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CONTINUITY AND CHANGE

Extremist-used Arms in Mali

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Front cover photo

'Soldiers from the Light Dragoons and Royal Anglian Regiment, supported by a specialist Royal Engineer search team, have seized a cache of weapons hidden by suspected Daesh terrorists.' (UKMOD, 2021). Published under UK Open Government Licence.

Centrespread photo collage

Photos 1 and 2: Collection of weapons and materiel allegedly captured by JNIM-affiliated extremists in Mali. Source: 'Eagle Eye' @zarrar_11PK/Twitter (Jan. 2024)

Photo 3: Source: JNIM-affiliated extremists displaying an AGS-17, Soviet-era automatic grenade launcher allegedly captured from the Malian army. Source: @MENASTREAM/Twitter (Jan. 2023)

Photo 4: A collection of weapons allegedly captured by IS-affiliated extremists in an attack on Malian soldiers in Kobé. Weapons identified include two AKM rifles, a Zastava M70AB2 rifle, a Romanian PM md. 63 rifle, and an SKS rifle. Source: @war_noir (Jan. 2024)

About the author

Holger Anders is a senior researcher focusing on identifying and tracing illicit arms flows in African conflicts. From 2014 to 2022, he worked as an analyst on terrorism and trafficking with the UN in Mali. He also previously worked with the UN in Côte d'Ivoire and Sudan, and with the Groupe de recherche et d'information sur la paix et la sécurité (GRIP) in Belgium. He holds a doctorate in peace studies and has published widely, particularly on small arms and light weapons control.

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Overview

This Briefing Paper looks at sources and pathways through which al-Qaeda- and Islamic State-linked extremists in Mali obtain their arms, ammunition, and explosives. This review includes an analysis of the materiel's origins, types, and ages. The Briefing Paper presents the author's assessment of some 800 arms and 12,000 ammunition casings that national and international authorities recovered and granted access to following extremist attacks in Mali from 2015 to 2022.

Key findings

- Extremists continue to have access to arms and other materiel—including materiel of recent production—through capture from armed forces and illicit trafficking from the subregion.
- Libya remains a prominent source for illicitly trafficking military materiel to Mali; however, other subregional sources exist. These sources include components for commercial explosives used in improvised explosive devices (IEDs) in Mali.
- Established extremist groups use materiel to support the creation of new cells, which is a key mechanism in the spread of violent extremism in Mali.

Introduction

By 2022, Mali had faced more than a decade of armed violence perpetrated by violent extremists. Since 2015, this violence has also spread from northern to central and southern parts of Mali, resulting in thousands of victims among national and international armed forces, UN peacekeepers, and civilians. This Briefing Paper investigates the arms, ammunition, explosives, and other materiel used by al-Qaeda- and Islamic-State linked extremists ('extremists') as 'tools of violence' used in their attacks from 2015 to 2022. It provides an update on findings previously published by the Small Arms Survey concerning the proliferation and trafficking of illicit materiel in northern Mali prior to 2015.[1]

Specifically, this Briefing Paper focuses on military materiel legally produced and transferred by state actors before being diverted to extremist use in Mali.[2] In so doing, the Briefing Paper examines three topics:

1. continuity in extremist procurement of their 'tools of violence';
2. changes in illicitly trafficked materiel and their sources; and
3. extremist network connections identified by the monitoring of this materiel.

A confidential database maintained by the author provides the basis for the technical information concerning extremist-used arms and other materiel in this Briefing Paper.[3] That database contains information about some 400 extremist attacks occuring across Mali between 2015 and 2022 from sites in which national and international authorities recovered extremist-used materiel that was made available for inspection by the author.[4] The database also contains some 200 entries of extremist propaganda claims—documented in videos and texts on social media—relating to extremist attacks in Mali from 2012 to 2022. Interviewees included in this Briefing Paper are not uniformly identified for reasons of security and confidentiality. All information presented in graphs, illustrative maps, and tables is based on the author's work and information contained within the database.

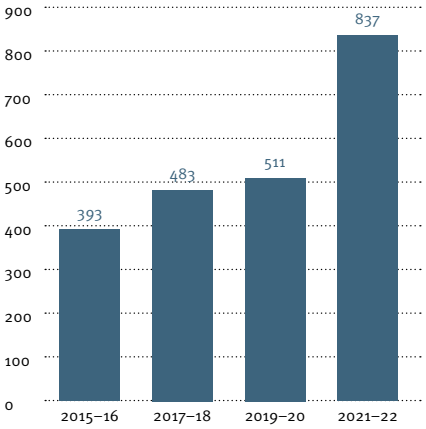
The Briefing Paper first looks at security developments in Mali since 2015.[5] It then looks at extremist-held armaments in Mali prior to 2015 and at continuity and change in these armaments after that. The discussion is supplemented with insights into network connections between extremist groups in Mali.

Map 1 Political map of Mali

Base map data source: OpenStreetMap

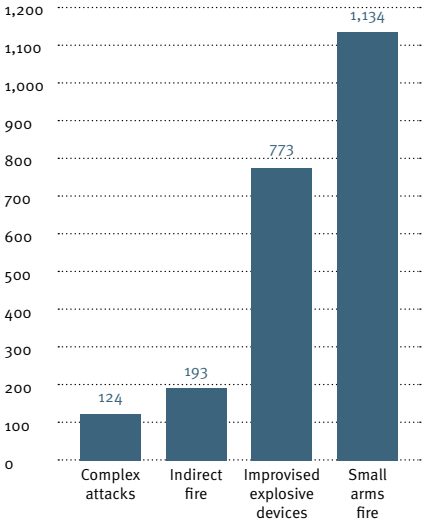
Source: Anders (n.d.)[6]

Figure 1 Biennial numbers of extremist attacks in Mali, 2015–22



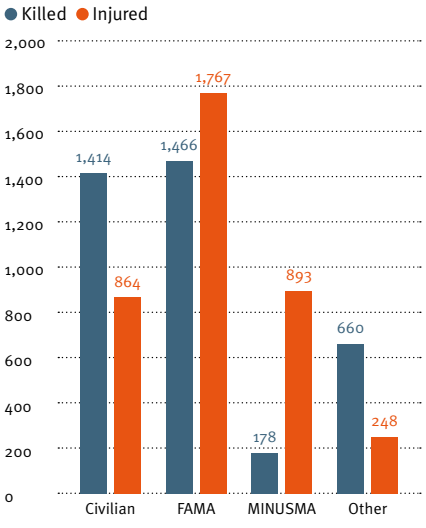
Source: Anders (n.d.)

