.

For the purposes of this report the term ‘conversion’ will refer to the first two cases: the alteration of originally non-lethal-purpose imitation firearms and the reactivation of firearms whose firing capabilities were removed or significantly downgraded. This usage is also consistent with the meaning found in international definitions of firearms. The United Nations (UN) Firearms Protocol uses the term ‘converted’ in its definition of a firearm, for example.<sup>6</sup> It states:

‘Firearm’ shall mean any portable barrelled weapon that expels, is designed to expel or may be readily converted to expel a shot, bullet or projectile by the action of an explosive, excluding antique firearms or their replicas (UNGA, 2001, art. 3(a)).

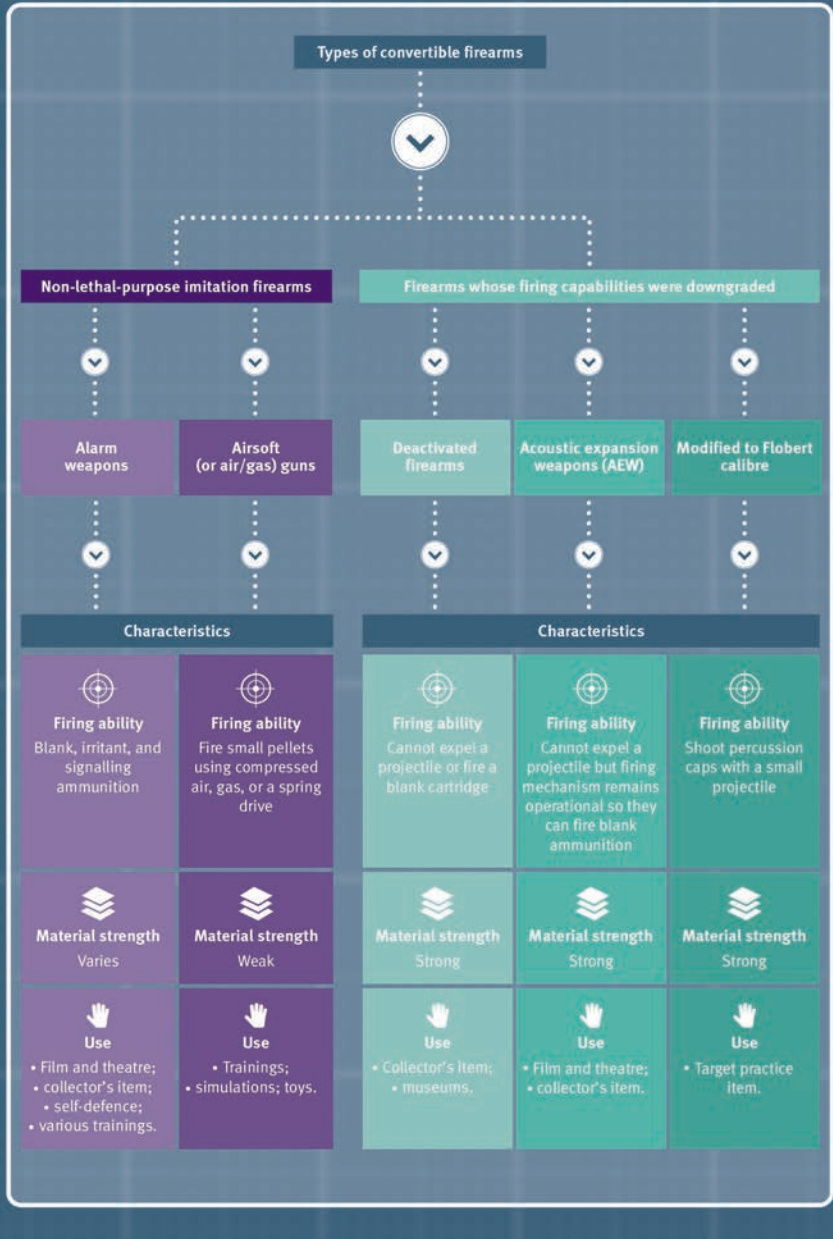
In this definition a conversion is described as transforming ‘any portable barrelled weapon’ that was originally incapable of expelling a projectile to one that can. These conversions differ from semi-to-fully automatic conversion (the third case above), since the weapon being converted—typically a semi-automatic firearm—is always defined as a firearm and therefore automatically subject to national legislation. The modification to fully automatic capabilities merely changes the categorization of the type of firearm. While making such a modification is still a serious offence, countering it requires different responses. Therefore, for the purposes of this report, ‘conversion’ will refer to the modification of objects that are incapable of firing a projectile to ones that are capable of doing so.

## Types of readily convertible firearms

Police encounter a variety of objects that can be converted in this way. Experts often refer to such objects as ‘readily convertible firearms’. While international and regional instruments do not define the principle of convertibility, legislation in the United Kingdom



# Types of convertible firearms: an overview



provides useful conceptual guidance in this regard, stating that an imitation firearm should be considered readily convertible if:

- (a) it can be so converted without any special skill on the part of the person converting it in the construction or adaptation of firearms of any description; and
- (b) the work involved in converting it does not require equipment or tools other than such as are in common use by persons carrying out works of construction and maintenance in their own homes (UK, 1982, para. 1.6).

While the above definition refers to readily convertible ‘imitation’ firearms, diverse objects have been found in Europe that have been converted into firearms without the need for

**Table 1** Main types of objects converted into firearms in Europe

Categories/types	Basic description	Ammunition (before conversion)	Models of concern
<b>Non-lethal-purpose imitation firearms</b>			
Alarm weapons (aka blank-firing guns)	Not capable of firing solid projectiles	Blank, irritant, and signalling ammunition	A variety of handguns (pistols and revolvers), including some automatic models
Airsoft (or air/gas guns)	Often classified as toys	Small plastic or metal pellets	Rarely suitable for conversion due to weak materials, but some airsoft rifles are of concern
<b>Firearms whose firing capabilities were downgraded</b>			
Deactivated firearms	Real firearms rendered permanently unfit for use	None. The deactivation process should prohibit the expelling of projectiles or firing blank ammunition	Potentially all models, especially handguns, sub-machine guns, and automatic rifles
AEWs	Real firearms modified to be unable to fire a solid projectile	Blank ammunition	Potentially all models, especially handguns, sub-machine guns, and automatic rifles
Firearms modified to Flobert calibres	Real firearms modified or designed for Flobert calibres, which are unrestricted in some countries	4 and 6 mm Flobert	Potentially all models, especially handguns, sub-machine guns, and automatic rifles

specialized skills or equipment. They can be regrouped into two main categories that are reviewed here and summarized in Table 1: non-lethal-purpose imitation firearms, and firearms whose firing capabilities were downgraded. It is important to note that not all the objects under these types and categories are necessarily ‘readily convertible’ into firearms, because some manufacturers apply greater obstacles to conversion than others in the manufacturing process. As this report demonstrates converted firearms have been assembled with ease from some items belonging to each of these broader types or categories.

## Non-lethal-purpose imitation firearms

The first category in Table 1 refers to objects that resemble real firearms—mostly, but not only, handguns—in appearance and action, but that were intentionally designed to serve non-lethal purposes. They often imitate recognizable firearms, but are unable to fire bulletted ammunition. Some can fire blank (non-bulletted) rounds to further resemble real firearms. Others might fire small pellets made of plastic or light metals, but with a low level of force not meant to cause serious injuries. If misused, many of these imitation firearms can cause serious injuries, even fatalities, despite no such intent on behalf of the manufacturers. Some states do not define pre-conversion imitations as real firearms, making it easy to acquire them on the civilian market. Within this category, the most common types of non-lethal-purpose objects that are being converted are discussed below.<sup>7</sup>

**Alarm weapons.** The Permanent International Commission for the Proof of Small Arms (CIP) defines alarm weapons as ‘any portable device not designed to fire solid projectiles’ (CIP, 2001, art. 1.1). This category of weapons is sometimes also referred to as ‘blank-firing firearms’, in reference to the blank, non-bulletted cartridges that they are capable of firing, in addition to irritant or signalling rounds (EU, 2017, art. 1.1 (4)). Alarm weapons are often designed as exact imitations of real firearms, typically handguns, and are often difficult to differentiate without a close examination. They also generally replicate the same firing mechanism as a real firearm: the user pulls a trigger to fire a blank cartridge, the spent cartridge is extracted from the chamber (in semi-automatic versions), and the next round is then chambered and ready to fire. Because of their resemblance to real firearms, both physically and in their actions, these weapons are popular for use in film and theatre, and are used and collected by hobbyists.

The differences between alarm weapons and the real firearms they replicate are often structural. These are the features manufacturers include that prevent alarm weapons from expelling live ammunition, thereby preventing them from being classified as real firearms. These features vary by make and manufacturer, but generally include barrel obstructions that prevent the passage of a solid object and the use of weaker-strength materials, particularly in pressure-bearing parts—notably the barrel and breech block—

that must withstand the intense pressures created when a live round is fired. As of March 2018, there were no common regional manufacturing standards for these types of weapons. The more readily convertible versions (see Table 2) are generally made with more robust components. ‘Front-venting’ alarm weapons look more authentic when fired and are therefore more popular for use in film and TV, but they are also typically more readily convertible than ‘top-venting’ variants.<sup>8</sup> To reduce convertibility, some manufacturers misalign the chamber and barrel in order to prevent the alarm weapon from being able to chamber bulletted ammunition.<sup>9</sup>

Other types of non-lethal-purpose imitation firearms with the potential to be converted do exist, but are much less common:

**Airsoft,<sup>10</sup> or air or gas guns.** These are imitation firearms that are classified as toys or sporting goods in many countries. Airsoft guns fire small plastic pellets using compressed air, gas, or a spring drive as the propellant. They are more-or-less realistic imitations of firearms, and are used for games and training exercises (EC, 2010, p. 3). Airsofts are generally made with weak plastic materials and are unsuitable for traditional conversion methods. However, in some cases manufacturers’ efforts to make the most realistic airsofts have led to product designs that can, if in the hands of a motivated person, be used to fashion an improvised firearm capable of firing live ammunition. The US authorities have seized Chinese-made AR-15 airsoft guns because their lower receiver was made to such exact specifications that it could be fitted, with only slight adjustments, with an upper receiver from a real AR-15 (Macedo, 2010; Vasquez, 2014). Given that the upper receiver of the AR-15 contains the primary pressure-bearing

**Table 2** Examples of the most commonly converted alarm weapons across Europe

Country	Manufacturer	Models readily converted
Germany	Umarex	Walther P99
	Röhm	Vektor CP1
Italy	Bruni	Olympic .380 BBM
	Chiappa Firearms	Kimar
	Tanfoglio	Tanfoglio GT 28
Russian Federation	Baikal	IZH-79-8
Turkey	Voltran AV Silahları (Ekol)	Ekol Tuna, Special 99, Volga, Jackal Dual
	Atak Arms	Zoraki: 914, 917, 918, 925, M2906, R1

Source: Authors’ compilation from multiple European police sources



**Image 1** Converted imitation Tanfoglio GT 28 alarm pistol with fake manufacturer markings and indications of new, post-conversion calibre. Photo taken at the Spanish Policia Nacional offices in Madrid, 18 April 2017. Source: Benjamin King/Small Arms Survey

parts of the weapon, this type of conversion could work in theory, although no examples have been found. Combining parts of non-lethal-purpose weapons with parts from real firearms poses a significant threat, particularly for countries that do not regulate parts other than the frame or receiver.

## Firearms whose firing capabilities were downgraded

The second category in Table 1 refers to real firearms—ranging from handguns to military-grade automatic rifles and sub-machine guns—whose firing capabilities were removed or significantly downgraded. In some countries, these alterations changed the legal standing of the firearm, typically reducing the restrictions placed on purchasers. This section reviews three types of such modifications seen in Europe

**Deactivated firearms.** The EU defines deactivated firearms as

firearms that have been rendered permanently unfit for use by deactivation, ensuring that all essential components of the firearm in question have been

rendered permanently inoperable and incapable of removal, replacement or modification in a manner that would permit the firearm to be reactivated in any way (EU, 2017, art. 1.1 (6)).

Deactivated firearms are therefore real firearms that have been altered to be no longer capable of expelling a projectile or even of firing a blank cartridge. The outer appearance typically remains the same as the real weapon, with the exception of a small proof mark that is typically added to indicate that the deactivation has been verified. The deactivation process usually involves mechanical alterations that block the weapons from performing a firing cycle. This limits these weapons' appeal in films or re-enactments. Instead, they are particularly popular among collectors and museums.

