

The Islamic State's Acquisition and Use of Chemical Weapons *Assessing Past and Potential Threats*

PART I

Simeon Dukić

Part I of this POLICY FORUM issue (Part II is published as POLICY FORUM No. 3) will assess the threat posed by the possibility that the Islamic State of Iraq and al-Sham (IS) could obtain and use chemical weapons (CW). It will first review the salafi-jihadi doctrine of the group and argue that no ideological obstacles prevent it from obtaining and using unconventional weapons. It then reviews IS's current status. Despite the group's loss of territory and the collapse of its quasi-state structure, it will still pose a significant threat to the security of the Middle East/Gulf. Finally, this POLICY FORUM issue will analyze the capabilities and intentions of the hybrid actor to seek, develop and use chemical weapons on the territory of Syria and Iraq. All references appear at the end of POLICY FORUM No. 3.

Background and Design of This Issue

On June 29, 2014, Abu Bakr al-Baghdadi, the leader of the salafi-jihadi extremist group known variously as Islamic State of Iraq and the Levant, Islamic State of Iraq and al-Sham, Islamic State of Iraq and Syria, and Da'esh (uniformly abbreviated in this text to IS) announced the formation of an Islamic Caliphate. It stretched across large parts of the territories of Iraq and Syria (see Graph on p. 3). The idea of establishing an Islamic Caliphate where sharia law would be imposed is not new among salafi-jihadi groups (Maher, 2017). Yet the actual formation of such a political entity in parts of the Middle East further complicated an already delicate political situation in the region. Despite its initial success, three years after the declaration of the Islamic Caliphate, Iraqi government forces seized control of the Great Mosque of al-Nuri, where al-Baghdadi had made his initial announcement (see Graph in POLICY FORUM No. 3, p. 3).

While the entire POLICY FORUM series deals mainly with the broad range of terrorist-related chemical, biological, radiological, and nuclear (CBRN) threats in the Middle East/Gulf, POLICY FORUM Nos. 2 and 3 will focus on the Islamic State's use of chemical weapons – as far as terminology is concerned they are together with biological and nuclear weapons a category

of weapons of mass destruction (WMD), while the notion 'unconventional weapons' is used as a synonym for both CBRN and WMD. The two issues will attempt to analyze this threat by examining the CW-related intentions and capabilities of this hybrid/non-state actor and assess the potential utilization of this category of weapons in the Middle East and possibly Europe (the notion 'hybrid' refers to the time when this group could be considered a quasi-state entity in terms of its structure and the territory it controlled).

The paper will contextualize this threat by comparing IS's CW-related activities with those of other state and non-state actors in the region. It will argue that even though the threat presented by the Islamic State's possible acquisition and use of CW is not currently alarming, it should not be underestimated. In fact, it could become a unifying factor that prompts the international community – and specifically regional actors – to jointly take action. Prior to the analysis, this POLICY FORUM issue at the nexus of academia and policy decision-making, will give an overview of the current state of play in Syria and Iraq by providing an insight into the Islamic State's salafi-jihadi doctrine and the status of its withering Caliphate.

Salafi-jihadi Doctrine

The creation and evolution of the Islamic

State as a separate group within the salafi-jihadi family of extremist organizations is a result of several factors. The U.S.-led invasion of Iraq and the fall of the Ba'ath regime in 2003, complemented by indirect support from the Syrian and Iranian governments, provided jihadi fighters with fertile ground to act in Iraq (Azoulay, 2015: 12-13). As a leading jihadi organization, al-Qaeda exploited the opportunity to create a branch in Iraq called al-Qaeda in the Land of the Two Rivers (AQI) in 2004. The leader of this new branch was Abu Musab al-Zarqawi, who was known for his excessive violence, particularly towards *kafir* (disbelievers) and apostates. The leader of al-Qaeda at the time, Ayman al-Zawahiri, criticized al-Zarqawi's extreme views and activities; nonetheless, al-Zarqawi continued with a campaign of sectarian bloodshed in Iraq (Hassan, 2018: 5).