Figure 2 Numbers of extremist attacks per type of attack in Mali, 2015–22



Source: Anders (n.d.)

Figure 3 Numbers of victims per category in extremist attacks in Mali, 2015–22



Source: Anders (n.d.)

Background

In 2014, al-Qaeda-linked groups operated throughout northern Mali, where they attacked French armed forces, UN peacekeepers, and Malian armed forces (FAMA). In 2015, extremists vastly extended their areas of operation through the emergence of a new allied group in central Mali called Katibat Macina, also known as the Macina Liberation Front (Gaffey, 2015; Dufka, 2016). Around the same time, defectors from these groups pledged allegiance to the rival Islamic State and created the Islamic State in the Greater Sahara (ISGS) group (Le Roux, 2019). In 2017, the al-Qaeda-linked groups in Mali—most likely responding to the emergence of ISGS—merged to form Jama'at Nusrat al-Islam wal-Muslimin (JNIM) (Group for the Support of Islam and Muslims) (ICG, 2021, p. 3). To date, JNIM and ISGS remain the leading perpetrators of extremist-linked insecurity and violence in Mali.

JNIM operates in northern and central Mali and parts of southern and western Mali. ISGS operates primarily in the border areas between Mali, Burkina Faso, and Niger in the north-east of Mali (see Map 2). With the geographic spread of extremist groups from northern to central Mali, there was an increasing number of attacks. As shown in Figure 1, at least 393 extremist attacks occurred in the two years from 2015 to 2016. This number more than doubled to 837 attacks from 2021 to 2022. In total, extremists conducted 2,224 recorded attacks from 2015 to 2022 in Mali.

Figure 2 presents an overview of the distribution of types of extremist attacks in Mali.[7] Of the 2,224 extremist attacks recorded between 2015 and 2022, extremists conducted about half—1,134 attacks or 51 per cent—with small arms such as assault rifles, general-purpose machine guns, and rocket-propelled grenades. In about one-third of attacks—773 attacks or 35 per cent—extremists employed IEDs. In 193 attacks, extremists shelled military camps with rockets or mortar rounds in indirect fire attacks. In 124 attacks, extremists employed a combination of two or more of the listed types of attacks, such as following up on an indirect fire attack with small arms fire against military camps.[8]

Figure 3 illustrates the number of recorded victims per category of victim in the extremist attacks documented above. The 2,224 extremist attacks recorded in Mali between 2015 and 2022 resulted in 7,490 victims. Around

Map 2 Approximate distribution of JNIM and ISGS in Mali, 2022

Base map data source: OpenStreetMap

Source: Anders (n.d.)[9]

half of the victims died in the attacks with 3,718 casualties, and the other half of the victims sustained injuries with 3,772 wounded. Malian Defence and Security Forces experienced the highest number of victims, with 3,233 victims, or about 43 per cent of the total number of victims. Civilians experienced the second highest number of victims at 2,278 victims or about 30 per cent of the total number of victims. After that, victims within the UN peacekeeping missions in Mali follow with 1,071 victims, and victims among other categories of persons including other armed groups, militias, self-defence groups, and the French armed forces with 908 victims.

Several factors arguably contributed to military-led coup d'états in Mali in 2020 and 2021, including the enduring deterioration of security in Mali since 2015, disappointment with the apparent inability of French armed forces to end extremist violence, and socio-economic unrest (Dion and Sany, 2021). In parallel, diplomatic relations between France and Mali increasingly frayed and coincided with the withdrawal of French forces from Mali in 2021 and 2022 (Euronews, 2021; Al Jazeera, 2022). Instead, the transitional Malian authorities further deepened security cooperation with the Russian Federation and the Russian-linked private security company Wagner (Thompson, Doxsee, and Bermudez, Jr., 2022).

Together with Wagner, Malian armed forces launched multiple military operations that targeted presumed extremists in central Mali in 2021 (Bensimon and Vincent, 2022) and parts of northern Mali in the second half of 2022 (Africanews, 2022). These counterterrorist operations resulted in fewer extremist attacks in central Mali in 2022 (Anders, n.d.); however, continued extremist attacks in early 2023 indicate that these operations did not end extremist violence (Euronews, 2023). ISGS also consistently spreads its presence in the Gao and Ménaka regions (The Defense Post, 2023).

Continuity in extremist-used armaments

Extremist-used armaments prior to 2014

As identified by the Small Arms Survey, extremists in Mali used armaments from three main sources prior to 2015. The first was materiel already in illicit circulation

Box 1 Looting of medium- and large-calibre ammunition

There is a high degree of homogeneity among medium- and large-calibre ammunition—defined as ammunition of calibres between 21 mm and 122 mm—in the possession of al-Qaeda-linked groups in northern Mali in 2014 (Anders, n.d.). Medium- and large-calibre ammunition of a specific dimension was often from identical models, producers, years of production, and near sequential lot numbers. For example, 122 mm rockets encountered in extremist use in Mali in 2014 and beyond were exclusively the former Soviet Union model 9M22U produced in 1973 and 1974 or 9M22M produced in 1988 (Anders, n.d.). Extremists used these rockets in indirect fire attacks on military camps in northern Mali with the assistance of improvised launching 'systems' such as tree stumps, which extremists leaned the rockets against to obtain the desired launch angle (Anders, n.d.).

A prominent source for the ammunition in extremist use was army stockpiles that extremists looted in 2012, notably in the towns of Aguelhok, Kidal, Gao, Ménaka, Tessalit, and Timbuktu (Anders, 2015, p. 174). Such looting was also evidenced in extremist propaganda videos the author analysed as part of the confidential database[10] he maintained. The videos showed extremists parading in front of captured ammunition and ammunition crates in areas such as Tessalit and Kidal (Anders, n.d.). Investigators also documented crates for medium- and large-calibre ammunition in abandoned army depots in and around Gao in 2014. Ammunition encountered in extremist use in the Gao region had identical producer and lot markings to those on empty crates in the warehouses (CAR, 2016, pp. 29–34).

The fact that the materiel was looted from Malian army stores explains the homogeneity of it. The armed forces imported such materiel in specific transfers that included hundreds or thousands of munitions from the same producer and same lot. The propaganda videos, for example, allowed for an estimation of the extremist capture of some 2,000 shells of 120 mm projectiles and mortar rounds from the stocks in Kidal and Tessalit alone (Anders, n.d.).