There are essentially three core principles to deactivation: (1) all essential parts of a deactivated firearm must be rendered permanently inoperable and incapable of being replaced; (2) the relevant authorities must verify that the deactivation measures are sufficient; and (3) once verified, the deactivated firearm should be marked to indicate that it has been deactivated, and a certificate to that effect should be issued and/or the deactivation should be recorded (OSCE, 2017, p. 4). In general, all European states follow these steps—deactivation, verification, marking, and recording. However, standards of rigour vary greatly in terms of the first principle—the deactivation process. Some state-approved deactivation processes have been shown to require significantly less skill and effort to reverse. This disparity has been recognized and is addressed in the 2015 EU firearms deactivation standards (EC, 2015).

Any firearm can be deactivated. Changes to civilian firearms legislation may make deactivation the only option that will allow civilian owners to keep previously legal firearms. Or it may be the only way for civilians to own certain types of arms, particularly military-style weapons. Because of this market, states have frequently sold deactivated military- or police-owned surplus stocks to generate income.

**Acoustic expansion weapons.** These are also referred to as blank-firing weapons in the 2017 amendment to the EU Firearms Directive. This is a unique category of weapon that forms a sub-section of the deactivation category, given its similar origin. AEWs were once working firearms originally designed to be lethal, which were subsequently modified to no longer be capable of expelling a projectile (EU, 2017, art. 1.1 (5)). The process involves the insertion of obstructions into the barrel, and possibly other parts, that prevent a projectile from being expelled. These weapons differ from deactivated firearms, however, in their ability to fire blank ammunition. For deactivated weapons, the deactivation process should lock all essential parts, thus preventing a blank round from being chambered or fired. This distinction is important because it makes AEWs significantly easier to convert than a properly deactivated firearm, because the firing mechanism remains operational.

AEWs therefore also share some similarities with alarm weapons in being designed to fire blank ammunition while possessing features designed to prevent the firing of bulletted ammunition. Where they differ is in their structural robustness. Alarm weapons are manufactured with weaker materials, in part to prevent them from surviving the pressures of firing bulletted ammunition. AEWs, on the other hand, are essentially real firearms in that they are fully able to handle the firing of bulletted ammunition, without the safety concerns related to firing live ammunition from an alarm weapon.

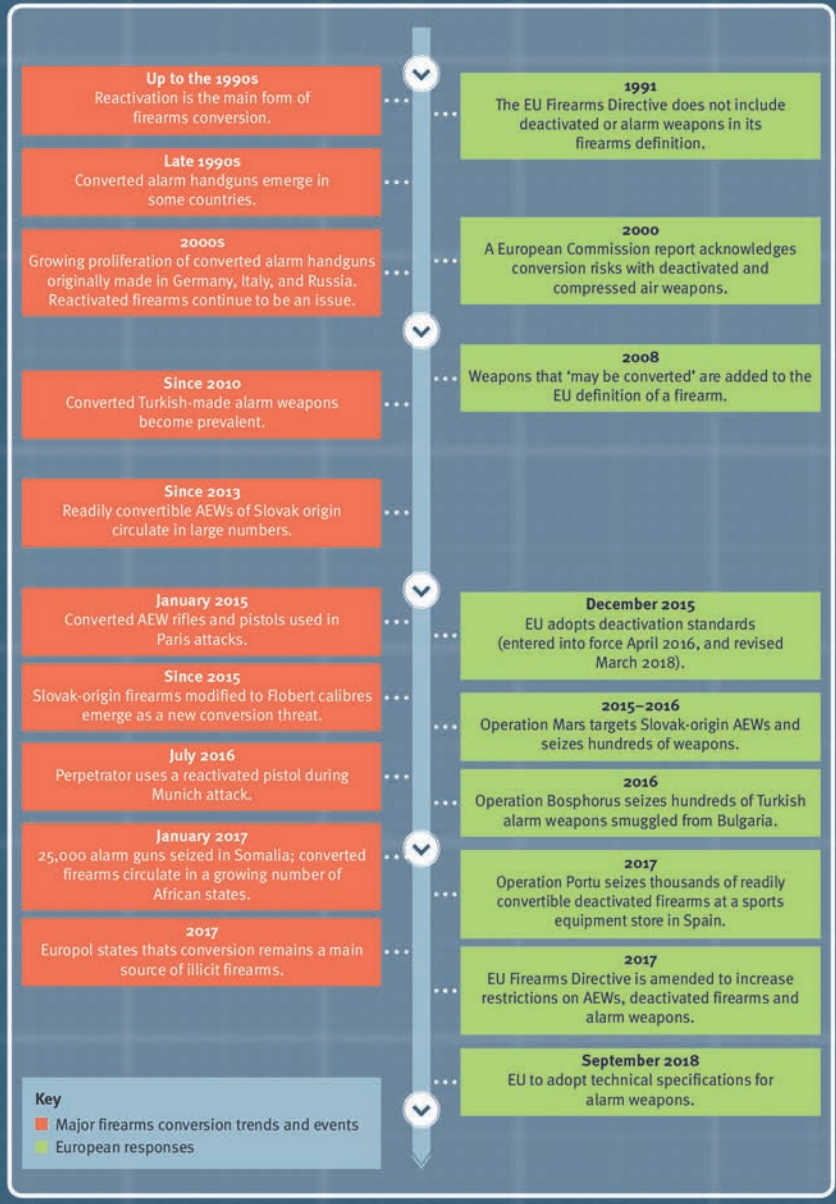
AEWs are predominantly military surplus items from the former Czechoslovakian military. The most notorious AEW models are the vz.58 automatic rifle and Skorpion vz.61 sub-machine gun, although other models exist, including handguns such as the PS97 Arrow, Glock, and Makarov pistols (Slovak Police Force, 2013).<sup>11</sup>

**Firearms modified to Flobert calibres.** Flobert firearms were developed in the 19<sup>th</sup> century for indoor shooting.<sup>12</sup> They do not fire traditional cartridge-based ammunition, but instead shoot percussion caps filled with a small projectile. Today, Flobert firearms are advertised as weapons for target practice.<sup>13</sup> Newer versions typically fire 4 mm to 6 mm projectiles. The weapons themselves are similar to alarm weapons, because they imitate real firearms, but are made with weaker metals that are not intended to survive the pressure that a real firearm experiences when it is fired. In fact, several prominent alarm gun manufacturers, notably Turkish manufacturer Atak Arms, have begun to produce several of their popular alarm guns in a Flobert calibre.<sup>14</sup> Purpose-built Floberts are sold widely in Europe and are often subject to fewer restrictions than other firearms. In Spain, for instance, Floberts are considered to fall into the same category as muzzle-loader firearms, the only one where the owner can own an unlimited number of weapons.<sup>15</sup>

Recently, there have been growing concerns that some specific models of Flobert firearms could be converted to fire more lethal types of ammunition. In particular, police have seen the appearance in criminal cases of real firearms modified to only be capable of firing Flobert-calibre ammunition. The process is similar to that applied to AEWs, where a real firearm is modified to alter the weapon's capabilities and, in turn, reduce the restrictions on purchasing it. Part of the modification involves reducing the internal diameter of the barrel, which is done by adding a layer of wax to the inside of the barrel.<sup>16</sup>

Nearly all of the real firearms that are modified to Flobert calibre originate from Slovakia, where they have been sold with few restrictions. They include the vz.58 automatic rifle and other weapons that were previously modified as AEWs. Slovakian-origin Walther P99 Floberts were first encountered in the Netherlands in early 2016, for instance (Bruinsma and Spapens, forthcoming, p. 301). Law enforcement authorities in several other countries who were consulted for this study are concerned that these weapons may be easy to 'retro-convert' to their original calibres, which could lead to the conversion and trafficking of fully automatic, military-grade firearms (Small Arms Survey and EMPACT, 2017). ●

# Selected major firearms conversion trends and events and European responses, 1990–2018







Motivated individuals continue to identify new possible convertible weapons, supply sources, and trafficking routes in an increasingly restricted market, while law enforcement and policy changes attempt to address the problem.”

## The threat of firearms conversion

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## History

Converted firearms have proliferated in Europe for decades in various forms. The items being converted and conversion processes have varied over the years due to a multitude of factors. Changes in legislation at the national and regional levels have shaped the proliferation of these firearms, as some laws have attempted to directly counter a recently defined conversion-related problem, while others have inadvertently created loopholes that led to the proliferation of new types of readily convertible weapons. The one constant for the past three decades has been the demand for firearms or their substitutions. Motivated individuals continue to identify new possible convertible weapons, supply sources, and trafficking routes in an increasingly restricted market, while law enforcement and policy changes attempt to address the problem. When the prevalence of a particular type of weapon is curtailed, a new convertible weapon fills the void. Over the last few decades several patterns have emerged, which are reviewed in this section.

Early forms of firearms conversion in Europe primarily involved the reactivation of deactivated weapons. They generally originated from military or police surplus stocks. The weapons were deactivated before being sold primarily to the domestic market. One of the early cases was in the early 1970s in West Germany where surplus West German police service pistols were deactivated and sold to German civilians. By 1972 West German police began seizing these deactivated pistols in a reactivated form.<sup>17</sup> These seizures eventually led to a halt in the sale of such pistols.

### The first decade of the 21<sup>st</sup> century

The first decade of this century witnessed a major change in the proliferation trends of converted firearms. The type of weapons being converted and the sources of those converted items shifted as the scale of the proliferation increased. Converted alarm weapons became a widespread problem throughout much of Europe. Alarm weapons had previously been used in crimes, particularly small armed robberies, but generally remained unaltered and were used for their intimidation effect.<sup>18</sup> With the new trend, alarm weapons were used in a wider range of, and increasing numbers of, gun crimes in several countries. In Portugal, police seized 138 converted alarm weapons in 1999, for example, and over the course of the next ten years they would seize 3,039 more (Small Arms Survey and EMPACT, 2017). Between 2002 and 2006, Dutch police seized nearly 1,000 converted firearms (de Vries, 2012).

Most of this first generation of alarm weapons that were being converted were produced in Europe or nearby (Small Arms Survey and EMPACT, 2017). Manufacturers in Germany (Umarex and Röhm), Italy (Bruni, Chiappa Firearms, and Tanfoglio), and the Russian Federation (Baikal) were and remain among the largest producers, and their

products represent the vast majority of converted alarm weapons seized by European police prior to 2010 (EC, 2010). It remains unclear why alarm weapons from these countries were frequently converted; most likely it was a consequence of their availability and the quality of their manufacturing.

In many countries, the first prominent converted alarm pistol was the Tanfoglio GT 28. This is a compact 8 mm PAK alarm pistol that is typically converted to fire a bulletted 6.35 Browning round. The firearm was so widespread throughout Europe that in many countries it represented a significant percentage of the total firearms that police seized. By 2010, for instance, at least 1,500 GT 28 alarm pistols were used in crimes in the Netherlands (Starink and Beemsterboer, 2010). While some GT 28 pistols were seen in France as early as 1999–2000, their conversion became prominent especially from 2003 onwards. The French authorities seized 160 converted GT 28 pistols between 2003 and 2007, including 37 in a single consignment transported on a bus from Portugal.<sup>19</sup>

While Tanfoglio stopped manufacturing the GT 28 during the decade (Starink and Beemsterboer, 2010), it should be noted that imitations of this model have proliferated widely. These imitations were predominantly—if not entirely—manufactured in Turkey to an exact standard that made them nearly identical in both appearance and convertibility. The differences are found in the manufacturers’ markings. The imitation versions often had fake markings (occasionally misspelled and poorly imprinted) of real European firearms manufacturers, notably the Spanish manufacturer Star<sup>20</sup> (see Image 1).

Other makes and models also proliferated around the continent. The Olympic .380 BBM alarm revolver and Baikal IZH-79-8 alarm pistol (trauma gun) were two of the most prominent converted alarm weapons to proliferate out of Lithuania: UK police seized 170 converted Olympic .380 BBM revolvers in the period 2007–09 (NABIS, 2010, p. 4). Following forensic testing that confirmed the revolver to be ‘a readily convertible imitation weapon’ (in accordance with the 1982 Firearms Act), the Olympic was declared prohibited in the United Kingdom in 2010 (NABIS, 2010, p. 1).