Another source of inspiration for the use of extremist violence in Iraq can be found in the work of Abu Bakr Naji. The extremist cleric published the book *The Management of Savagery* on the internet in 2004, in which he called for the use of unrestricted and terrifying violence against the tyrants who controlled most Middle East states at the time. This radically affected the character of AQI (Azoulay, 2015: 18). Despite this transformation in the way in which the war in Iraq was conducted, AQI still pledged its allegiance to al-Zawahiri and formed part of the institution-build-

ing process that al-Qaeda called for. The process continued and was consolidated in October 2006 after al-Zarqawi's death with the establishment of the Islamic State of Iraq. The group functioned as an insurgency until 2013, when it expanded its operations to Syria.

The civil war in Syria provided a perfect opportunity for the establishment of a jihadi branch in that country. The Islamic State exploited this opportunity and in July 2011 sent a small group of fighters to form a separate armed entity led by Abu Muhammad al-Julani (Hassan, 2018: 3). This entity was called Jabhat al-Nusra, which reported directly to the Islamic State of Iraq rather than al-Qaeda. Nevertheless, al-Julani did not subscribe to the extremist violent doctrine and methodology used by the Islamic State of Iraq, advocating for a more nuanced strategic approach to Syria. Noticing a drift in Jabhat al-Nusra's ideology and actions, Abu Bakr al-Baghdadi, the leader of IS in Iraq, announced a merger of the two groups. However, not all Jabhat al-Nusra elements were subsumed by this merger, leaving a significant portion of the group independent from the Islamic State of Iraq and still pledging allegiance to al-Zawahiri and al-Qaeda. This event marked the establishment of the so-called Islamic State of Iraq and the Levant and the creation of a rift between IS and al-Qaeda. The two groups developed different viewpoints on many key issues, including *takfir* (excommunication), jihad, the establishment of a Caliphate, and the treatment of individuals (Azoulay, 2018: 19). These differences even sparked armed hostilities between the two groups and led to two distinct movements being formed within the larger salafi-jihadi grouping.

The question of the establishment of a Caliphate became a key component of the two groups' claims of legitimacy and authority. Although it is a key priority for all salafi-jihadis to form the Caliphate, where sharia law would be implemented, the Islamic State and al-Qaeda disagreed on the circumstances required for its creation. Al-Baghdadi advocated for the formation of the Caliphate as soon as possible (Bunzel, 2015: 25-30), while al-Zawahiri adopted a higher threshold for the circumstances in which it could be formed. As mentioned above, the Islamic State announced the establishment of the Caliphate in 2014, which provoked varied

reactions in the salafi-jihadi community. While the al-Qaeda leadership rejected the Caliphate as illegitimate, IS used it as a platform to strengthen its legitimacy and authority, and thus to attract more followers and challenge al-Qaeda's leadership of the salafi-jihadi movement.

A Rapidly Diminishing Caliphate

The gamble of the creation of the Caliphate proved to be an initial success for the Islamic State. At its peak it controlled territory the size of Britain (see Graph on p. 3), where six to ten million people lived, and it had an annual budget of around one billion U.S. dollars, which it obtained from a variety of sources, including tax collection, oil sales, and kidnappings for ransom, among others. Nevertheless, this trend was drastically reversed from 2016 onwards when the global coalition against the Islamic State intensified its military campaign to defeat the organization. In early 2017 the international coalition reported that the once hybrid actor had lost around 62 percent of its territory in Iraq and 30 percent of its territory in Syria, including key centers from which it had operated, such as Fallujah, Mosul, Raqqa, and Palmyra (Valensi, 2017: 1-2). On September 9, 2018 the U.S.-backed coalition began an offensive against the last 200 square miles of territory that the organization controlled around the Syrian city of Hajin (Callimachi, September 9, 2018).