> “In the period from 2015 to 2022, extremists in Mali often used arms, ammunition, and other materiel in their attacks that they had already acquired by 2014.”

in Mali before the northern rebellion in 2011 and 2012. The materiel entered illegal circulation in Mali during previous rebellions and from a diversion of state-actor stockpiles in Mali and the subregion since 1960 (Florquin and Pézard, 2005, p. 51; Anders, 2015, p. 174). The second source was materiel that extremists captured in attacks on stockpiles of the Malian armed forces in northern Mali in 2011 and 2012 (Anders, 2015, p. 174). These stockpiles included additional small arms, related ammunition, and medium- and large-calibre ammunition, such as Soviet-produced 120 mm mortar rounds and 122 mm rockets (Anders, n.d.) (see Box 1). In 2014, extremists used this type of ammunition, particularly in indirect fire attacks on military camps in northern Mali that they fired from improvised launching platforms (Anders, 2015, pp. 161, 166).

By 2014, the third source of extremist armament in Mali was arms and other materiel that combatants from Libya brought with them to join the 2011–12 rebellion in Mali (UNSC, 2013, para. 144).[11] This materiel included assault rifles and technicals with mounted machine guns. In parallel, extremists obtained additional materiel through illicit trafficking from Libya in 2013 and 2014. The illicit materiel included French-produced mortar rounds, 81 mm calibre, and Belgian-produced anti-tank mines (Anders, 2015, p. 176). Extremists also started to use mortar rounds in indirect fire attacks and—regarding the anti-vehicle mines—in attacks with IEDs on roads used by military convoys in northern Mali (Anders, 2015, pp. 165–66).

Table 1 presents an overview of medium- and large-calibre ammunition researchers documented in extremist use in Mali by 2014.

Continuity in extremist armaments

In the period from 2015 to 2022, extremists in Mali often used arms, ammunition, and other materiel in their attacks that they had already acquired by 2014. As previously mentioned, the most common small arms in extremist attacks in 2015 to 2022 were assault rifles, general-purpose machine guns, and heavy machine guns—Avtomát Kaláshnikova (AK)-, Pulemyot Kalashnikova Modernizirovannyi (PKM)-, and Degtyaryova-Shpagina Krupnokaliberny (DSHK)-type small arms—mounted on four-by-four trucks, as well as rocket-propelled grenades. When recovered, the materiel was generally consistent with materiel recovered in 2014.[12] As in 2014, extremists continued to use medium- and large-calibre ammunition such as 60 mm, 81 mm, and 120 mm calibre mortar rounds and 107 mm and 122 mm calibre rockets (Anders, 2018, p. 5; n.d.). Extremists also continued to use anti-vehicle mines in IEDs targeting military convoys between 2015 and 2022 (Anders, n.d.).

The continued use of materiel already held in 2014 can also be confirmed based on the comparison of markings on materiel recovered following extremist attacks in 2014 versus those in 2015 to 2022. The former Soviet Union-produced 122 mm rockets that extremists used from 2015 to 2022—that failed to fully detonate and allowed for the identification of model and production year—were the same models and production ranges already documented in 2014 (Anders, n.d.). This similarity suggests that extremists obtained their stock of 122 mm rockets by 2014 and are using it without obtaining rockets from new sources. If they had used new sources, different models and production year ranges would have been expected.

In the same vein, many small arms ammunition cartridges recovered from sites of extremist attacks in 2014 bore headstamps that were identical to headstamps of cartridges of the same calibre recovered in the period from 2015 to 2022 (Anders, n.d.). In other words, extremists continued using some of the materiel in the period from 2015 to 2022 that they had acquired by 2014 and had previously used.

Table 1 Medium- and large-calibre ammunition in extremist use in Mali by 2014

Category	Calibre	Years of production	Producer/comments
Artillery shells	122 mm	1980s	Soviet Union
Mortar rounds	120 mm	1980s	Soviet Union
	81 mm	1970s	France, trafficked from Libya
	60 mm	1970s	China
		1970s	Belgium, trafficked from Libya
Projectiles	23 mm	1980s/1990s	Various (Eastern Bloc)
Propelled grenades	Various	1970s/1980s	Various (Eastern Bloc)
Rockets	122 mm	1970s/1980s	Soviet Union
	107 mm	1990s	China
	57 mm	1980s/2010s	Bulgaria

Source: Anders (n.d.)

Continuity in sources of extremist armaments

Extremists continued using previous sources and pathways to replenish their stock from 2015 to 2022. These included capture on the battlefield by Malian armed forces as well as illicit trafficking from Libya and other states in the subregion (Anders, n.d.). Much of the materiel that extremists obtained from 2015 to 2022 was from the same

sources as before 2015, including materiel identical to what they already had obtained by 2014 (Anders, n.d.). This similarity is logical because, from 2015 to 2022, Malian armed forces continued using ammunition already in their stockpiles in 2014. Similarly, 2014 investigations suggested that extremists illicitly trafficked French 81 mm mortar rounds from Libya to northern Mali (Anders, 2018, p. 5; CAR, 2016, p. 10). These trafficking convoys continued to occur in the following years and, among other materiel, included further such French 81 mm mortar rounds.[13]

In summary, and unsurprisingly, extremists in Mali continued to employ materiel from 2015 to 2022 that they had previously obtained. Extremists also obtained additional materiel through the same sources and pathways they had acquired such materiel before. In this context, however, changes in materiel that extremists used from 2015 to 2022 also occurred. Further changes relate to the relative importance of different sources of materiel and a discussion of these points follows in the next section.

Changes in extremist-used armaments since 2015

Changes in materiel

Changes in extremist-used materiel before and after 2015 include the increasing rarity of certain materiel. The former Soviet Union 122 mm rockets that extremists had looted from army stockpiles in northern Mali in 2012 were the most-used type of ammunition in indirect fire attacks up until 2016 (Anders, n.d.; CAR, 2016, p. 31). Over time, however, extremist use of these rockets became rare and was increasingly replaced by French 81 mm mortar rounds (Anders, n.d.). By 2022, these French mortar rounds were the most commonly used ammunition in indirect fire attacks (Anders, n.d.). Arguably, this change reflected a possible depletion of the extremist-held stock of 122 mm rockets and an increased preference for 81 mm mortar rounds. As explained by one analyst, 81 mm mortar rounds are lighter and easier to transport and conceal than 122 mm rockets. Although these rounds require being fired closer to the target and have less explosive content than rockets, they are more accurate in hitting the intended target.[14]

More evident examples include 57 mm rockets, type S-5KO, and 7.62×39 mm small arms ammunition—both produced in Bulgaria in 2011. Investigators confirmed that extremists obtained both types of materiel in the looting of army stockpiles in Ménaka and Gao in late 2011 and early 2012.[15] Extremists also used Bulgarian S-5KO rockets—especially in attacks with IEDs—in a small number of incidents in 2014 and 2015 (CAR, 2016, p. 33; Anders, n.d.). No further use of such rockets has been documented since then (Anders, n.d.).