## Turkish-made alarm handguns

Starting around 2010, converted Turkish-made alarm weapons became the most prevalent converted alarm firearms in Europe (see Image 2). Proliferation was widespread and extended beyond Europe (see Box 1). The authorities of all the European countries consulted for this study provided documented accounts of the presence of converted Turkish alarm weapons. In several countries, these weapons were used in a significant percentage of these nations’ total firearms-related crimes. In Sweden, for instance, 11 per cent of all firearms that the National Forensic Centre investigated in 2014 were converted Turkish alarm weapons.<sup>21</sup> Belgium, Bulgaria, Croatia, Denmark, Finland, France, Germany, Greece, Italy, Kosovo,<sup>22</sup> the Netherlands, Portugal, Romania, Spain, Sweden,



**Image 2** Converted Zoraki M906, Turkish-made alarm pistol seized by Spanish Policía Nacional in Madrid. Photo taken on 18 April 2017. Source: Benjamin King/Small Arms Survey

Ukraine, and the United Kingdom each reported converted Turkish-made alarm weapons as being commonly used in these countries' firearms-related crimes.

Turkey has several manufacturers with reputations for producing high-quality alarm weapons, which are generally built with strong materials. Most of the models are near-exact replicas of real firearms and several models have been notoriously easy to convert.

Ekol and Zoraki have been the two most common brands of Turkish alarm pistols in circulation. The Ekol Tuna appears to be the most widely proliferated Turkish alarm pistol. It fires an 8 mm PAK round and is often converted to fire 6.35 mm Browning ammunition. Alternatively, blank ammunition is fitted with a ball bearing or similar projectile. Experts have noted that not all Ekol Tuna alarm pistols are built in the same way, which means that some are easier to convert than others.<sup>23</sup> For the version that is easiest to convert, one can simply unscrew the barrel obstruction with a common screwdriver. This is particularly problematic for law enforcement, because the same obstruction can be reinserted into the barrel, thus hiding its conversion. In recent years several Zoraki models have become more common, notably the 914 and 925. Zoraki models are more robust and fire larger calibre 9 mm PAK ammunition. They are often converted to fire 7.65 Browning. The 925 is notable because it can fire in fully automatic mode.

Turkish alarm weapons have also been a problem inside Turkey itself. This led the government to adopt Law No. 5729 on blank-firing weapons in January 2008, and the Ministry of the Interior to issue Bylaw No. 26864 in May of the same year, which included

### **Box 1** The global proliferation of Turkish alarm pistols

The proliferation of Turkish-made alarm guns has been widespread in recent years. Unlike European-manufactured alarm weapons, converted Turkish-made alarm weapons have also proliferated widely outside Europe. Turkish-made Zoraki alarm pistols began appearing in converted form in Canada around the same time as they did in Europe.<sup>24</sup> They were often linked to gang violence in Toronto (Consiglio, 2012). This led to Canada banning the Zoraki 914 and 925 in 2012. Although still under-reported, these weapons are also present in Africa and the Middle East. In 2017, for instance, a shipment of 25,000 Turkish-made alarm guns, primarily Ekol Tuna alarm pistols, was seized in Somalia at the port of Kismayo.<sup>25</sup> Since 2010 several large seizures—each involving more than 1,000 alarm pistols—have taken place in Egypt and Libya, and as a result of a Spanish Guardia Civil investigation another large consignment was seized in Spain while on route to Djibouti (King, 2015, pp. 7–8).<sup>26</sup> Small Arms Survey inquiries in Africa also indicate that Turkish alarm pistols circulate in Burkina Faso, the Central African Republic, Chad,<sup>27</sup> Ghana, Kenya, Libya,<sup>28</sup> Mauritania,<sup>29</sup> and Niger.<sup>30</sup>

Customs data such as that compiled by the International Trade Centre in the Trade Map database aggregates import and export data for a variety of products—including a series of weapons-related categories (ITC, n.d.). This data, however, does not cover internal market transactions. Furthermore, it combines other products under the same category. Alarm weapons, for instance, are recorded in the ‘other firearms’ category (code 930390), which includes ‘signal pistols’ and other items such as ‘humane killers’. It is therefore not possible to separate the alarm weapons from other items in this category, or to know exactly what other products may be included in this category. Despite these limitations, Trade Map customs data provides a general sense of the main recipients of reported Turkish exports of product category 930390 items for the period 2010–16 (see Table 3). According to this data, in this period Djibouti was the largest recipient of Turkish exports of items in this category, and by a significant margin. In Europe (in descending order), the Russian Federation, the Czech Republic, Germany, Ukraine, and Bulgaria were the top recipient states (ITC, n.d.; see Table 3).

Libya also features in the top ten of the largest recipients of reported Turkish exports of 930390 category products during 2010–16, despite the fact that Libya has been subject to a UN weapons embargo since 2011. In 2012 and 2013 Libya was even Turkey’s third- and second-largest receiver, respectively, of these exports. The proliferation and conversion of Turkish-made alarm weapons in Libya has been well documented.<sup>31</sup> Other embargoed states, notably Somalia (ranked as the 15<sup>th</sup>-largest recipient) and Sudan (21<sup>st</sup>), also reportedly received significant shipments during the period 2010–16 (ITC, n.d.). The data reveals that other states in fragile settings or experiencing open conflict were among the largest recipients, including Ukraine and Egypt.

**Table 3** Largest reported recipients of Turkish product category 930390 exports, 2010–16 (USD)

Major recipients	Average value exported by Turkey, 2010–16
World	8,487,000
Djibouti	1,998,000
United States	689,000
Russian Federation	676,000
Czech Republic	517,000
Egypt	458,000
Germany	408,000
Ukraine	404,000
Libya	370,000
Oman	365,000
Bulgaria	299,000

Source: ITC (n.d.)

manufacturing specifications for weapons sold in Turkey (Turkey, 2008a; 2008b; Şen, 2017). These restrictions did not apply to products that were being exported, however, meaning that the guns arriving in Europe were still readily convertible (Small Arms Survey and EMPACT, 2017). Turkish manufacturers have used this loophole to their advantage and produced less-restricted versions for the international market. According to Turkish police, however, this continued to impact both Europe and Turkey itself, because criminals bought unregulated versions in other countries and smuggled them back into Turkey (KOM Presidency, 2014, p. 80). A 2015 amendment to the 2008 bylaw was meant to address this loophole, but still appears to allow the export of alarm weapons that do not meet the manufacturing specifications under some circumstances (Turkey, 2015; Şen, 2017).

## 2013 onwards

Starting in 2013, converted AEWs of Slovak origin began appearing in criminal cases in several countries. Police reported seizing AEWs in France and Sweden in 2013, Germany in 2014, and the United Kingdom in 2015 (Small Arms Survey and EMPACT, 2017). It was not until 2015 that many people outside of law enforcement heard of these weapons, when no fewer than eight converted AEW firearms were seized in relation to attacks that occurred in January of that year in Montrouge and at the Hypercacher supermarket at the Porte de Vincennes in Paris (see the ‘Terrorism’ section, below; Florquin and Desmarais, forthcoming, p. 211). Joint operations in several countries were put in place in 2015 and 2016 to target the spread of AEWs (see the ‘Operations’ section, below).

From a security standpoint, converted AEWs are more powerful and capable than alarm pistols, making them a potentially greater threat. The pins obstructing the barrel can be easily removed, by drilling through them, replacing the barrel, or even just firing a real round to clear the barrel (Small Arms Survey and EMPACT, 2017). The result is a weapon with capabilities similar to its original model in terms of calibre, but also, for



**Image 3** Converted AEW seized by the Spanish Guardia Civil. Markings indicate the new ammunition requirements and proof of transformation of the vz.61 to a blank-firing AEW. Photographed on 18 April 2017. Source: Benjamin King/Small Arms Survey

assault rifles such as the vz.58 or the vz.61 sub-machine gun (see Image 3), the ability to fire in fully automatic mode.

Nearly all of the AEWs seen by police originated from Slovakia, where they were initially categorized as blank-firing guns, and where national standards to guarantee the irreversibility of the AEW modification process were lacking (Slovak Police Force, 2013). Furthermore, the AEWs were sold without restrictions to anyone aged 18 or older upon presentation of an identification document, including on online sites selling guns, until relevant Slovakian legislation was tightened in July 2015.

The new legislation prohibited the online sale of AEWs and required them to be registered with the police. According to Slovakian Decree No. 169/2015, all AEWs must be marked with a crest with an 'E'—indicating 'expansion weapon'—and dealers must register key information about the purchaser (Slovakia, 2015). Since then, the companies that previously manufactured AEWs have increasingly moved to the production of Flobert-calibre weapons. The approach has remained basically the same, however, in that weapons are modified into forms that are less regulated: instead of reducing the capacity of a real firearm to only shoot blank ammunition, weapons are now modified to fire 4–6 mm Flobert calibres (NCA, 2017c, p. 30).

As noted above, law enforcement authorities in several countries are concerned that firearms modified in this way to fire Flobert calibres may be readily convertible to fire ammunition in their original, military-grade calibres (Small Arms Survey and EMPACT, 2017). If this concern is not addressed, it could lead to the same type of proliferation and trafficking that occurred with AEWs. Moreover, it should be noted that there is also an illicit market for firearms originally designed to shoot Flobert ammunition. Indeed, recent seizures indicate a growing trend in smuggling Flobert firearms to countries that have tighter arms control regulations. On 1 July 2017, for instance, the UK authorities seized 79 Turkish-manufactured 4 mm and 6 mm Flobert revolvers and ammunition in Coquelles, France, hidden in engine blocks transported by a vehicle before it entered the Channel Tunnel on route to the United Kingdom (NCA, 2017a).<sup>32</sup> In France, 28 Flobert 6 mm-calibre weapons feature in the database of the national ballistics information management system (the Fichier national d'identification balistique, FNIB), mainly in cases related to violations of firearms legislation.<sup>33</sup> It is unclear, however, whether criminal networks involved in smuggling these weapons and their end users intend to convert these original Floberts to fire more lethal types of ammunition or to use them in their original form.

## Scale

### The legal market in convertible objects

Measuring the true scale of the availability of readily convertible firearms is challenging (SIPRI, 2014, pp. 10–17). This is particularly true of alarm weapons, for which the scale of the legal market can only be inferred from information that lacks precision. This is because not all countries categorize alarm weapons as firearms and have record-keeping requirements in place that would allow for their accounting and monitoring.

As a result, the scale of the legal market for convertible weapons must be inferred from anecdotal evidence available in the countries where they are most tightly regulated. In Lithuania, for instance, as of 2016 civilians owned 55,500 registered alarm weapons and small-calibre revolvers.<sup>34</sup> In Romania, as of 2011, 94,455 non-lethal firearms were registered to 71,517 individuals (Albisteanu, Dena, and Lewis, forthcoming, p. 343). In many cases, however, alarm weapons are grouped together with other types of weapons, which complicates in-depth analysis. Moreover, not all the imitation guns may be considered readily convertible: determining this would require much more detailed information about the models and makes of the weapons in question.

National proof houses that test the safety of these weapons represent a potential source of information, but even this data is subject to problematic analytical limitations. In Italy, for example, the national proof house in Gardone Val Trompia tested an average of more than 200,000 imitation, muzzle-loading, and blank-firing firearms each



**Table 4** Largest exporting countries of ‘other firearms’ (category 930390, which includes, but is not limited to, ‘signal pistols’), 2010–16 (USD)

Major exporters category 930390	Average value of exports, 2010–16
World	55,767,000
United States	13,747,000
Turkey	8,487,000
Germany	7,999,000
France	3,791,000
Israel	3,550,000
Italy	3,044,000
Canada	2,284,000
China	1,798,000
Russian Federation	1,599,000
Spain	1,462,000
Czech Republic	1,223,000
South Korea	1,012,000

Source: ITC (n.d.)

United Kingdom in 2010, for example, roughly 200,000 of a reported 300,000 deactivated weapons had been submitted to the proof authorities (Home Affairs Committee, 2010, para. 110, p. 46). In France, the national proof house in Saint-Étienne deactivated between 2,000 and 4,500 firearms every year, totalling 15,349 for the period 2012–16.<sup>36</sup> But as with alarm weapons, these numbers do not include deactivated firearms proofed in other CIP member states and then imported into France.