The loss of these territories, particularly the urban centers and oil fields (see Graph in POLICY FORUM No. 3, p. 3), had a detrimental effect on IS's ability to generate revenue (*IHS Markit*, June 29, 2017). Consequently, the Islamic State was no longer able to conduct resource-intensive military operations in the Middle East, supply services to local populations, and attract new recruits. However, even if the Caliphate has been militarily defeated, the threat posed by IS will not disappear in the near future. Although this actor will not have the funds to recruit more members, especially those who are attracted by prospects for material gain, it will still be able to depend on more loyal and committed members who are ideologically motivated to play an active role in the group (Valensi, 2017: 4). Therefore, despite the loss of its hybrid/quasi-state, IS will continue to

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function as an insurgency, exactly as it did prior to the declaration of the Caliphate, and it will remain a significant threat in the region and globally in the future.

The Islamic State's CBRN-related Intentions and Capabilities

There is ample evidence that the Islamic State intended to actively develop, acquire and deploy chemical weapons on the battlefield. Based on its brutal operations against military personnel and civilians, and the theological justifications for the use of weapons of mass destruction issued in various fatwas by radical clerics, it is clear that there is nothing preventing the salafi-jihadi group from using such unconventional weapons to achieve its goals. On the contrary, Nasir al-Fahd, a radical cleric who had pledged allegiance to IS, issued a fatwa on WMD in 2003 in which their use was declared permissible as a last resort (Mowatt-Larssen, 2010: 5).

Moreover, while leading AQI, al-Zarqawi attempted to acquire and utilize CW, which demonstrates the group's longstanding desire to obtain and use weapons of mass destruction. Even though CW do not cause high numbers of casualties, they have an extremely adverse psychological effect on civilians, in line with IS's strategy of maximizing terror and violence (Chapman, 2017). In addition, after the establishment of the Caliphate, terrorist fighters in other countries also attempted to obtain unconventional weapons. For example, a laptop confiscated from a Tunisian terrorist fighter contained guidelines for weaponizing bubonic plague and producing the poison ricin (Doornbos/Moussa, September 9, 2014).

There have been many allegations that IS has acquired nuclear capabilities. However, in a recent article the author has downplayed allegations that this organization has materials in its possession that could be used for the development of a modern arsenal. Specifically, the 40 kg of low-enriched uranium stolen from the University of Mosul cannot be used to make a nuclear weapon, because IS has neither the expertise nor the equipment to enrich and install it in a delivery vehicle (Dukić, 2017: 34). There have also been allegations that IS has acquired material from Saddam

Hussein's chemical weapons program at the al-Muthanna site. However, UN reports indicate that the material at the site has been degraded and the bunkers have been sealed, making it both difficult and dangerous to reach this material (Esfandiary/Cottee, October 15, 2014).

The only viable case that can be made is that the Islamic State has started to develop crude CW capabilities as the result of two factors. First, for a time it controlled a significant area of territory where various CW-related compounds could be found, including chlorine and sulfur mustard. Second, IS was able to recruit foreign adherents with chemistry, biology, and engineering backgrounds, as well as former Ba'athist scientists like Abu Malik. Although the Islamic State does not have all the characteristics of a state that are generally needed to start a CW program, the availability of the necessary materials, technical expertise, and know-how, and the relative ease with which chlorine and sulfur mustard can be weaponized, make the production of crude chemical weapons highly possible. ■