Similarly, the 7.62×39 mm small arms ammunition was repeatedly found at sites of extremist attacks in 2014 and 2015 but became increasingly rare afterwards. Documentation of the ammunition occurred at 12 different sites of attack in 2015, 6 different sites in 2016, 3 different sites in 2017, 2 different sites in 2018, and 1 site in 2019 (Anders, n.d.). After 2019, this ammunition had no further documented siting (Anders, n.d.). Both cases suggest, therefore, that extremists had a finite amount of the Bulgarian, 2011-produced munitions and eventually depleted this stock.

Changes in the age of materiel

Data collection confirmed another change in extremist-used materiel concerning the age of materiel in terms of years of production. In 2016, the recovery of 7.62×39 mm calibre ammunition from various producers occurred in Mali, including Russian Federation-made ammunition from 2014 and Egyptian-made ammunition from 2015 (Anders, n.d.). In 2018, the same calibre of ammunition produced in China in 2016 was first recovered (Anders, n.d.). By 2019, ammunition produced in the Russian Federation in 2017 was documented for the first time (Anders, n.d.). In other words, extremists started using ammunition produced in the previous two years with older ammunition already in their possession.[16]

At relevant times, the Malian armed forces actively used ammunition with identical headstamps. The assumption was that extremists obtained this recently produced ammunition through capture on the battlefield. Materiel produced within five years or less of recovery may not appear significant in terms of its percentage of overall small arms ammunition samples documented in Mali since 2015. Of more than 400 samples documented and defined by identical calibre and headstamps, recently produced ammunition only constituted about 12 per cent of the ammunition documented and discussed in this Briefing Paper (Anders, n.d.). This statistic blurs the fact that an increasing percentage of the actual quantity of cartridge cases in attacks is of recent production. While an outlier, in one incident in 2022, nearly 50 per cent of some 80 recovered casings were of recent production.[17]

The influx of newly produced materiel into extremist possession and use in Mali from 2015 to 2022 is not limited to small arms ammunition. On 22 January 2022, extremists conducted an indirect fire attack against Gao Airport in northern Mali (Kay, 2022). Investigations subsequently recovered materiel that identified the ammunition in the attack as 120 mm mortar rounds that had been produced in Serbia in 2019 (Anders, n.d.). This incident was the first time that Serbian mortar rounds were documented in Mali as they are not known for use by the Malian army (Anders, n.d.). Similarly, in March 2022, investigations documented 35 mm grenades used in an extremist attack in the Gao region that were produced in China in 2016 (Anders, n.d.)[18] and not seen in Mali before (Anders, n.d.). In 2021 and 2022, investigators also documented heavy machine guns used by extremists and produced in China in 2019 (Anders, n.d.).

The documented cases show that newly produced materiel is adding to the stock already held by insurgents.

Changes in the type of materiel[19]

In August 2021, investigations documented extremist use of a 32 mm anti-tank grenade, produced in Jordan in 2013 in an attack in the Kidal region (Anders, n.d.).[20] As their name suggests, these grenades are designed to penetrate armour and had not been previously documented in Mali (Anders, n.d.). Similarly, the 35 mm grenades used in the Gao region in March 2022 were also new to the Malian conflict (Anders, n.d.). Both types of grenades added to the materiel capacities of extremists by allowing for highly mobile—and, for the 35 mm grenades, a high-rate-of-fire—ammunition that complemented their existing use of rocket-propelled grenades. In mid-2022, investigations documented the use of a directional mine in central Mali by extremists for the first time.[21] Such mines significantly increase the already-elevated threat of mines and IEDs by targeting vehicles horizontally since they bypass the usual bottom protection of mine-protected military vehicles in Mali.

Changes in sources and pathways of extremist-used materiel

Capture on the battlefield

Prior to 2015, extremists mainly clashed with Malian armed forces in northern Mali. Extremist capture of materiel on the battlefield was thus limited to capture in northern Mali. This situation changed in 2015 when the extremist expansion and clashes with Malian armed forces expanded to central Mali.[22] Specifically, extremists reportedly captured arms or other materiel in some 100 recorded attacks in central Mali from 2015 to 2022 (Anders, n.d.). These attacks represent less than five per cent of the 2,224 attacks recorded in Mali during this period. Since many events concerned the reported capture of only a few firearms or vehicles, not every incident involving capture on the battlefield seems important in terms of type or quantity. This lack of importance was especially the case with attacks on soft targets such as rural posts and checkpoints of the police and gendarmerie (Anders, n.d.).

Still, capture can be an important source of materiel. As documented in the 100 recorded attacks involving extremist capture of materiel, extremists reportedly captured more than 170 vehicles and motorcycles, 200 assault rifles, dozens of heavy and light machine guns, as well as tens of thousands of rounds of ammunition (Anders, n.d.). The actual number of attacks involving capture and the quantities of captured materiel are likely higher than reported. At the same time, Malian armed forces also (re-)captured materiel from extremists, especially since the launch of counter-terrorist operations in central Mali in late 2021. According to Malian officials, these operations led to the recovery of hundreds of arms and thousands of rounds of ammunition from extremists and extremists' arms caches in 2022.[23]

Overall, capture on the battlefield by extremists may not necessarily increase the total quantity of materiel that extremists hold. It does, however, present a continued source to replenish extremist-held materiel (see Box 2).

Illicit trafficking from the subregion

From 2015 to 2022, Libya remained a source of materiel illicitly trafficked to extremists in northern Mali (Anders, 2018, p. 5). Although there is no detailed data on the number of trafficking convoys, observers suggest that such convoys may have become more infrequent around 2017 to 2018.[24] As of 2022, however, there were indications that some of the materiel documented in extremist use in Mali came through recent illicit flows from Libya (Anders, n.d.). The Jordanian-produced 32 mm anti-tank grenade systems, for example, are known for illicit proliferation in Libya (UNSC, 2019, pp. 193, 263). Likewise, Serbian 120 mm mortar rounds from 2019 are known for illicit proliferation in Libya (UNSC, 2022, p. 187). The type of directional mine documented in central Mali is also known for being from Libya, as is the recent proliferation of 12.7 mm Chinese-produced heavy machine guns (UNSC, 2022, pp. 184, 332).