Because AEWs have been primarily—if not exclusively—sourced in Slovakia, where there was no registration requirement prior to 2015 (see above), the size of this market is also unknown. According to some reports as many as 14,000 AEWs may have been legally sold to customers throughout Europe since 2013 (Duquet and Van Alstein, 2016, p. 9). The 2017 EU Firearms Directive should help to significantly improve record-

year in the period 2011–15. But these numbers did not include the firearms already proofed in one of the 13 other CIP member countries<sup>35</sup> and then imported into Italy without requiring further testing (Strazzari and Zampagni, forthcoming, p. 252).

Despite its limitations (see Box 1), customs data compiled in the Trade Map database can provide useful material for analysis. Reported export data since 2010 reveals, for instance, that several known manufacturers of alarm weapons available on the European market, notably Turkey, Germany, Italy, and the Russian Federation (in descending order), featured among the world’s top exporters of products in the 930390 category—comprising ‘other firearms’, including ‘signal pistols’ and other items—in the period 2010–16 (see Table 4).

Similar data limitations impede a comprehensive assessment of the number of deactivated firearms circulating in Europe. Until recently some countries did not classify deactivated weapons as firearms, or as firearms requiring a declaration or registration. As a result, only a few countries kept official records of all the deactivated firearms on their territory. In the

keeping, however, because it requires that owners declare deactivated firearms to national authorities, and that AEWs be classified in the same legal category as the original weapon and subjected to the same restrictions (EU, 2017, pp. 37–38).

## Seizures and forensic data

Currently, all European countries do not use a common indicator for the proliferation of converted firearms. Nationwide firearms seizure statistics are often not detailed enough for a precise assessment of the phenomenon. Indeed, law enforcement officers may not consider alarm weapons as real firearms and therefore will not record their seizure or consider them worthy of forensic examination.<sup>37</sup> When the authorities do record seizures of converted firearms, these weapons may be counted as weapons in their pre-conversion category without specifying if they were converted or not. Indeed, statistics often fail to specify whether seized alarm weapons were converted or not. In Croatia, for instance, signal and air weapons represented 44 per cent of illicit firearms seized at the state borders between 2010 and 2016 (Dragović et al., forthcoming, p. 105). In Romania, gas and air pistols represented one-third of the 45 firearms the country's border police seized in 2015 (Albisteanu, Dena, and Lewis, forthcoming, p. 346). In the United Kingdom, the Border Force seized four times as many imitation firearms as real firearms (7,058 versus 1,608) for the period 2010/11 to 2015/16 (Holtom, James, and Patmore, forthcoming, p. 394). While this type of aggregated seizure data gives a sense of the potential and likelihood of firearms conversion, it provides few clues regarding the actual extent of the phenomenon or its evolution.

The present study attempted to mitigate these limitations by obtaining information from national forensic institutions and firearms investigators, because these organizations and officials have the greatest access to seized firearms and the expertise needed to identify the modifications made to them. Forensic data may not represent the full picture, however, because the proportion of seized firearms that is sent to these institutions can vary greatly from country to country.

Moreover, European forensic institutions do not yet use standard protocols for recording information on modifications and conversions made to the weapons they examine. There is a growing recognition in the forensic community of the need to do so, and the European Network of Forensic Science Institutes, for instance, has begun to integrate such information and guidance in pilot pan-European forensic databases of illicit firearms. This work was still under way in late 2017 and will take time to produce useable data on converted firearms.<sup>38</sup> As a result, the available information falls short of providing a comprehensive account of all seizures of converted firearms, and therefore does not allow comparisons between countries. Where available, however, forensic and ballistics data provides a wealth of information on the scale and patterns of conversion at the national level.

The proliferation of converted firearms is particularly well documented in the United Kingdom, where the acquisition and possession of firearms are very tightly regulated. All seized firearms—as well as ammunition-related evidence—are subject to forensic analysis and integrated into the National Ballistics Intelligence Service (NABIS) database, providing the country with detailed and real-time intelligence on illicit guns, including converted weapons (Small Arms Survey and EMPACT, 2017). A 2015 NABIS study, for instance, determined that a third of the firearms that UK police examined were converted blank-firing, modified, or reactivated firearms, demonstrating that these weapons represented a significant proportion of the available pool of illicit guns (Holtom, James, and Patmore, forthcoming, p. 396). Reactivated firearms and converted AEWs from Slovakia in particular have become a major concern in the United Kingdom. Incidents where such weapons featured have included the use of Czech-made Skorpion vz.61 sub-machine guns in attacks in London in 2014, ‘including the shooting of a police community support officer’, as well as in two further murders in the capital in 2015 and 2016 (Holtom, James, and Patmore, forthcoming, p. 400). Airsoft guns have also been visibly used in the United Kingdom since 2015 in particular (Small Arms Survey and EMPACT, 2017).

In France, the forensic laboratories of the French gendarmerie and police do not yet examine all the firearms that these agencies seize. The proportion of seized firearms that forensic specialists examine has grown since 2010, but was still less than 50 per cent in 2015–16 (Florquin and Desmarais, forthcoming, p. 173).<sup>39</sup> It is expected to continue growing, however, with the establishment in 2016 of an integrated, national ballistics information management system (the FNIB) and greater attention to the firearms-proliferation issue since the 2015 terror attacks. It can also be assumed that the firearms that forensic experts examined were mostly connected to serious forms of crime and generally exclude minor administrative violations, although with some exceptions.

Bearing these caveats in mind, the available information suggests that converted firearms are used in France, although seemingly in a smaller proportion of cases than in the United Kingdom. For instance, 72 (8 per cent) of the 930 firearms examined by the Institut de recherche criminelle de la gendarmerie nationale (IRCGN—the gendarmerie’s forensic laboratory) between November 2015 and October 2016 were converted alarm guns. Turkish-origin imitation firearms—primarily Zoraki and Ekol alarm guns—represented 57 per cent of these converted weapons.<sup>40</sup> On the other hand, only 12 (1 per cent) of the firearms that the IRCGN examined in the same period were converted AEWs, such as vz.58 automatic rifles and Skorpion vz.61 sub-machine guns.<sup>41</sup> Many more AEWs were recovered before this period, however, so these proportions need to be treated with extreme caution.<sup>42</sup> In comparison with modified AEWs, converted deactivated firearms are rarely seen in France since the strengthening of deactivation standards (Museau, 2017, p. 61).

The forensic analysis of converted firearms not only helps to monitor general trends in firearms conversion, but can also greatly assist criminal and counter-proliferation investigations. Indeed, the tools, techniques, and materials used to convert firearms

can provide important clues about the actors who carried out the conversions. In turn, this may help identify links between weapons used in separate cases, but that were all converted or supplied by the same actor (Museau, 2017, p. 34). Similarly, alterations made to weapons parts during the conversion process may result in unusual marks on spent cartridge cases, which may also point to the use of a converted firearm (Museau, 2017, pp. 49–52).

Operation Newhaven in 2010 in the United Kingdom is an example of an investigation that successfully linked different crimes to a single conversion workshop. Examiners noticed unusual rifling marks on bullets and cartridges fired by Uzi- and Sten-type firearms at apparently unrelated shootings in Lancaster and Manchester, suggesting that the same person had modified the various crime guns. Subsequent covert investigations resulted in the recovery of Glock pistols with the same rifling, and eventually led to the dismantling of a reactivation workshop in Liverpool that was found to have reactivated at least 45 firearms. Four of the retrieved weapons were linked to nine crime shooting incidents, including a murder. Investigators arrested four men, who received sentences ranging from ten to 19 years of imprisonment (OSCE, 2016, p. 19).

Although the forensic community appears to be the best equipped to collect and analyse data related to converted firearms, it is also clear that these weapons pose specific challenges to ballistics analysis. For instance, it can sometimes be difficult to determine whether tool marks are the result of the conversion or manufacturing process.<sup>43</sup> Ballistics experts note that Turkish alarm weapons from the same batch can leave similar breech face and ejector ‘sub-class characteristics’ marks on ammunition.<sup>44</sup> They also note that a single converted weapon can leave inconsistent ‘individual characteristics’<sup>45</sup> marks on multiple rounds of ammunition it fires (Small Arms Survey and EMPACT, 2017).<sup>46</sup> These features can make it particularly difficult to establish a clear link between spent ammunition found at one or several crime scenes and a single suspected crime gun, if the latter was converted. Companies developing integrated ballistics information analysis systems have developed some capabilities to mitigate the random marks left on ammunition by features such as unrifled barrels.<sup>47</sup> While these technological developments may help to investigate converted firearms with these types of barrels, overall the ballistics analysis of converted firearms is difficult. These challenges underscore the need for regular information sharing and improved record-keeping on converted firearms at the European level.

## Types of illicit use

### Petty crime

Law enforcement officials observe that original and converted alarm handguns are primarily used in petty crime and by low-level criminals. Indeed, even if they are not

converted, imitation firearms can be used for intimidation purposes, and given their physical appearance, they can do harm without being converted. Young criminals in the United Kingdom, for instance, seek out converted firearms because the drug market is so competitive that they need weapons to enforce their criminal activities and enhance their reputations (Small Arms Survey and EMPACT, 2017). In Belgium, petty criminals and those involved in drug-related offences are reportedly the main users of converted alarm pistols (Duquet and Goris, forthcoming, p. 43).

Due to the limitations of available firearms seizure data (see the section on ‘Seizures and forensic data’, above), it is often difficult to establish with precision the proportion of criminal events that are perpetrated with converted firearms. Available statistics for Belgium, for instance, show that alarm weapons represent a significant proportion (40 per cent in 2015) of the firearms recorded by the police in drug-related cases. They are, however, seemingly only marginally used (2 per cent in 2015) in cases of armed thefts involving a firearm (Duquet and Goris, forthcoming, pp. 36–37). This is subject to the caveat that some alarm pistols, including converted ones, may be wrongly recorded as real handguns and therefore under-represented in statistics: handguns were used in 91 per cent of armed thefts involving a firearm in 2015 (Duquet and Goris, forthcoming, p. 37). It is therefore often difficult to use quantitative data to confirm the prevailing perception that converted alarm firearms are mainly used for petty crime.

## Serious crime

The perception that primarily low-level criminals use converted firearms makes it difficult for law enforcement officials to justify expending resources to combat such smaller crimes and counter further proliferation. This perception is only partially true, however, and is therefore misleading for policy-makers. Indeed, reports from several countries illustrate the involvement of large organized crime groups in smuggling and their use of different categories of converted firearms in particular (see also the section on ‘The mechanics of conversion’, below).

In the United Kingdom, while low-level drug traffickers are the primary users of converted firearms, their business is controlled by more established criminals who coordinate the large shipments of drugs, and often also the supply of firearms to their agents (Small Arms Survey and EMPACT, 2017). There are also numerous examples of organized crime groups using converted firearms. While the number of firearms discharges involving reactivated weapons in the United Kingdom is relatively low, these weapons tend to be used for serious crimes such as murder and intimidation (Holtom, James, and Patmore, forthcoming, p. 397). In France’s Marseille region, criminals used 9 mm PAK alarm pistols converted to fire modified ammunition to torture victims in two cases in 2016 and 2017. This involved shooting at point-blank range at the victims’ arms and knees to force them to provide information.<sup>48</sup>

In Switzerland, law enforcement officials arrested an individual linked to the notorious 'Pink Panther' syndicate in April 2017 on a train to Zurich, where he planned to take part in an armed robbery. He was carrying a Zoraki 917 pistol converted to calibre .38/9 mm, which was marked as a Glock and fitted with a suppressor (Small Arms Survey and EMPACT, 2017). This case is an example of a sophisticated organized crime group using converted alarm weapons to carry out a complex criminal operation.