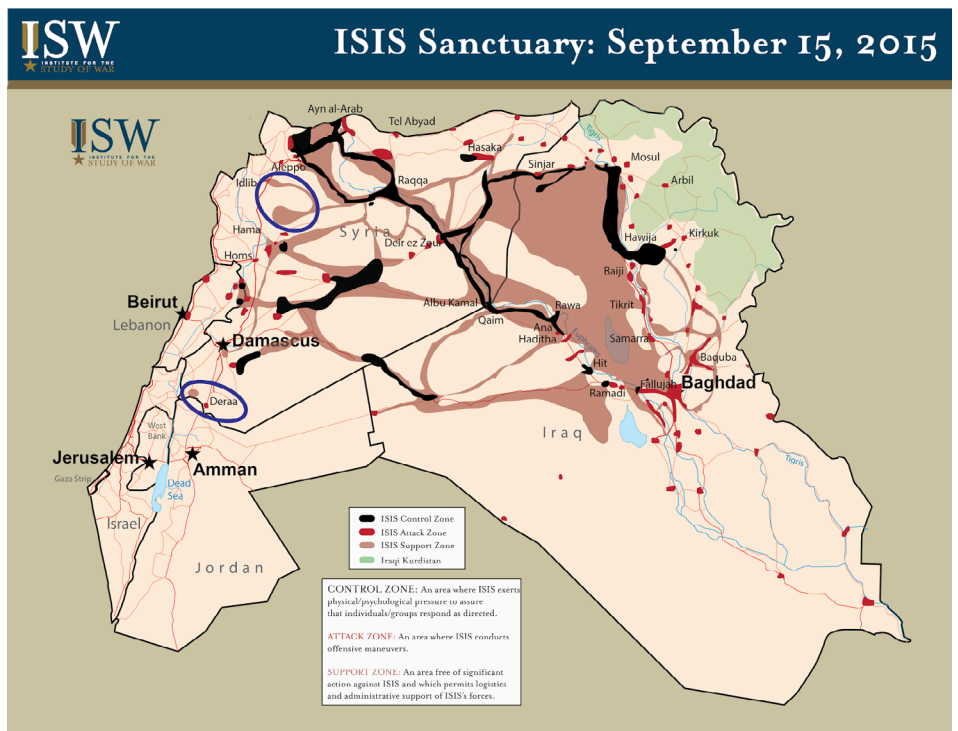
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The 'Successful' IS on Its Way to the Self-declared Islamic Caliphate



Source: Institute for the Study of War. Online available at <https://iswresearch.blogspot.com/2015/09/by-isw-research-team-key-takeaway-isws.html>.

The Islamic State's Acquisition and Use of Chemical Weapons

Assessing the Past and Potential Threats

PART II

Simeon Dukić

This POLICY FORUM issue, a continuation of POLICY FORUM No. 2, will examine the CW attacks that the Islamic State allegedly carried out in Syria and Iraq. It will argue that there is sufficient evidence that this group has developed a rudimentary chemical weapons capability and has used sulfur mustard in Syria. This article will also contextualize the threat posed by the Islamic State's CW capability by comparing it to the threat posed by other state and non-state actors' deployment of this category of weapons. The POLICY FORUM issue will then evaluate the future threat posed by the Islamic State's use of CW in and outside the Middle East. Finally, this article briefly offers policy solutions to minimize the threat posed by this terrorist group. Definitions of all acronyms already used in Part I (POLICY FORUM No. 2) can be found there.

Assessing the Islamic State's Alleged Chemical Weapons Attacks

It is difficult to ascertain the exact number of CW attacks carried out by the Islamic State. Without a proper on-site investigation, it cannot be said for certain that a particular chemical was used in an attack. Moreover, since this actor has been conducting its operations in a war zone, it is also likely that some incidents might have gone unreported. Nonetheless, various authoritative sources have demonstrated with a high degree of certainty that this group did use chemical weapons as a part of its tactic to maximize violence and terror. Many experts have attempted to assess the utilization of this category of weapons based on open-source information. (Binder/Quigley/Tinsley, 2018: 27-28) identify 37 alleged instances in Syria and Iraq from 2014 to 2017 by researching mostly IS propaganda instruments, e.g. magazines such as *al-Naba*, *Dabiq*, and *Rumiyah*.