It is possible that the materiel listed above and documented in Mali in 2021 and 2022 entered Mali through recent illicit trafficking from Libya (Anders, n.d.; Koné, 2022). To the author's knowledge, neither Malian nor other actors with the relevant mandate have traced such materiel with producing states. While the materiel may have entered Mali from Libya without tracing operations, the materiel could have still come through unidentified sources and pathways.

Illicit trafficking of commercial explosives

The largest change in knowledge regarding illicit trafficking to Mali before and after 2015 is likely regarding the sources and pathways of commercial components for IEDs—specifically, ammonium nitrate (AN). As shown in Figure 2, extremists conducted more than 770 recorded IED attacks in Mali from 2015 to 2022. These IEDs included both anti-vehicle mines trafficked from Libya and devices that typically contain commercially manufactured AN (Anders, n.d.). Notably, the production of such AN is for the mining sector.

For AN recovered from caches that was still in its original packaging, Ghana was identifiable as the producer and is, in fact, the primary producer of mining explosives in the sub-region (Anders, n.d.). In another case, investigators documented mining explosives produced in Poland in 2016 in an IED cache in central Mali in 2017 (Anders, n.d.). The Polish company confirmed the legal production and export of the explosives

Box 2 High-volume capture

High-volume capture events in Mali were most likely when extremists overran and temporarily took control of army camps. These events included attacks on army camps in Mondoro and Boulikessi in central Mali in September 2019, in which extremists reportedly killed more than 30 Malian soldiers and ransacked the camps (Anders, n.d.; Eurafrica, 2019). Extremists later claimed to have captured significant amounts of materiel in the attacks (Anders, n.d.).

Extremists allegedly captured 5 vehicles—including 2 mounted with heavy machine guns—7 heavy machine guns, 6 light machine guns, 76 assault rifles, 3 grenade launchers, 2 recoilless guns, 2 mortars, and associated ammunition (Reuters, 2019; Anders, n.d.).

This capture shows that extremists could obtain large volumes and a considerable range of materiel in attacks.

Box 3 Opportunistic procurement

On 27 October 2018, extremists attacked a UN peacekeeping camp in Ber in the Timbuktu region (UN News, 2018). Extremists killed two peacekeepers in the attack which included two suicide vehicle IEDs—one of which failed to detonate—shelling with mortar rounds, heavy machine gun and other small arms fire, and rocket-propelled grenades (Anders, n.d.).

Following the attack, investigators could recover various items that included ammunition shells and detonators, detonating cords, explosives, barrels to store the explosives, sugar and its packaging to use as fuel, and packaging of the explosives in the unexploded truck (Anders, n.d.). Investigations into the provenance of the materiel identified some 12 different states of production in Asia, Europe, and Africa (Anders, n.d.). Extremists then sourced the materiel in Mali and neighbouring countries (Anders, n.d.).

The case illustrates the global sources of materiel that extremists use. The vast spread of origins of the materiel also suggests that insurgents do not use materiel from only one source. Instead, they appear to acquire whatever is available locally or opportunistically through subregional trafficking.

to a Ghana-based mining service company, which later acknowledged a likely diversion of the explosives during one of its field operations.[25] Later, additional explosives from the same pathway were recovered from the illicit sphere elsewhere in the subregion.[26]

Generally, research on extremist procurement in Mali from 2015 to 2022 highlighted that extremists appeared to obtain materiel in a highly opportunistic manner (Anders, n.d.). That is, extremists obtained their materiel where and when they could without any fixed structures or supply lines (see Box 3).

Extremist network connections

The monitoring of extremist-used arms and ammunition in Mali from 2015 to 2022 allowed for the identification of changes in materiel and its acquisition. It also allowed for insights into the connections between and structures of various extremist sub-groups comprising JNIM and ISGS. Neither JNIM nor ISGS are 'unitary' actors with effective centralized command and control or distribution chains (Anders, n.d.). Instead, understanding both groups as loose coalitions among localized sub-groups that operate semi-autonomously may be better (Anders, n.d.). This definition is apparent in the differences in sources and distribution of specific ammunition among the groups (Anders, n.d.).

As previously indicated, extremists in Mali significantly expanded their geographical operations with the emergence of new *katibats* (fighting units)[27] in central and southern Mali in 2015. This expansion involved local extremist combatants in central and southern Mali who had already fought with their fellow extremists in northern Mali in 2012. As argued below, these local extremists received assistance and materiel support from their northern extremist sponsors. This support was then used to locally recruit and build up capacities for establishing new fronts to combat perceived enemies (Anders, n.d.). The emergence of the Katibat Macina—a member of the JNIM coalition and composed of various sub-groups—is illustrative.

Emergence of the Katibat Macina[28]

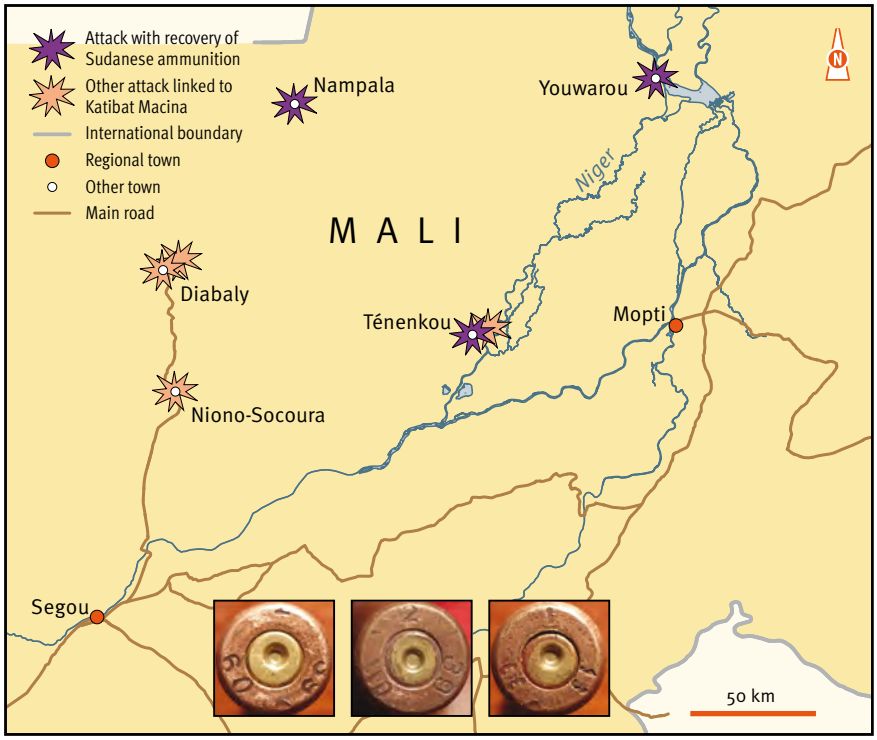
On 5 January 2015, some 30 assailants attacked the Malian army camp in Nampala in the Segou region, reportedly killing eight soldiers (Lagneau, 2015). On 16 January 2015, assailants attacked national army positions in Tenenkou in the Mopti region, killing at least two soldiers (Roger, 2015). On 14 February 2015, assailants attacked national army positions in Youwarou, also in the Mopti region, reportedly killing two soldiers (Diarra, 2015; MIRG, 2018). These three major attacks on army positions were part of an emerging campaign that included eight attacks on the Malian army in the Mopti and Segou regions in the first three months of 2015 (Anders, n.d.). These were the first such incidents in central Mali (Thurston, 2020, p. 172).