## Terrorism

There have been a number of high-profile shootings involving converted weapons in Europe in recent years. Indeed, the conversion threat has come under particular public scrutiny following the use of several converted AEWs in the January 2015 terrorist attacks in Paris. Amedy Coulibaly, who carried out the Montrouge and Hypercacher attacks, used two reactivated vz.58 automatic rifles—one compact, one sub-compact—and six Tokarev TT 33 pistols.<sup>49</sup> The firearms had been sold as AEWs in Slovakia before being reactivated and eventually smuggled into Coulibaly's hands. Less well known is the fact that weapons seized from Mohamed Merah, the perpetrator of attacks in January 2012 in Toulouse and Montauban, France, included a reactivated Spanish-made .45 ACP LLama Max-II pistol (Florquin and Desmarais, forthcoming, pp. 203–17).<sup>50</sup>

While no firearms were used during the 22 March 2016 attack on Zaventem airport in Brussels, three vz.58 rifles could be seen on pictures that the perpetrators took shortly before the assault, although it is unclear whether they were converted AEWs (Duquet and Goris, forthcoming, p. 55). The perpetrator of the July 2016 shooting in Munich reportedly used a reactivated Glock pistol purchased on the dark web (Persi Paoli et al., 2017, p. 1). In Northern Ireland, both Republican and Loyalist terrorist organizations are known to contain skilled and experienced gunsmiths. However, Loyalist forces are believed to rely to a greater extent on converted weapons than their Republican counterparts (Holtom, James, and Patmore, forthcoming, p. 413).

Reactivated former military-grade firearms are not the only terrorism-related threat linked to conversion. Forensic institutions have come across converted fully automatic blank-firing handguns such as the Zoraki 917 and 925 in several countries (Small Arms Survey and EMPACT, 2017). These weapons have not been used in terrorist events to date, and expert opinion is divided on their capacity to withstand sustained automatic fire (Small Arms Survey and EMPACT, 2017). It is nevertheless important to closely monitor the potential to convert readily available fully automatic blank-firing guns. ●



The question of where a conversion occurs and who is involved can be sensitive, with some officials being quick to assert that the illicit firearms they encounter are always converted abroad.”

## The mechanics of conversion

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## Where does conversion take place?

The question of where a conversion occurs and who is involved can be sensitive, with some officials being quick to assert that the illicit firearms they encounter are always converted abroad (Small Arms Survey and EMPACT, 2017). Conversion can of course occur in countries where the firearms are initially sourced or through which they transit. Polish organized crime groups involved in acquiring AEWs in Slovakia and smuggling them across Europe converted the weapons in workshops that they rented in Poland, for instance (Small Arms Survey and EMPACT, 2017). In August 2015 the British authorities seized 22 converted Czech-made vz.58 automatic rifles and nine Skorpion vz.61 sub-machine guns in Kent in the United Kingdom. The AEWs had been purchased in Slovakia and converted in Poland before reaching Boulogne-sur-Mer, France, from where they were transported by ship to the United Kingdom (NCA, 2016).<sup>51</sup>

The available evidence points to the existence of firearms conversion workshops in a range of countries. A number of recent cases and reports suggest that conversion actually often occurs in the same countries where guns are finally acquired or used, sometimes on a large scale. This practice may be attractive to traffickers and end users because it limits the risks associated with smuggling fully functioning firearms across borders.

Law enforcement officials in Belgium, for instance, have seized weapons that were converted both in-country—with the help of online tutorials—and abroad (Small Arms Survey and EMPACT, 2017; Duquet and Goris, forthcoming, p. 43). In the Netherlands, converted alarm weapons were initially modified abroad, but in recent years the practice of domestic conversion has reportedly increased (Bruinsma and Spapens, forthcoming, p. 316). In 2016, the Spanish authorities also identified and dismantled four illicit workshops for the conversion of alarm weapons and the production of ammunition in Spain (Europol, 2017a). Conversion workshops are also regularly dismantled in Ukraine, where local demand is high (Martyniuk, 2017; SSU, 2017a; 2017b).

In the United Kingdom, several reactivation workshops have been dismantled over the last 12 years. In 2005–07 the London Metropolitan Police traced reactivated MAC-10 machine pistols that were used in a series of criminal discharges to an individual who was converting them in an illegal factory at a farmhouse near Reading. He had purchased 90 blank-firing MAC-10 machine pistols from a company in London (Holtom, James, and Patmore, forthcoming, pp. 401–2). In 2009 Merseyside police uncovered an illegal firearms factory and an industrial unit in Liverpool that two individuals used to reactivate at least 45 firearms, including Uzi and Sten sub-machine guns (Holtom, James, and Patmore, forthcoming, p. 402).

A number of conversion workshops, some of which reactivated dozens of weapons, have also been dismantled in France. In 2014, for instance, the 49-year-old owner of a firearms business was found guilty of reactivating firearms that included AK-pattern



assault rifles, a Skorpion sub-machine gun, and a Walther PPK pistol, and supplying them to individuals linked to Corsican organized crime (Florquin and Desmarais, forthcoming, p. 215; L’Obs, 2014).

## Profile of converters

### Organized crime

As illustrated throughout this report, there is no shortage of examples illustrating organized crime involvement in the conversion, smuggling, and use of readily convertible firearms (see notably the sections on ‘History’ and ‘Serious crime’, above). Presumably, because reactivated firearms provide greater firepower than converted alarm weapons, these linkages appear particularly clear in prominent cases of illicit reactivation. Officials consulted for this study expressed concern that organized crime groups could become more involved in the smuggling of readily convertible alarm weapons, especially as policy-makers are progressively addressing legal loopholes regarding deactivated

**Table 5** Reported black market prices for converted firearms, selected countries

Country	Type/model	Year	Price
Belgium	Converted imitation handguns	2017	< EUR 400 (USD 420) <sup>a</sup>
France	Converted imitation handguns Reactivated automatic rifles/ sub-machine guns	2015–17 2014–15	EUR 45–450 (USD 50–450) <sup>b</sup> EUR 600–1,500 (USD 730–1,820) <sup>c</sup>
Lithuania	Converted imitation handguns	2005–09	GBP 300 (USD 600) <sup>d</sup>
Netherlands	Converted imitation handguns	2008	EUR 300–500 (USD 470–790) <sup>e</sup>
United Kingdom	Converted imitation handguns Reactivated sub-machine guns Reactivated handguns	2010 2010 After 2010	GBP 2,700 (USD 4,070) <sup>f</sup> GBP 5,000 (USD 7,530) <sup>f</sup> GBP 3,000 (USD 4,800) <sup>g</sup>

<sup>a</sup> Rate on 1 March 2017.

<sup>b</sup> Rate on 1 March 2016.

<sup>c</sup> Rate on 1 January 2015.

<sup>d</sup> Rate on 30 June 2007.

<sup>e</sup> Rate on 30 June 2008.

<sup>f</sup> Rate on 30 June 2010.

<sup>g</sup> Rate on 30 June 2011.

Sources: Bruinsma and Spapens (forthcoming, p. 297); Duquet and Goris (forthcoming, p. 52); Florquin and Desmarais (forthcoming, pp. 192–95); Holtom, James, and Patmore (forthcoming, pp. 397, 399); *Manchester Evening News* (2011)

firearms and AEWs (Small Arms Survey and EMPACT, 2017). Moreover, price differences for converted firearms among European countries illustrate the potential profits involved in such smuggling (see Table 5).

The available information nevertheless suggests that firearms are possibly being converted in all European countries, and that not only organized crime groups undertake these activities. The ease of access to deactivated and alarm weapons means that a range of individuals are potentially able to carry out illicit conversions. Due to the varying levels of skill needed for different types of conversion (see Box 2, for instance), individual converters can include both highly skilled technical experts and laypersons using open-source information (Small Arms Survey and EMPACT, 2017).

## Former employees of gun-manufacturing firms

Former employees of gun-manufacturing firms in particular possess the skills to convert illicit firearms. This is the case in Belgium, for instance, where individuals who previously worked in the Belgian arms industry have been arrested for reactivating firearms at home. Police records of the illicit production of firearms show a high concentration of such cases in Liège province, which is where FN Herstal is located, for example (Duquet and Goris, forthcoming, p. 45). This trend is also reported in Italy, which manufactures a range of firearms, and where conversion expertise appears to be concentrated in Naples, Calabria, and Sicily (notably in Palermo and Catania) (Strazzari and Zampagni, forthcoming, p. 265).

## Firearms ‘collectors’

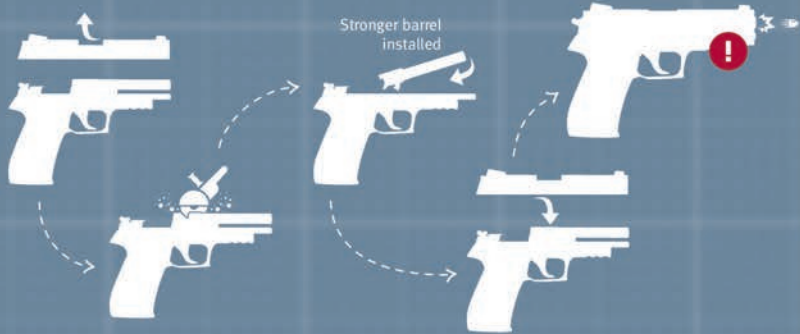
Reports further illustrate how some firearms ‘collectors’—frequently with a military background—amass considerable numbers of firearms and sometimes convert them. In Norway in September 2016, the police seized almost 1,000 unregistered weapons in the town of Hønefoss. The seizure included both fully functional weapons and ‘pieces that can easily be converted into fully functional weapons’, including AG3 assault rifles and MP5 sub-machine guns. Three former or current members of the Norwegian military were among the suspects; police believe at least one of them might have been involved in selling military-grade weapons to organized crime groups.<sup>52</sup> In 2016 a former Polish soldier was found guilty of reactivating more than 40 firearms, including AK-pattern assault rifles, at a workshop in London (Holtom, James, and Patmore, forthcoming, p. 402). In Finland, officials reported the involvement of Finnish gunsmiths in reactivating firearms smuggled from Austria, the Czech Republic, and Germany (Small Arms Survey and EMPACT, 2017). These and other similar cases indicate that basic engineering skills, available workshop space, and the right tools appear to be key features that allow some firearms enthusiasts to convert firearms.

## Three general methods used by criminals to convert alarm pistols

Removing obstructions and inserting a metal sleeve to reinforce the barrel



Replacing the original barrel with a more resistant model of the same calibre



Removing obstructions and adding projectiles to blank ammunition, usually in the form of ball bearings



### Key

- Legal firearm
- Illegal firearm
- † Able to fire solid projectiles
- × Not able to fire solid projectiles

## Box 2 Recent techniques used to convert alarm weapons, and the calibres involved

Alarm weapons are typically manufactured with metals whose tensile strength is not equivalent to that of a standard lethal-purpose firearm. This is one of the ways manufacturers attempt to prevent their products from being converted. Barrels are a particularly weak part. Those performing illegal conversions appear to be aware of this and have compensated for it in their methods.

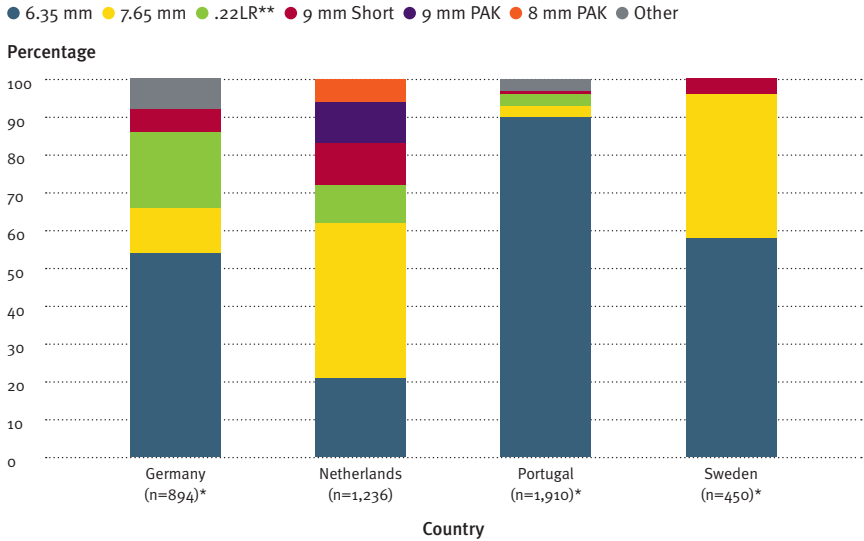
Across Europe, police have identified three primary methods for converting alarm pistols, notably Turkish-made imitation firearms. The most prominent method involves inserting a metal sleeve into the barrel of the alarm pistol. This has two effects: (1) it strengthens the barrel by reinforcing it; and (2) it also shrinks the diameter of the barrel, thus reducing the size of the ammunition that the weapon can chamber. With this method, alarm guns designed to fire 9 mm PAK will typically fire 7.65 Browning cartridges, while 8 mm PAK will fire 6.35 Browning.