According to the authors, the Islamic State used two types of agents: toxic industrial chemicals and warfare agents, mostly chlorine and sulfur mustard, both of which are readily available and are not difficult to weaponize (Binder/Quigley/Tinsley, 2018: 27-29). Covering roughly the same period, *IHS Conflict Monitor* (June 29, 2017), a subsidiary of an information analytics company, using other open-source data identifies

71 alleged CW attacks carried out by IS. Other organizations such as the Syrian Network for Human Rights and the Syrian Archive have also published findings pointing to the Islamic State's routine utilization of CWs, all of which caused very few casualties.

Nevertheless, the most authoritative information on the use of chemical weapons by the Islamic State comes from the Organisation for the Prohibition of Chemical Weapons-United Nations Joint Investigative Mechanism (abbreviated hereafter to OPCW-UN JIM). The JIM's mandate was to identify as accurately as possible individuals and groups who perpetrated, organized, sponsored or otherwise facilitated CW use on the territory of Syria (OPCW-UN JIM, 2016a: 3). The JIM reviewed hundreds of alleged CW-related incidents, but compiled conclusions for only a handful of cases. According to JIM reports, the salafi-jihadi group utilized particularly sulfur mustard, in at least two cases: the attacks at Marea and Umm Hosh. The Islamic State carried out the Marea attack on August 21, 2015, by filling projectiles with a dark viscous liquid that had the characteristics of an impure form of sulfur mustard developed through the relatively uncomplicated Leinweinstein process (OPCW-UN JIM, 2016b: 93-97).

This report strengthens the argument that this group did not acquire CW from the regimes of Bashar al-Assad and Saddam

Hussein, but manufactured precursors itself. The projectiles filled with toxic chemicals were still intact after use, which means that they were not carrying explosives. Additionally, the symptoms developed by the victims aligned with the effects of exposure to sulfur mustard. On September 16, 2016 IS also fired mortar bombs filled with sulfur mustard at Um Hosh, a village seven km south of Marea. As in the previous case, the agent was developed through the Leinweinstein process, and victims showed signs of blistering, which is a symptom of exposure to sulfur mustard (OPCW-UN JIM, 2017b: 15-19). In terms of the JIM's work, it is important to note that it had a high threshold for concluding that CW were used, it was mandated only to look at cases in Syria, and its mandate was discontinued after the Russian Federation vetoed its renewal in the UN Security Council in October 2017 (UN/United Nations, October 24, 2017). Consequently, these reports prove that the group used chemical weapons, but they do not portray the whole picture on the battlefield in Syria, other instances of CW deployment in Syria and Iraq, and the attempted use of this category of weapons in attacks outside Syria.

Putting the Threat into Context

In order to assess the threat emanating from the Islamic State's CW-related in-

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tentions and capabilities, it is necessary to provide an appropriate context by making a comparison with the CW threat posed by other non-state and state actors. CBRN terrorism is not a new phenomenon: Many non-state groups have sought to acquire unconventional weapons that could be used to terrorize the general public. Salafi-jihadi groups are just one in the spectrum of entities that have actively sought these weapons. It is striking that compared to other Sunni extremist groups and other non-state actors, the Islamic State has most routinely utilized CW on the battlefield. For example, Aum Shinrikyo, the sect that released sarin in the Tokyo subway system in 1995, only conducted a total of ten CW-related incidents, while the Tamil Tigers separatist group in Sri Lanka used chlorine only once (Chapman, 2017). It is no secret that al-Qaeda and its affiliates have also attempted to gain WMD capabilities. Syria has been the site of many allegations that Jabhat al-Nusra and its successors (Jabhat Fath al-Sham and Hayat Tahrir al-Sham) have conducted CW attacks.

The JIM invited relevant actors to share information on possible CW utilization by all non-state groups, explicitly referring to the Islamic State and al-Nusra (OPCW-UN JIM, 2017a: 4). In its Seventh Report the JIM stated that it had received seven allegations that al-Nusra had filled missiles and rockets with toxic chemicals (OPCW-UN JIM, 2017b: 12). Nevertheless, the JIM did not find any instances where al-Nusra employed chemical weapons. Furthermore, many allegations were made against al-Nusra, most importantly from the Assad regime, in order to discredit it, because the prohibition of chemical weapons is an internationally accepted norm.