The analysis of small arms ammunition and other evidence recovered from the eight attacks in early 2015 confirmed a linkage between the attacks and assailants. Ammunition casings recovered from extremist firing positions were largely consistent with ammunition already known to be in illicit circulation in Mali and included ammunition used by extremists in northern Mali (Anders, n.d.). The three major attacks in January and February of 2015 also included ammunition casings that were specific to these attacks, which were not previously seen in Mali (Anders n.d.). These casings included Sudanese-produced 7.62×39 mm ammunition from 2009, 2011, and 2013, for which documentation only exists in Mali from these three attacks (Anders, 2015, p. 177; n.d.; CAR, 2017, p. 10).

Map 3 depicts the locations of the extremist attacks in central Mali from January to March 2015. The map highlights the sites of the three major attacks during this period, and the inlays depict the headstamps of the Sudanese ammunition, 7.62×39 mm calibre specific to these attacks.

The findings on the specificity of certain ammunition suggest the illicit trafficking of some ammunition into Mali, as Malian armed forces are not known to use Sudanese-produced ammunition (Anders, n.d.). These findings exclude the domestic diversion of ammunition in Mali as a probable source. The circumstance that the use of Sudanese ammunition only occurred in the first attacks of the Katibat Macina in 2015 but not in any attacks after that suggests that assailants had obtained the ammunition specifically to conduct the initial attacks. Additional research identified that extremists in central Mali initially received materiel support from allied extremist groups in northern Mali (Thurston, 2020, p. 154). In turn, these groups likely obtained ammunition through Libya—where Sudanese ammunition is more prevalent than in Mali—with the specific intent of supplying fellow combatants in central Mali.[29]

Map 3 Extremist attacks in central Mali, January to March 2015



Base map data source: OpenStreetMap

Source: Author[30]

The spread of Katibat Macina and its ammunition

Creating new local cells continued in Mali between 2015 and 2022 (Anders, n.d.). By further recruiting and supporting emerging cells, the Katibat Macina spread throughout central Mali (Anders, n.d.). This expansion is illustrated by the dispersion of certain small arms ammunition specific to the Katibat Macina and its sub-groups in the first years (Anders, n.d.). Malian armed forces received 7.62×39 mm calibre, Egyptian-produced ammunition in 2015 as part of an Egyptian counterterrorism package.[31] In August 2016, after an attack on the Malian armed forces in Youwarou in the Mopti region, Katibat Macina captured a portion of this Egyptian ammunition (Anders, n.d.).

Within a month of that capture, the ammunition started to reappear in various extremist attacks, mainly in central Mali (Anders, n.d.). This reappearance provided reasonable grounds for assessing the attacks linked to the same network of assailants. Notably, by 2020, the same ammunition also began to appear much further away from its original location of capture (Anders, n.d.). For the first time, its presence in northern Mali provided evidence that ammunition was transferred not only from extremists in northern Mali to extremists in central Mali but also in the opposite direction. The ammunition was also found at the site of an extremist attack in northern Benin in November 2021 (Anders, n.d.). This evidence correlates with the assumption by some researchers that the extremist cell in Benin received initial support from extremists in central Mali.[32]

Map 4 shows the location of the initial diversion of this ammunition and the recovery locations of the ammunition following extremist attacks in central Mali and later in northern Mali and Benin. The photo inlay shows the headstamp of a relevant cartridge recovered from an extremist firing position. The map also illustrates how this ammunition has become less frequent over time, with most recoveries occurring in 2016 and 2017 but fewer recoveries after.

Geographical specificity of ammunition

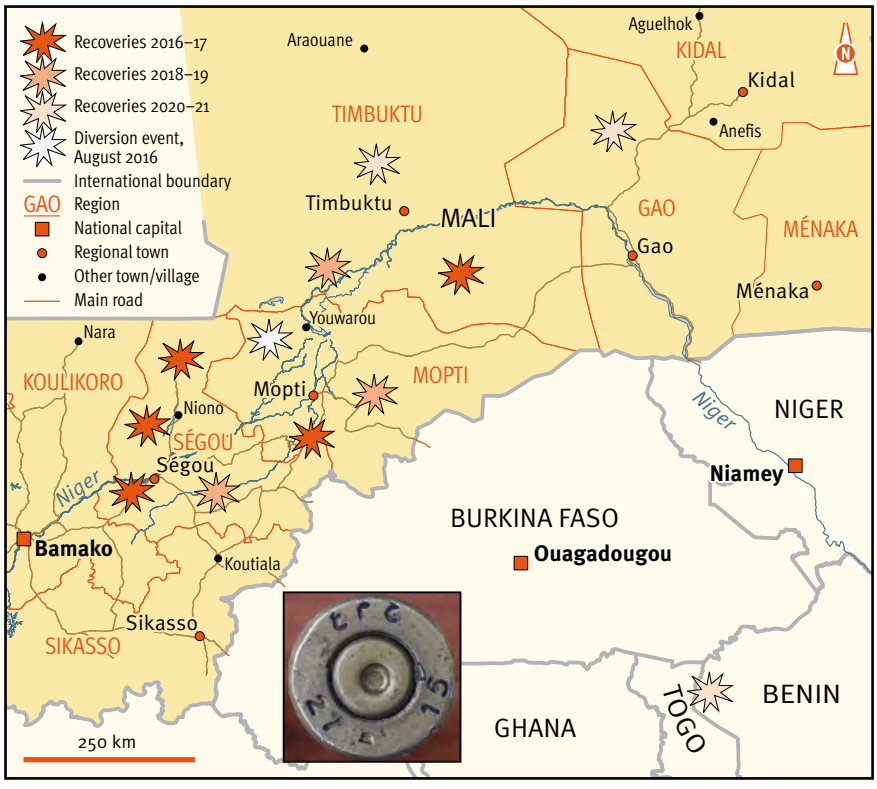
The presence of specific ammunition among materiel recovered after extremist attacks can identify network connections. At the same time, the *absence* of specific ammunition in any greater number of attacks or locations can also help identify independent and group-specific procurement. Extremists in the Gao and Ménaka regions looted Bulgarian 57 mm rockets from Malian army stockpiles in late 2011 and early 2012 (Anders, n.d.), with documentation of such rockets used in attacks within these regions only occurring later (CAR, 2016, p.29; Anders, n.d.). It is a similar case with the Sudanese cartridges from 2009, 2011, and 2013 in the attacks in central Mali in early 2015. Extremists appear not to have obtained such ammunition after their initial receipt and use in early 2015 (Anders, n.d.). This documentation shows that specific ammunition of finite quantities, such as the Bulgarian rockets and Sudanese cartridges, may have restricted geographical distribution and duration in extremist attacks.