Another technique involves replacing the original barrel with a stronger model of the same calibre. Because alarm pistols are designed to chamber shorter, non-bulleted ammunition, the bulleted ammunition needs to be short in order to fit inside the chamber. For example, the length of the 9 mm PAK is 22 mm (9 × 22 mm PAK). Widely available bulleted 9 mm Luger ammunition is generally too long to fit in the chamber designed for 9 mm PAK. Therefore, converters will use a shorter 9 mm bulleted round (9 × 17 mm or 9 mm Short) to get round this problem. The 9 mm Short cartridge case dimensions are generally compatible with the 9 mm PAK chamber, so the firing pin, extractor, and ejector all work properly, thus permitting the firearm to chamber and fire. Additionally, 'the operating pressure is much lower than 9 mm Luger and therefore less likely to result in a catastrophic failure'.<sup>53</sup> Unlike the 9 mm Luger, the 9 mm Short is not a calibre commonly found in Europe, and one firearms investigator suggested that the presence of a 9 mm Short round at a crime scene is a good indicator that the weapon used was a converted alarm firearm.<sup>54</sup>

A third way of converting alarm handguns is to remove their obstructions and to add projectiles to the blank ammunition, usually in the form of small ball bearings. This is considered the easiest method. According to forensic police, 8 mm PAK fitted with a steel ball bearing produces enough energy to easily penetrate the skin, and is considered to be lethal.<sup>55</sup> It should also be noted that multiple studies have confirmed that both 8 and 9 mm PAK ammunition can be lethal even without a projectile. Firing a blank cartridge directly at someone's head, neck, or chest if the gun's muzzle is directly touching the body part is 'likely to cause a fatal injury' (see also Image 4).<sup>56</sup>

Data obtained from forensic institutions in Germany, the Netherlands, Portugal, and Sweden suggests that 7.65 and 6.35 mm conversions are the most common in these countries (see Figure 1). More systematic data recording is needed, however, to confirm whether this is a pan-European trend, especially because some countries do not record data on blank calibres such as 8 mm and 9 mm PAK.

**Figure 1** Calibres of converted imitation firearms examined by forensic institutions in selected countries (%)



Notes:

\* These countries do not collect data on the use of blank-calibre weapons (8 and 9 mm PAK).

\*\* .22LR is a calibre commonly used with converted alarm revolvers.

Sources: German data (2009–September 2017) from email correspondence with a Bundeskriminalamt forensic investigator, 15 September 2017; Netherlands data (2009–16) provided by the Netherlands Forensic Institute, June 2017; Swedish data (January 2010–July 2017) provided by a Swedish police forensic expert, 15 August 2017; Portuguese data (1999–2015) supplied by a Portuguese police forensic investigator, 29 June 2017

## Self-trained individuals

Other cases illustrate how ingenious, self-trained individuals with no particular prior expertise can convert firearms at home, thanks notably to resources and instructions obtained online. On 25 April 2013, for instance, a 19-year-old man shot three people dead in Istres, France, using a reactivated Romanian AIM AK-pattern rifle.<sup>57</sup> A subsequent investigation revealed that he had purchased the deactivated weapon for EUR 267 (USD 340<sup>58</sup>) on a German website in 2012. He reactivated it successfully on his third attempt using a hydraulic press and instructions he found on specialized online forums.<sup>59</sup> Similarly, as part of Operation Ruger in September 2017, Spanish Guardia Civil officers arrested a self-taught 24-year-old man who was converting alarm and deactivated handguns and selling them on the dark web to customers in Germany, Spain, and the United Kingdom, as well as in Asia and the United States (ARES, 2017; Ortega Dolz, 2017).



**Image 4** Test firing of the impact of a ball bearing fitted into 8 mm PAK ammunition. The penetration of the projectile is considered potentially lethal. Test conducted by the Ballistics Department of the Guardia Civil. Photo taken on 19 April 2017. Source: Benjamin King/Small Arms Survey

## Smuggling patterns

### Ant trafficking

Ant trafficking, or the movement of small-scale shipments of weapons across borders, is considered a primary modus operandi for smuggling firearms to and within Europe.<sup>60</sup> Such transfers typically involve fewer than a dozen firearms per shipment, which are transported in private vehicles, boats, or buses.<sup>61</sup>

Ant trafficking also appears to be a common way of smuggling both readily convertible and converted firearms in Europe, as several cases already referred to in this report illustrate. In another incident, on 6 March 2016 UK Border Force officials arrested two Lithuanian nationals in Dover who were transporting 10 Russian Federation-made Baikal handguns, 10 silencers, and 100 rounds of 9 mm ammunition in a private vehicle. The firearms, originally 8 mm gas pistols, had been converted to fire 9 mm ammunition, the serial numbers had been filed off, and the barrels had been threaded to fit a silencer. The two smugglers had concealed the weapons in a purpose-built hiding place near

the vehicle's transmission housing. They were sentenced to ten and 15 years respectively in prison, and investigators believed they were part of a larger network (NCA, 2017b).

Ant trafficking is not limited to the United Kingdom. Finnish officials have reported the smuggling of deactivated and reactivated AK-pattern assault rifles from Austria, the Czech Republic, and Germany through Finland and into the Russian Federation, for example. Both organized crime groups and politically motivated groups are suspected of organizing this trade (Small Arms Survey and EMPACT, 2017). Firearms deactivated in Spain have also been smuggled into and reactivated in France for criminal use. In 2014 a Marseille-based retiree was sentenced to four years' imprisonment for purchasing 132 deactivated handguns over several years—including 75 Glock pistols—from a shop in Barcelona, Spain. He transported the weapons back to France in small numbers in his vehicle and reactivated them at home by simply replacing the barrels with others purchased online from the United States. He sold them to individuals linked to criminal circles, and several of the pistols were subsequently used in murder cases.<sup>62</sup>

## Online trade and the use of parcel and postal services

In 2017 Europol stated that the internet, including dark web markets, 'allows individuals with no or limited connections to organised crime to procure firearms' and even become actors themselves in firearms trafficking. Furthermore, 'this development has resulted in a significant increase in the use of parcel and postal services to traffic firearms' (Europol, 2017c, p. 54). This report has reviewed several cases involving the use of online platforms to support various aspects of firearms conversion. These aspects include the purchase of thousands of AEWs—including those that Amedy Coulibaly used during the January 2015 Paris attacks—from online Slovakian firearms retailers, the use of online conversion tutorials by individuals who train themselves to convert firearms, and the online purchase of parts such as barrels that are essential for certain types of conversions.

The most significant cases have involved the procurement of readily convertible firearms from online retailers operating in countries that impose few restrictions on these weapons. Once purchased, many of the weapons are simply shipped by postal or parcel (courier) services to customers. Intelligence sources note, for instance, that AFG Security—one of the Slovakian companies that has sold readily convertible AEWs online—sent more than 4,000 packages to 24 EU member states between January 2013 and November 2014. These figures are difficult to interpret, however, because it is possible that some packages only contained accessories, while others may have included several firearms.<sup>63</sup>

Another prominent case involved the seizure of thousands of readily convertible deactivated firearms, including large numbers of deactivated Spanish military rifles, during

Operation Portu in Spain in 2017 (see ‘Law enforcement operations’, below). The weapons were housed in a sports equipment store, the Cantabrico Militaria, which served as a cover for extensive sales of readily convertible weapons. The deactivated firearms had been acquired legally, before Spain strengthened its deactivation standards in 2011. The sports equipment store functioned as a distribution hub where readily convertible firearms were sold and shipped through fast parcel services to both Spanish and foreign customers (Small Arms Survey and EMPACT, 2017; Europol, 2017b).

In another case, in June 2016 the Italian authorities arrested two members of the ‘Ceusi’ mafia clan after they had purchased more than 160 deactivated firearms in Slovakia. They had reactivated some of the weapons and sent them to Malta through parcel services, and reportedly maintained ties with Egyptian organized crime groups involved in smuggling migrants (Europol, 2017c, p. 54). In Sweden, converted weapons arrive in the country via postal services, with 70 per cent of seized firearms being trafficked in this way. Some converted firearms are reportedly also purchased on the dark web and shipped in parts and components through parcel services. They are then assembled or converted using open-source tutorials (Small Arms Survey and EMPACT, 2017).

Interestingly, and despite growing concerns over and examples of trafficking in readily convertible firearms on the dark web, most cases appear to involve open internet platforms, including legally registered firearms retailers and businesses. Indeed, a recent analysis of firearms trafficking on the dark web found very limited evidence of a trade in converted firearms on the so-called ‘cryptomarkets’ (Persi Paoli et al., 2017, p. 46). There is, however, broad agreement among law enforcement officials that this practice is only likely to grow, and that it should therefore be closely monitored (Small Arms Survey and EMPACT, 2017). ●



“During the first decade of the 21<sup>st</sup> century inconsistent legislation among EU member states aided the proliferation of readily convertible alarm pistols.”

## The response

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## Regulatory measures

The 1991 EU Firearms Directive provided European member states with a set of minimum national legislation standards for the regulation of civilian firearms acquisition and possession (EU, 1991). The directive is most notable for defining categories under which firearms should be legally classified, and the associated civilian ownership regulations. The passing of the directive triggered significant changes in national legislation, as EU member states began amending their laws to make them comply with the new standards.

It also appears likely, although not proved, however, that the passage of the Firearms Directive, and the subsequent increased restrictions on civilian ownership of real firearms in several states, contributed to the emergence of converted firearms as an alternative source of weapons. The Spanish authorities, for instance, observe a direct link between the emergence of converted firearms on the national territory and their country's 1993 adoption of the Firearms Directive into national law.<sup>64</sup>

Firearms conversion—in the sense of converting a weapon that is incapable of expelling a projectile into one that can—did not appear in the original 1991 Firearms Directive.<sup>65</sup> The original definition of a firearm also omitted mention of potentially 'convertible' objects from its scope. This term would not appear until a 2008 amendment (EU, 2008). In fact, the 1991 Firearms Directive explicitly indicated that alarm weapons and deactivated firearms shall not be considered to be firearms under the law (EU, 1991, Annex 1, sec. III (b)).

A 2000 European Commission report acknowledged problems in the regulation of deactivated, or 'neutralised', weapons. The report noted that some states had already enacted more stringent legislation for deactivated and compressed air weapons, such as subjecting them to the same restrictions as those for category C firearms, which are subject to declaration (EC, 2000, p. 11). The report also noted that due to the threat of reactivation, most member states were in favour of the EU developing common technical standards on deactivation (EC, 2000, p. 20). This report did not, however, result in immediate changes to EU-wide regulations.

The first major amendment to address illicit firearms conversion came in 2008 (EU, 2008). This amendment aligned the Firearms Directive with the relevant articles of the UN Firearms Protocol—which the European Commission had signed on 16 January 2002—and attempted to address concerns about deactivation raised in the 2000 European Commission report.<sup>66</sup> The 2008 amendment also noted that intelligence showed that converted firearms were a growing concern (EU, 2008, para. 4). The changes introduced included a revised definition of what constitutes a firearm. The new wording, taken nearly verbatim from the UN Firearms Protocol, added weapons that 'may be converted to expel a shot' to the definition of a firearm (EU, 2008, art. 1

(a) 1). The amendment went on to clarify what constitutes a potentially convertible object: these are objects that resemble a firearm and are manufactured with materials that enable them to be converted (EU, 2008, art. 1 (a) 1). While this definition was an important evolution, determining the manufacturing standards that would be necessary to prevent conversion was still left to the interpretation of EU member states. Deactivation was also included in the amendment. The new definition of deactivation stated that all essential parts of the firearm must be rendered permanently inoperable and that all deactivated firearms must be clearly marked as such (EU, 2008, para. 13).

During the first decade of the 21<sup>st</sup> century inconsistent legislation among EU member states aided the proliferation of readily convertible alarm pistols. States such as Lithuania had become known as source countries because of their loose legislation on the acquisition of alarm pistols. Portugal also became known as a source country, even though many of the alarm weapons that were converted in that country were originally purchased in Spain. Organized networks would purchase Tanfoglio GT 28 alarm pistols in Spain and bring them to Portugal for conversion.<sup>67</sup> The converted guns either stayed in Portugal or were distributed throughout Europe (Starink and Beemsterboer, 2010). At the time, in both Spain and Lithuania, a person aged 18 years or older could purchase an alarm gun without any registration or record of the transaction.