For many of the allegations there is no evidence that al-Nusra possessed chemical weapons or their precursors, or carried out attacks. For example, al-Nusra was alleged to have carried out the CW attacks on Talmenes on April 21, 2014, but after a detailed investigation the JIM found that the Syrian government was responsible for this incident (OPCW-UN JIM, 2016a: 43-51). Despite the allegations, there is very little evidence that al-Nusra used this category of weapons in the same routine way as the Islamic State did. Nevertheless, one

should not become complacent and conclude that al-Nusra will never contemplate developing this kind of capabilities. The group's decision not to acquire and deploy them is based on a strategic decision to gain popular support by portraying itself as a moderate organization that focuses on improving local governance. But this may change at any time.

When compared to the state-sponsored use of CW, the Islamic State's possible utilization of such weapons can be considered a low-grade threat. As of August 2018, the Syrian Network for Human Rights (August 28, 2018: 2-5) has identified 216 CW attacks carried out by the Assad regime that killed at least 1,461 people (1,397 of them civilians) and injured at least 9,753. Similarly, the Syrian Archive (2018) has identified 212 CW attacks conducted from the the start of the war until April 2018. It bases its findings on 190 different sources and 81 verified videos that corroborate the incidents. More importantly, the JIM reports attribute the majority of confirmed CW attacks to the Syrian government. In total, the JIM reported four cases where the Syrian government used CW, including at Talmenes (April, 21 2014), Sarmin (March 16, 2015), Qmenas (March 16, 2015), and, controversially, at Khan Shaykhun (April 4, 2017). At the time when its mandate was withdrawn the JIM was still analyzing several cases of CW attacks for which the Assad regime was allegedly responsible; however, because the organization ceased to exist there are no findings on these incidents. The attacks were executed by dropping barrel bombs filled with chlorine from helicopters. They were systemized and employed higher-quality precursors from Syria's CW program.

Even though the Islamic State used chemical weapons in an unprecedented way for a hybrid/non-state actor, it should be noted that in terms of lethality it remains a minor threat compared to the one posed by the Syrian regime or any other state actor. If we compare the numbers of people allegedly killed and injured by this category of weapons, the number of victims ascribed to the Syrian government is substantially higher than those associated with IS attacks. As previously mentioned, in the Islamic State's strategic thinking the



main role of chemical weapons is to create panic among its local enemies and to wage psychological warfare.

Future CBRN-related Threats

In fact, the Islamic State has not been defeated militarily, since it is estimated to have some 20,000 to 30,000 fighters in the region. What is more, IS “is reconstituting a capable insurgent force in Iraq and Syria”. It is “waging an effective campaign to reestablish durable support zones while raising funds and rebuilding command-and-control over its remnant forces” (Wallace/Cafarella, October 2, 2018). Against this backdrop, U.S. President Donald Trump’s decision at the end of 2018 to (slowly) withdraw all 2,000 American troops from Syria was heavily criticized: A withdrawal would jeopardize the territorial gains against IS made by the U.S. and its coalition partners, and it could be given space to regroup (Callimachi/Schmitt, December 23, 2018).

It is highly unlikely that IS will merge or cooperate with al-Qaeda at the strategic level, because it considers itself the legitimate standard bearer of jihad (Hassan, 2018: 6). Moreover, the role played by the Islamic State will have detrimental implications in the medium term because this actor rejuvenated the salafi-jihadi movement, which had been relatively dormant prior to the Arab Spring (Schweitzer, 2017: 1-2). In terms of the threat posed by chemical weapons, Hamish de Bretton-Gordon, a CBRN terrorism expert, believes that the jihadi group will continue to acquire and utilize unconventional weapons (Cruikshank, 2018: 5-7).