Another example concerns 81 mm mortar rounds of Iranian production in 2001 that extremists used in specific indirect fire attacks against UN peacekeeping camps in northern Mali (Anders, n.d.). From 2017 to 2020, assailants launched 79 indirect fire attacks (Anders, n.d.). In about half of these attacks, investigators could establish the type and calibre of rockets or mortar rounds (Anders, n.d.).[34] With a specific focus on 81 mm mortar rounds, assailants used these in at least 10 of the 79 attacks (Anders, n.d.). Of particular interest from the perspective of monitoring illicit ammunition flows are 81 mm mortar rounds because they are not part of the stockpile of Malian armed forces (Anders, n.d.).

Notably, the attacks with 81 mm mortar rounds only occurred in the Kidal and Timbuktu regions but not in Gao and Ménaka (Anders, n.d.). This distinction suggests a restriction of the 81 mm mortar rounds to the Kidal and Timbuktu regions. Of the ten attacks with 81 mm mortar rounds, eight included French mortar rounds (Anders, n.d.). In the other two attacks, assailants used 81 mm mortar rounds consistent with production in Iran in 2001 (Anders, n.d.).[35] Not known from use or proliferation in Libya,[36] the Iranian rounds likely came from another foreign source.

Map 5 shows the locations and dates of indirect fire attacks against UN peacekeeping camps that included the use of 81 mm mortar rounds from 2017 to 2020. Tracking this type of round illustrates how monitoring extremist-used materiel can help identify ammunition of particular interest and help identify hypotheses on specific transfers and pathways of illicit materiel that extremists procure to conduct their attacks.

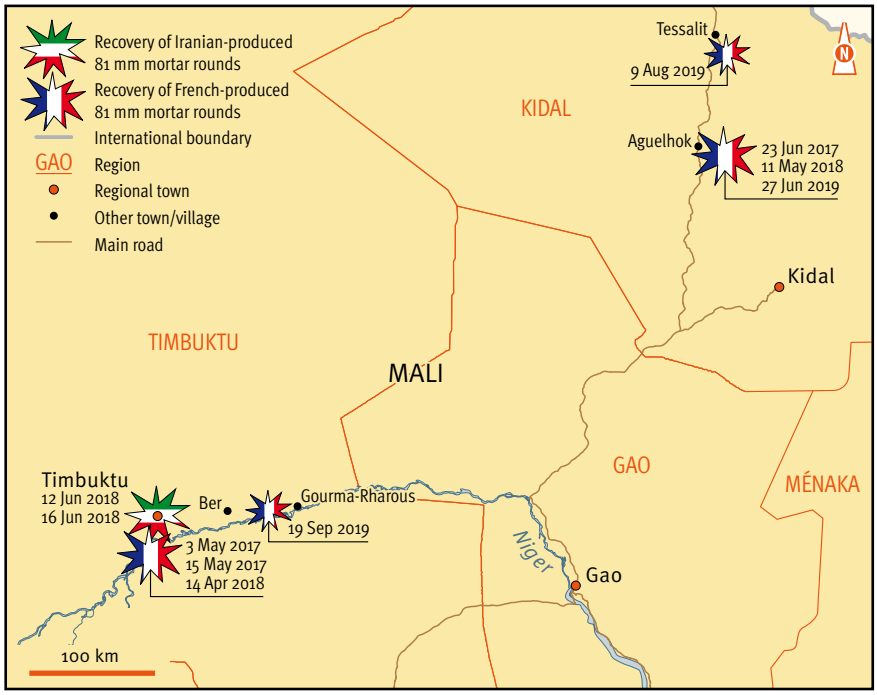
Map 4 2015-produced ammunition capture and distribution, 2016–21



Base map data source: OpenStreetMap

Source: Author[33]

Map 5 Attacks on peacekeeping camps with 81 mm mortar rounds, 2017–20



Base map data source: OpenStreetMap

Source: Author[37]

Conclusion

This update on the situation concerning illicit arms flows and instability in Mali demonstrated some obvious and some less apparent points. From 2015 to 2022, extremists in Mali continued to use arms and ammunition that they had previously acquired. Extremists also continued to acquire materiel through capture on the battlefield and illicit trafficking from abroad, including from Libya. Specifically, extremists continued to have access to arms and ammunition ranging from assault rifles to medium and heavy machine guns and mortar rounds and rockets of calibres up to 120 mm and 130 mm.

This access also allowed extremists to obtain materiel produced less than five years before use. Examples are 2019-produced 120 mm mortar rounds and heavy machine guns that investigators documented in 2021 and 2022. Continued illicit trafficking also allowed extremists to procure materiel that is new to the Malian conflict. This trafficking includes 32 mm and 35 mm grenades that increase the infantry-like capacities of highly mobile extremists on motorcycles.