Early control efforts focused on banning certain problematic models. Lithuania, for instance, banned the import of the Russian Federation Baikal IZH-79-8 pistol in January 2007 (Čiupala, 2013). Banning one model, however, failed to stop the proliferation of converted weapons, as traffickers and converters turned to new models such as the Italian-made ME38 and Olympic 38 (Small Arms Survey and EMPACT, 2017). Lithuania only succeeded in curtailing firearms conversion on its territory in 2011, when it introduced new legislation that required owners to register their alarm guns (Čiupala, 2013).

In the wake of the 2015 terrorist attacks in Paris the EU quickly moved to establish common guidelines on deactivation standards (EC, 2015). The new regulations were first adopted on 15 December 2015 and entered into force in April 2016. They set standards for the entire deactivation process, starting with the entities authorized to perform the deactivation, the steps required for various weapons parts to be considered permanently inoperable, and the marking and verification requirements. Many of the technical requirements are found in the document's annex (EC, 2015, pp. 66–70). This annex caused considerable debate among experts about the rigour of the deactivation procedures prescribed, because some states did not feel that the standards were adequately stringent to ensure the permanent deactivation of a firearm. After a review of the standards and a series of stress tests, the revised annex was finally adopted on 5 March 2018 (EC, 2018). In parallel, the Organization for Security and Co-operation in Europe (OSCE) adopted 'Minimum Standards for National Procedures for the Deactivation

of Small Arms and Light Weapons' in February 2018, which will be appended to its *Handbook of Best Practices on Small Arms and Light Weapons* (OSCE, 2018).

Conversion was also a cornerstone of the 2017 amendment to the Firearms Directive. The amendment primarily focused on AEWs, stating that these weapons posed high risks, given their easy conversion, physical features, and capabilities (EU, 2017, para. 20). Under the amendment, deactivated firearms must now be classified as category C firearms, which have to be declared to the authorities. AEWs are to be classified in the same legal category as the original weapon and are therefore subject to the same restrictions as their unaltered versions (EU, 2017, pp. 37–38). This renders the sale of AEWs with automatic fire capabilities illegal, because the amendment to the EU directive also prohibits civilian possession of automatic firearms (EU, 2017, para. 22).

Interestingly, however, the new Firearms Directive does not appear to apply to firearms that are altered to fire Flobert ammunition, despite the concerns noted above about the reversibility of these modifications. This is because the regulation specifically applies to decommissioned weapons that are incapable of expelling a projectile. Presumably, firearms modified to fire Flobert ammunition should still be classified in the same legal category as other Flobert-calibre firearms.

Another issue omitted from recent efforts to address firearms conversion has been the destruction of surplus firearms. As discussed above, the proliferation of deactivated German police firearms in the 1970s, the deactivated Spanish military rifles seized during Operation Portu, and the Slovak-origin AEWs were all originally surplus state-owned weapons that were modified for the civilian market and subsequently reactivated. While many states have policies on the management of surplus stockpiles, the EU Firearms Directive does not offer guidance on this issue. Nor does the Firearms Protocol, to which EU member states are parties. Guidance on surplus firearms policy does exist at the international level, however. Both the OSCE *Handbook of Best Practices on Small Arms and Light Weapons* and the UN Programme of Action recommend that surpluses be destroyed as a way to reduce the risk of diversion (OSCE, 2003, p. 3; UN, 2001, art. II, para. 18). The new OSCE deactivation standards further recognize the risks that deactivated weapons could be reactivated and misused, and state that 'Participating States may require destruction of SALW [small arms and light weapons] rather than deactivation' (OSCE, 2018, p. 7).

Alarm pistols are also addressed in the 2017 EU Firearms Directive amendment. According to Article 10a, states shall classify alarm pistols that are capable of being converted as real firearms (EU, 2017, art. 10a.2). The determination of which alarm pistols qualify as being capable of conversion is to be based on manufacturing specifications.<sup>68</sup> In late 2017, the European Commission and representatives of the alarm weapons industry were discussing these technical specifications, based on technical recommendations that the CIP drafted. The European Commission will adopt the specifications as an implementing act by 14 September 2018.<sup>69</sup>

## Enforcement

### Law enforcement operations

European law enforcement agencies have sought to counter the proliferation of converted firearms notably through several large-scale joint operations. In 2015 and 2016 EMPACT Firearms and Europol coordinated Operation Mars following investigations into the spread of Slovak-origin AEWs in Belgium, Finland, France, Germany, the Netherlands, Poland, Romania, Spain, Sweden, and the United Kingdom. It resulted in 160 detentions; 70 raids and house searches; and the seizure of more than 635 weapons, 150 hand grenades, 200,000 cartridges, and 150 kg of explosives.<sup>70</sup> In France alone the operation led to the seizure of 122 AEWs and involved 37 arrests in March 2015 (Small Arms Survey and EMPACT, 2017).

Joint operations involving several countries—including Germany, Poland, and the United Kingdom—that focused on the smuggling of Slovak-origin AEWs showed that Polish ID cards had been used to purchase weapons from a gun retailer in Slovakia. Based on the store's book-keeping records and further investigations, officials estimate that Polish organized crime groups had purchased as many as 2,000 AEWs. They then converted them before smuggling them into countries such as the Netherlands and the United Kingdom. These criminal networks were also involved in drug trafficking (Small Arms Survey and EMPACT, 2017).

Operation Bosphorus in 2016 was the first European operation to target alarm pistols (of Turkish manufacture), which had been trafficked into several European countries via Bulgaria. While such firearms could be bought with few restrictions in Bulgaria, in many other European countries the acquisition, import, or possession of these firearms is subject to a declaration or authorization. These inconsistent regulations, coupled with free movement across European borders, had led to the smuggling of alarm weapons that were legally bought in Bulgaria to other European countries where they were more strictly regulated (Small Arms Survey and EMPACT, 2017).

Authorities in several destination countries for these weapons, including Belgium, Cyprus, Finland, Greece, the Netherlands, Poland, Romania, Spain, Sweden, and the United Kingdom, with the support of Bulgaria and Europol, investigated their nationals' acquisition and possession of these firearms. Based on Bulgarian sales records, in 2016 authorities involved in the operation searched 421 houses; arrested 245 individuals; and seized 556 gas and alarm pistols—131 of which were converted—108 other firearms, and 33,748 rounds of ammunition. Bosphorus also captured tools for converting firearms and firearms accessories, and dismantled four firearms conversion workshops in Spain (Europol, 2017a).

On 12–13 January 2017 the Spanish-led and Europol-supported Operation Portu resulted in the seizure of more than 10,000 readily convertible deactivated rifles, as well as

anti-aircraft machine guns, 400 shells, grenades, pistols, revolvers, and parts used to reactivate weapons (Europol, 2017b). The investigation revealed that the perpetrators had worked with a diverse client list, including organized crime and drug- and firearms-trafficking groups with both domestic and international criminal ties. The sports equipment store owner identified during the operation maintained business contacts in Belgium, France, Germany, Italy, and the United States. No links to terrorist actors have been found so far (Small Arms Survey and EMPACT, 2017).

## Enforcement challenges

Despite a gradually more robust regulatory environment and the mobilization of resources through joint operations such as those discussed above, countering firearms conversion remains a challenge for European law enforcement agencies. Converted firearms can be difficult for untrained personnel to distinguish from real firearms, and the potential clues left on the weapon during the conversion process are difficult for the non-expert to identify. Moreover, it can be difficult to establish that a firearm marked as deactivated was in fact subsequently modified to fire live ammunition. There have also been cases where fake deactivation marks are applied to lethal-purpose firearms, or where parts of a firearm marked as deactivated are combined with other firearms parts to produce a lethal-purpose weapon, which can further mislead investigators (Museau, 2017, pp. 35, 43). Lastly, some of the converted imitation firearms seized during Operation Bosphorus were reportedly easy to reverse or ‘de-convert’ in a matter of minutes, causing further challenges for law enforcement (Small Arms Survey and EMPACT, 2017; Europol, 2017a).

Several experts consulted during this study expressed concern about challenges regarding the traceability of converted firearms. Markings on alarm pistols usually provide satisfactory information on the manufacturer and a serial number that can help identify the first purchaser of the weapon (Small Arms Survey and EMPACT, 2017). Yet the fact that these weapons are then often sold without a licence or registration in some countries<sup>71</sup> can greatly complicate efforts to identify a weapon’s chain of custody more comprehensively, and in particular the point at which a weapon is illicitly transferred or converted.

Where investigations to dismantle smuggling networks were successful, they relied primarily on retailers’ ledgers and sales books rather than any formal registration system (Small Arms Survey and EMPACT, 2017). Operation Bosphorus and efforts to counter the proliferation of AEWs of Slovakian origin are two clear examples of the investigative value of retailers’ book-keeping records for tracing converted firearms and disrupting smuggling networks, provided that they include information such as the purchaser’s basic identification information or credit card details. In the absence of official registration

requirements, establishing minimal record-keeping requirements for retailers selling alarm and deactivated firearms appears to be critical for ensuring these weapons' traceability and thus for minimizing their criminal appeal.

## Outreach and awareness raising

Manufacturers of imitation firearms can play an important role in ensuring that the design of their products minimizes the risk of illicit conversion. In the past some companies stopped the production of certain readily convertible models—such as of the Tanfoglio GT 28—albeit only after they had proliferated in converted form. Certain technical features, such as front venting or the type of material used to produce critical parts of the imitation firearms, are recognized to be particularly prone to conversion (King, 2015, p. 3; Small Arms Survey and EMPACT, 2017). This has led some manufacturers to choose other, less-sensitive designs, while some countries have tried to regulate this area (King, 2015, p. 3). Yet it appears that changing weapons designs remains problematic for some manufacturers, because it may have significant and costly implications not only for their production costs, but also in some cases for the safety of their customers (Small Arms Survey and EMPACT, 2017).

Given the recent prominence of Turkish-manufactured alarm handguns among seized converted firearms, dialogue with these manufacturers appears to be particularly critical. The Turkish authorities are seemingly aware of the problems posed by lax standards for controlling the export of imitation firearms, for several reasons. Firstly, the Ministry of the Interior reported in 2014 that arms smugglers were abusing these low standards by smuggling the models designed for export back into Turkey and converting them for domestic use (KOM Presidency, 2014, p. 80). Secondly, the country's exports have come under international scrutiny after Turkish-manufactured alarm handguns were found to have been transferred in large numbers to countries subject to UN arms embargoes. In 2013, for instance, the UN Sanctions Committee on Libya confirmed to the Turkish authorities that materiel that included hunting rifles/cartridges, blank-firing pistols, and rubber bullets, which are not subject to export controls in Turkey, is indeed subject to the arms embargo on Libya (UNSC, 2016, p. 160). While the Turkish authorities claim to have taken measures to address both problems (KOM Presidency, 2014, p. 80; UNSC, 2016, p. 160), the continuing availability of readily convertible Turkish models in Europe as evidenced in this report illustrates the need for reinforced discussions with the country and its manufacturers to address the remaining gaps.

While persistent regulatory loopholes and inconsistent legislation across European states facilitate this trade, internet and fast parcel companies may also be usefully engaged in addressing the challenge of firearms conversion. Customs officials consulted for this report, for instance, suggested improving information exchanges between law enforcement agencies and other relevant actors regarding the brand names and fake

markings applied to readily convertible firearms (Small Arms Survey and EMPACT, 2017). A keyword database could be established that may be useful not only to customs authorities, but also to internet platforms and fast parcel services in attempts to identify and screen potentially problematic trades or shipments. ●





The policy challenges have been particularly difficult in Europe, given the free movement policy and the variations in national firearms legislation as countries implement new guidelines at a different pace.”

## Conclusion

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**R**egulatory measures have consistently altered the nature of firearms conversion. To date, regulations have attempted to address emerging or already well-established types of readily convertible weapons. But as new regulations are enacted, new types of firearms conversions appear. The policy challenges have been particularly difficult in Europe, given the free movement policy and the variations in national firearms legislation as countries implement new guidelines at a different pace.