Having already developed and deployed CW, the IS leadership has enhanced its technical ability to handle this category of unconventional weapons, and, based on its experience, it can improve their tactical use. In addition to the continued threat of CW being employed in the Middle East, it is highly likely that there will be a more extensive CBRN threat in other theaters, including in Western democratic states. In two recent incidents reported in Australia and Germany, IS associates produced hydrogen sulfide and ricin, respectively (Flade, 2018: 1-3).

Conclusion: Action Still Needed

The Islamic State is an extremist group that poses a threat to all nations, both regionally and internationally. Moreover, preventing the use of CBRN weapons, particularly chemical and biological ones, constitutes an international norm that unites almost all states. Consequently, the CBRN threat posed by the Islamic State offers a unique opportunity for strengthened cooperation, coordination, and communication among regional actors in the Middle East.

Working successfully to deal with this issue will also serve as a confidence-building activity that could trigger efforts to achieve greater security cooperation in other areas. Track I and II processes should be aimed at mitigating this crucial regional and global problem by opening new avenues for more extensive operational information sharing, coordinated activities, and new opportunities for greater regional cohesion. ■

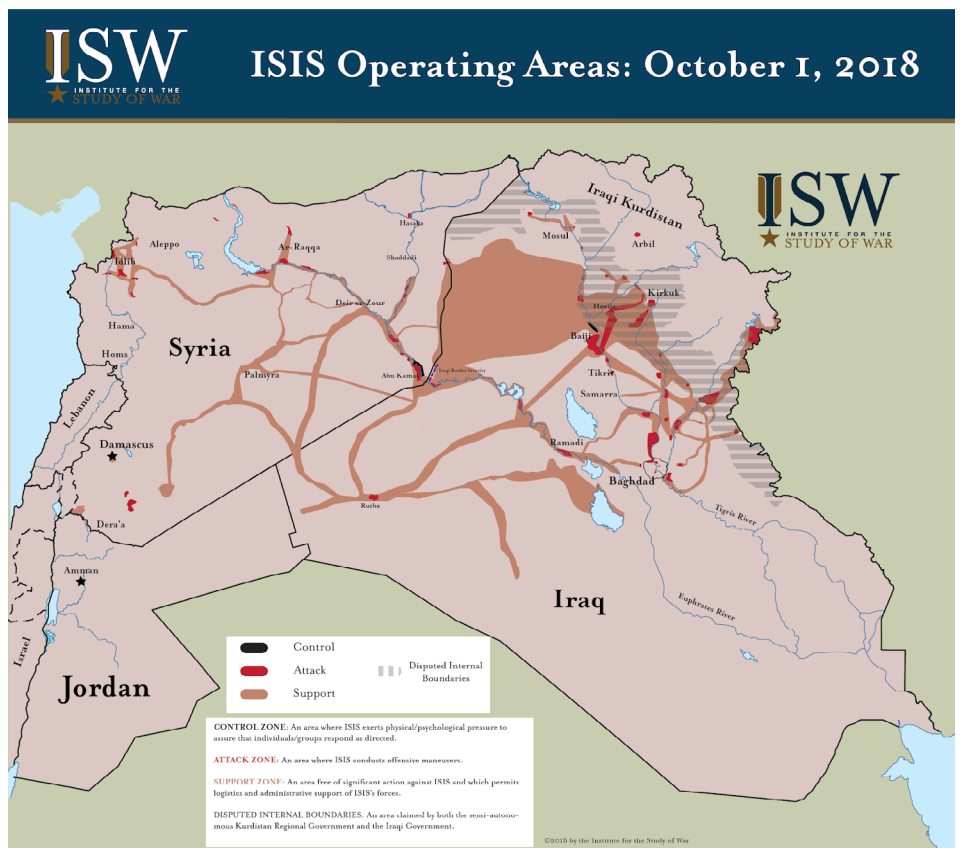
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The Islamic State's Diminished Caliphate But in View of a Possible New Resurgence



Source: Wallace/Cafarella, October 2, 2018. Online available at <https://iswresearch.blogspot.com/2018/10/isiss-second-resurgence.html>.



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