Less apparent findings may include the increasing percentage of recently produced materiel in extremist use. Extremists capture materiel from armed forces who import recently produced materiel or through illicit trafficking after the materiel's diversion elsewhere in the subregion. Extremist-used materiel in Mali reflects what is also in use with armed forces in the subregion. This Briefing Paper shows that continued capture does not necessarily increase materiel quantities in extremist use; however, it allows extremists to continually replenish their materiel. A further insight from monitoring extremist-used materiel in Mali from 2015 to 2022 is the opportunistic nature of extremist procurement. Rather than relying on one or two individual sources and trafficking pathways, extremists appear to procure whatever happens to be available at national and subregional levels. The monitoring also allows for the identification of illicit trafficking of commercial mining explosives from West African coastal states for use in IEDs.

As further suggested in this Briefing Paper, monitoring extremist-used materiel can help identify network connections and illicit trafficking flows. Tracking the geographical distribution and usage of specific materiel, such as small arms ammunition with specific headstamps, provided evidence for linkages between cells within the al-Qaeda-linked JNIM. It also highlighted the key mechanism in the enduring spread of extremist cells in Mali—the materiel support for creating new cells, which open new battlefronts and start procuring further materiel through local capture in attacks on armed forces. Such connections exist at the national level in Mali and may extend further into the subregion. The documentation of ammunition that was previously restricted to use in central Mali in an attack in Benin in late 2021 illustrated this.

The enduring extremist ability to obtain arms, ammunition, and explosives does not bode well for the prospects of greater stability in Mali. This ability will further sustain extremist capacities to conduct lethal attacks on armed forces and civilian populations. Measures to mitigate the further proliferation and trafficking of illicit materiel may include more systematic documentation and tracing of recovered arms, ammunition, and explosives. Tracing materiel can improve the understanding of sources and connections and, therefore, contribute to the formulation of action that at least disrupts future diversion to extremists. The recent withdrawal of MINUSMA and international peacekeeping forces will make the challenge all the greater, however. ●

Abbreviations and acronyms

AK Avtomát Kaláshnikova

AN Ammonium nitrate

DSHK Degtyaryova-Shpagina Krupnokaliberny

Extremists al-Qaeda- and Islamic State-linked extremists

IED Improvised explosive device

ISGS Islamic State in the Greater Sahara

JNIM Jama'at Nusrat al-Islam wal-Muslimin

MINUSMA UN Multidimensional Integrated Stabilization Mission in Mali

PKM Pulemyot Kalashnikova Modernizirovannyi

UN United Nations

Notes

1 Anders' (2015, pp. 165–77) research had three key findings: 1) extremists acquired more heavy and large-calibre weapons than in the past, including 'technicals' such as four-by-four trucks that serve as mobile stands for heavy machine guns; 2) extremists obtained the materiel through diversion from Malian army stockpiles and through trafficking from Libya and elsewhere; and 3) extremists were increasingly complementing cold-war-era stocks with newly produced materiel.

2 This Briefing Paper does not examine artisanal arms, which are excluded due to their absence among the materiel that the author documented.

3 Anders (n.d.). The database on extremist-used materiel covers some 4,000 entries from 2014 to 2023. The database is not intended to be comprehensive but contains enough verified data to render it useful for generating an overview of security trends in Mali. Note that some of the cases described in this Briefing Paper remain under active investigation and, therefore, the discussion herein does not include certain identifying details.
4 For further information on data collection and analysis methodology, see Anders (2023).
5 For useful background information on Mali's situation prior to 2015, see Anders (2015) and Cascais (2022). For a timeline of events, see BBC (2020).
6 Additional research by Anders may have contributed to these findings.
7 The data presented for IED attacks excludes IED finds, IED hoaxes, or reports on false IEDs.
8 Percentages for attacks are rounded, thereby accounting for a total of 101 per cent.
9 Additional research by Anders contributed to these findings.
10 Anders (n.d.).
11 See Anders (2015, pp. 174–77) for more context.
12 The types, model, producer, and production year were consistent with the previously identified materiel. See, for example, Anders (2015).
13 Interviews with analysts of French armed forces, Bamako, Mali, 2015–16.
14 Interview by the author with an analyst of the French armed forces, Bamako, Mali, 2018.
15 Interviews by the author with national and subregional investigators, Bamako, Mali, 2014.
16 See Anders (2018, p. 5) for more context.
17 Interview by the author with a subregional investigator, Bamako, Mali, February 2022.
18 One such attack occurred in Tessit in the Gao region on 21 March 2022. Following the attack, investigators recovered one of the grenades in question, unfired, from a position from which assailants had been firing them during the attack.
19 None of the materiel listed in this section is known for use by the Malian armed forces (Anders, n.d.). It was likely trafficked illicitly into Mali.
20 On 27 August 2021, extremists fired a grenade at a UN peacekeeping patrol in Kidal town. The grenade did not fully detonate, thereby allowing for later recovery and identification.
21 Interview with an information analyst on IEDs in Bamako, Mali, April 2022.
22 Please see USDOS (2016) for more information on the attacks.
23 Interview with a representative of the Malian armed forces, Bamako, Mali, December 2022.
24 Interviews with national and international analysts, Bamako, Mali, 2016–20.
25 Interview with a subregional arms trafficking investigator, Bamako, Mali, May 2022.
26 Interview with a subregional arms trafficking investigator, Bamako, Mali, May 2022.
27 This Briefing Paper uses the term 'katibat' to refer to the fighting units of extremist or non-state armed groups in Mali, regardless of numerical strength. Though katibat is the commonly understood term for such fighting units, it is literally translated as the singular of the Arabic word for brigade. Properly, multiple brigades would *kataeb*.
28 See Zenn (2015) for an overview of the origins of Katibat Macina.
29 Interview with a subregional arms trafficking investigator, Bamako, Mali, November 2022.
30 The underlying data includes information from Anders (n.d.). Additional research from Anders may have contributed to these findings.
31 Interview with a representative of the Malian armed forces, Bamako, Mali, January 2017.
32 Interview by author with a subregional investigator, Bamako, Mali, February 2022.
33 The underlying data includes information from Anders (n.d.). Additional research from Anders may have contributed to these findings.
34 Materiel used in the attacks included 130 mm, 122 mm, and 107 mm calibre rockets and 120 mm, 81 mm, and 60 mm calibre mortar rounds.
35 The two attacks occurred in Timbuktu in the Timbuktu region on 12 and 16 June 2018.
36 Interviews with arms trafficking investigators in Libya, electronic communication, October 2022.
37 The underlying data includes information from Anders (n.d.). Additional research from Anders may have contributed to these findings.

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