The 2017 EU Firearms Directive illustrates the reactive nature of the current response. This amendment—once fully enforced—should solve the problem of readily convertible AEWs by requiring states to categorize them as real firearms in their respective pre-modification categories. The wording, however, allowed producers of AEWs to adapt and instead modify their military surplus firearms to turn them into poorly regulated Flobert-calibre weapons. Experts now worry that these weapons may be easily retro-converted into their original military-grade calibres. In this case, a policy that focused on regulating the process of downgrading, but not deactivating, a firearm’s capabilities might have created a better solution. If all firearms that are modified and as a result risk being legally downgraded—be it to AEWs, Floberts, or another iteration—must be classified in their original firearms category—just as the 2017 amendment did for AEWs—then all transactions would be highly regulated and few illicit conversions would appear. Moreover, clearer policies on the management and destruction of surplus government firearms have the potential to prevent or at least reduce the scale of future conversion pipelines. Indeed, surplus firearms modified and sold on the civilian market have been at the core of the recent spread of readily convertible AEWs and Flobert-calibre weapons.

It nevertheless seems that since 2015 the EU has made substantial progress in curtailing the threat of converted firearms. The new deactivation standards will cause some states to perform better in terms of controlling deactivations. Manufacturers of alarm weapons will need to meet new standards that should increase the difficulty of performing firearms conversions. Presumably the new regulations will impose new restrictions and requirements on any alarm weapon deemed readily convertible. Based on Lithuania’s experience, putting in place licensing and registration requirements for alarm weapons has the potential to reduce the criminal use of these weapons.

None of these initiatives curtails the demand for firearms, however, so policy-makers should already be looking out for the next potential market replacements. 3D printing, 80 per cent receivers,<sup>72</sup> and even certain airsoft guns are seen as being possible threats. Regulations on firearms parts could become another key issue, as converters may seek to combine pressure-bearing parts with new objects that can serve as frames or receivers.

Beyond the regulatory level, several actors could be more meaningfully engaged to tackle the threat of firearms conversion. Joint operations such as Bosphorus, Mars, and Portu have successfully dismantled specific sources of converted firearms, while

EMPACT Firearms has developed into a European counter-proliferation hub. Support for further cooperation and information exchange among European enforcement agencies appears to be critical to tackling the evolving proliferation threats. The forensic community has the potential to play a crucial role in identifying new conversion patterns and the actors involved. Ensuring that ballistics experts examine all seized firearms, that data management systems better take into consideration the technical specificities of converted firearms, and that the resulting intelligence is appropriately shared across countries and with field agents would greatly assist in countering the proliferation and illicit use of these weapons. Similarly, working more closely with manufacturers, retailers, and postal or fast parcel service providers seems to be key for successful interventions and responses. Finally, European states are responsible for monitoring the effectiveness of the EU's response to the problem of converted firearms. Indeed, because such firearms are spreading to other continents, other countries will look to Europe for good practices and workable solutions. ●

## Endnotes

- 1 See, for instance, SIPRI (2014).
- 2 The participants represented Bulgaria, Finland, France, Germany, Lithuania, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom, the European Commission, the South Eastern and Eastern Europe Clearinghouse for the Control of Small Arms and Light Weapons, the South-east European Law Enforcement Center, Arquebus Solutions, and the Flemish Peace Institute.
- 3 These include the 2016 and 2017 annual meetings on firearms and gunshot residues of the European Network of Forensic Science Institutes (ENFSI), and the 2017 Interpol Firearms Forensics Symposium (IFFS).
- 4 Project SAFTE is coordinated by the Flemish Peace Institute, with eight research teams undertaking country case studies; see Duquet (forthcoming). The Small Arms Survey undertook the case study on France (Florquin and Desmarais, forthcoming).
- 5 See King (2015, p. 2).
- 6 In 2008 the EU Firearms Directive amended its definition of what constitutes a firearm to comply with the European Commission's signing of the UN Firearms Protocol. The new definition is a near-exact copy of the Firearms Protocol's definition.
- 7 Not included in this report are objects not resembling firearms that can be converted into lethal weapons, such as pen rocket flares, which have been seized in France since 2015 (see Desmarais, 2016; *Valeurs Actuelles*, 2015).
- 8 Written correspondence with Arquebus Solutions ballistics expert, 5 February 2018. See also King (2015, p. 3).
- 9 Author interview with French ballistics specialist, 27 January 2018.
- 10 The term 'Airsoft' is a brand name, but has become synonymous with the industry such that all products in this category are now referred to as airsofts (Vasquez, 2014).
- 11 Written communication with British law enforcement official, 12 March 2018.
- 12 See Wikipedia (2017).
- 13 See Balistas Weapons Specialists (n.d.).
- 14 These weapons retain the original 9 mm PAK chambering, but use an 'adapter hub' combined with an unobstructed barrel, meaning that there is a risk that they could be used with more lethal modified 9 mm PAK and BB calibre (written correspondence with Arquebus Solutions ballistics expert, 5 February 2018).
- 15 Author interview with Spanish Guardia Civil representative, Madrid, 27 April 2017.

- 16 Author interview with Spanish Guardia Civil representative, Madrid, 27 April 2017.
- 17 Author interview with German Bundeskriminalamt, Wiesbaden, Germany, 18 January 2017.
- 18 Author interview with Spanish Guardia Civil representative, Madrid, 28 April 2017.
- 19 Small Arms Survey and EMPACT (2017); written communication with retired French ballistics expert, 30 January 2018.
- 20 Author interview with Spanish National Police representative, Madrid, 27 April 2017.
- 21 Presentation by Jeannette Henriksson from Statens Kriminaltekniska Laboratorium Sweden at IFFS 2015, Singapore, 7 October 2015.
- 22 The designation of Kosovo is without prejudice to positions on status and is in line with UN Security Council Resolution 1244 and the International Court of Justice opinion on Kosovo's declaration of independence.
- 23 Presentation by Arquebus Solutions ballistics expert, Geneva, 29 June 2017.
- 24 Royal Canadian Mounted Police (RCMP) firearms investigator presentation, Ninth Annual International Firearms Trafficking Conference, Ottawa, 19–23 September 2011.
- 25 Author interview with UN Monitoring Group member, February 2017.
- 26 Correspondence with Spanish Guardia Civil representative, Madrid, February 2017.
- 27 See Desmarais (forthcoming).
- 28 See Jenzen-Jones and McCollum (2017, p. 40).
- 29 See Desmarais (forthcoming).
- 30 See de Tessières (2018, pp. 46–47).
- 31 See, for instance, Jenzen-Jones and McCollum (2017, pp. 40–41); King (2015, p. 8); UNSC (2016, pp. 160–61).
- 32 National Crime Agency photos of the seized Turkish-manufactured 4 mm and 6 mm Flobert revolvers reveal that some were proofed in the Czech Republic in 2017. A 23-year-old Czech national residing in the United Kingdom and a 59-year-old Polish man who was in the vehicle were charged with 'knowingly being concerned in the fraudulent evasion of a prohibition or restriction on a prohibited weapon or ammunition'. Six other Polish nationals were initially arrested for occupying the vehicle in Coquelles, but no further action was taken against them (NCA, 2017a).
- 33 Written communication with French ballistics expert, 3 November 2017.
- 34 Presentation by Lithuanian police representative, Geneva, 29 June 2017.
- 35 See the list at CIP (2018).
- 36 These numbers suggest a significant decrease compared with the period 1994–2004, during which the proof house deactivated 58,714 firearms (written communication with the Banc national d'épreuve de Saint-Étienne, 24 April 2017; with retired French ballistics expert, 30 January 2018).
- 37 Written communication with retired French ballistics expert, 30 January 2018.
- 38 Author interview with members of the ENFSI Expert Working Group on Firearms and Gunshot Residues, Helsinki, October 2017.
- 39 In the other cases judges may opt to request forensics analysis by private experts who do not have access to the FNIB national ballistics information system (written communication with retired French ballistics expert, 30 January 2018).
- 40 Written communication with the IRCGN, 2 December 2016. Other common models of converted imitation firearms encountered in France include Umarex, Röhm, Atak, Ekol/Voltran, Blow, BBM Bruni, Kimar, Tanfoglio, and Baikal (Small Arms Survey and EMPACT, 2017).

- 41 Written communication with the IRCGN, 2 December 2016.
- 42 Materiel seized in France during Operation Mars in March 2015, for instance, included 122 AEWs, while 47 arrests were made (Small Arms Survey and EMPACT, 2017).
- 43 In Portugal, for instance, from 2013 to 2016 ballistics experts examined eight Zoraki M2906 pistols converted to fire 7.56 mm Browning ammunition. While six firearms left similar tool marks on spent ammunition, examiners could not establish with certainty whether they were the result of the conversion or manufacturing process (Small Arms Survey and EMPACT, 2017).
- 44 This is due to the typically light finishing process involved in the manufacture of these weapons. Finishing processes often introduce the imperfections and irregularities that leave unique marks on ammunition that is used to perform ballistics comparisons (written correspondence with Arquebus Solutions ballistics expert, 5 February 2018).
- 45 For background on class, individual, and sub-class characteristics in ballistics, see *Firearm Examiner Training* (n.d.).
- 46 Written correspondence with Arquebus Solutions ballistics expert, 5 February 2018.
- 47 Author interview with representative of Ultra Electronics Forensic Technology, Dubrovnik, Croatia, 18 October 2017.
- 48 Written communication with retired French ballistics expert, who spoke with Marseille-region forensic doctors, January 2018.
- 49 Written communication with the Section centrale armes, explosifs et matières sensibles (SCAEMS), 12 April 2017.
- 50 Written communication with the SCAEMS, 12 April 2017.
- 51 Written communication with British law enforcement official, 12 March 2018.
- 52 Written correspondence with Norwegian customs officials, 26 October 2017. See also Berglund (2016).
- 53 Written communication with RCMP firearms expert, 15 March 2018.
- 54 Written communication with Finnish firearms investigator, 8 March 2018.
- 55 Author interview with Spanish Guardia Civil forensic experts, Madrid, 28 April 2017.
- 56 Unpublished report by the Finnish Centre for Military Medicine on the lethality of ‘blank-firing guns’. A Finnish firearms investigator provided the report to the Small Arms Survey, 5 March 2018.
- 57 State prosecutor file no. 13117000001, related to the trial held at the Aix-en-Provence Criminal Court, 5–13 January 2017. Access to the criminal file was granted by Avocat Général Pierre Cortes to André Desmarais, a Small Arms Survey ballistics specialist. See also Florquin and Desmarais (forthcoming, p. 201).
- 58 Rate on 30 June 2012.
- 59 He had previously unsuccessfully tried to reactivate two other AIM rifles, which he had purchased on a French website (state prosecutor file no. 13117000001, related to the trial held at the Aix-en-Provence Criminal Court, 5–13 January 2017). Access to the criminal file was granted by Avocat Général Pierre Cortes to André Desmarais, a Small Arms Survey ballistics specialist. See also Florquin and Desmarais (forthcoming, p. 203).
- 60 See, for instance, Savona and Mancuso (2017, p. 8).
- 61 See, for instance, NCA (2016).
- 62 Written communication with French law enforcement source, 15 April 2017; see also Florquin and Desmarais (forthcoming, p. 201).
- 63 Author interview with French law enforcement source, 28 March 2017.
- 64 Author interview with Spanish Guardia Civil representative, Madrid, 28 April 2017.

- 65 In the original text the term ‘conversion’ is used only in reference to a legal alteration to a firearm made by an authorized dealer (art. 1.2). The alterations described in this usage of the term were authorized and performed by properly accredited entities.
- 66 See EU (2008, para. 3).
- 67 Author interview with Spanish National Police representative, Madrid, 27 April 2017.
- 68 Some states already have these regulations. In 2011 the Violent Crime Reduction Act introduced manufacturing specifications for imitation firearms; see UK (2011).
- 69 Written communication with Serge Rayne, Service central des armes, French Ministry of the Interior, 13 December 2017.
- 70 Written communication with EMPACT Firearms official, 23 February 2017.
- 71 See SIPRI (2014, pp. 24–25).
- 72 According to the US Government Accountability Office, an 80 per cent receiver is an item that ‘has been cast or fabricated with most of the features of a finished, functional firearm receiver, but it will require further machining to function as a firearm’ (GAO, 2016, pp. 17–18). These items ‘have no serial numbers and generally no markings; thus, firearms assembled with them are untraceable. In addition, receivers and firearms parts are small and when transported separately may not be easily identified as items intended for the production of firearms. They are also easy to conceal, making it more challenging for customs authorities to detect illicit shipments of such parts’ (GAO, 2016, p. 19).

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