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- Schmid, Alex (ed.) *Handbook of Terrorism Prevention and Preparedness*, The Hague: ICCT, 2021.

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The "Mujahid's Bag": Digitally Curating the Legacy of Foreign Fighter Training Materials

Moustafa Ayad

As the story has been told, Abu Hamza al-Sudani died in a trench, kneeling with his forehead planted to the ground as if in the midst of prayer.[1] Sudanese by birth, al-Sudani, whose real name was Abdul Salam Mahmoud, was one of 230 Australian foreign fighters who travelled to Syria.[2] He had in fact travelled to Syria twice. The first journey was after witnessing the Egyptian military crush Muslim Brotherhood protesters in the 2013 coup that brought about the autocratic regime of Abdelfattah al-Sisi. Mahmoud — who was studying Islam in Egypt at the time — was troubled by the upheaval, violence, and "oppression," and decided he would "fight for the oppressed" in Syria. However, the infighting between groups, and his mother's illness back home in Australia forced him to leave.[3] A year later he would return, this time determined to join ISIL. It was 2014, and a battle of legitimacy was raging between Jabhat al-Nusra, al-Qaeda's fighting force in Syria, and ISIL. Al-Nusra framed the fight as the "Great Fitnah," or civil strife. Like many Australians who had travelled to Syria, Mahmoud was also linked to the highest-ranking Australian ISIL commander Mohammad Ali Baryalei, an Afghan-Australian who allegedly recruited 30 to 60 others to fight in Syria.[4]

Just like Baryalei, Mahmoud began as a foot soldier in Sydney's "Street Dawah" movement. Camera in hand, and under the guidance of Baryalei, he and others attempted to convert people for the sake of Islam, including with their YouTube Channel with more than 12,000 subscribers. They were a group of young, Muslim men, who at one time were all deep into "thug life,"[5] and it was Islam, in their opinions, that had saved them from "the deceptions of the glittery Western lifestyle."[6] They became prolific propagators of the Salafi-jihadist cause.[7]

Mahmoud's Facebook account, under his *kunya*, or nom de guerre, Abu Hamza al-Sudani, had more than 3,600 followers. Along with videos of injured children,

and atrocities carried out by the regime of Bashar al-Assad, he used the account to post content like that of the Jund al-Sham, a Salafi-jihadist group linked to al-Qaeda in Jordan, Lebanon, and Syria, and the teachings of the spiritual leader of al-Qaeda in the Arabian Peninsula (AQAP), Anwar al-Awlaki. While he publicly stated he supported none of the Salafi-jihadist groups in Syria,[8] Mahmoud also praised Numan Haider who stabbed two Australian counter-terrorism police before he was fatally shot by another.[9] Then, in 2015, *al-Risalah*, the premier English-language magazine of al-Qaeda at the time, reported his death during battle.[10] After more than a year of pronouncements that he was only providing "humanitarian aid" in Latakia, the mirage was shattered by a lengthy, stylized article of his life, and death, to entice more fighters from abroad to join their ranks.

Now, almost eight years after al-Sudani's demise, the author has a greater understanding of what he likely read, watched, shared, and ultimately, curated for other foreign fighters, based on researchers unearthing the largest, publicly available cloud-based storage drive of Islamic State propaganda on the open web. Using the end-to-end encrypted cloud-storage platform NextCloud, ISIL supporters over the course of the past six years created and curated a massive drive of content, representing some 2.2 terabytes (TB) of internal and external documents, videos, audio content, images, and ready-made social media posts.

The NextCloud site, which is being called "Cloud Caliphate,"[11] contains 97,706 folders and files of content, spanning the historical record of ISIL's existence. Al-Sudani,[12] and other Salafi-jihadists played a key role in compiling some of the content and creating a digital training camp environment for would-be fighters and attackers.[13] The content available through the drive goes back to 1999, beginning with ISIL's genesis as Jama'at al-Tawhid wal-Jihad under the leadership of Abu Mus'ab al-Zarqawi, to its current leadership in the post-Abu Bakr al-Baghdadi-era.[14]

There are 24 primary folders within the "Cloud Caliphate": Recent Content, Archives of the Genesis of the Islamic State, Archives of the Emirs of Jihad, Archives of the Chants of the Caliphate, Archives of al-Bayan Radio, Archives of al-Furqan Media, Archives of the Old States, Archives of al-Amaq Bulletins, Archives of Military Sciences, Archives of the Wills of the Martyrs, Archives of al-Nabaa Newsletter, Archives of the Scholars of Jihad, Archives of the Fatwas over the Airwaves, Archives of Himmah Library, Content of the Caliphate's States, Photo Stories, Quran for the Mujahideen, Supporter Groups, The Islamic State Curriculum, Non-Arabic Content, Single Pieces of Content, Sarh al Khalifah, Content for the Holy Month of Ramadan, and Various Content.[15]

Through the "Military Sciences" folder, the author located a subfolder believed to be curated in 2014 by al-Sudani, named the "Mujahid's Bag."[16] The files in the "Military Sciences" folder provide a snapshot of the key documents an ISIL recruiter either read or intended to read and curated in order to enlist, and ultimately, train new recruits. To understand the overall significance of the training material for potential fighters, this research seeks to understand where there is emphasis onin the "Military Sciences" training materials, and what materials currently exist that could be being used to prepare ISIL fighters for the battlefield and beyond.[17] The author seeks to use the "Military Sciences" as a case study on how fighters prepared themselves for travel, battle, and eventually death or imprisonment.

Based on the analysis of the "Military Sciences" folder, ISIL supporters have attempted to develop a well-organized virtual training program, built on intra-Salafi-jihadist knowledge which stretches the gamut to include Hamas as well as groups such as al-Qaeda. The "Military Sciences" folder includes material that focuses on ideological indoctrination, physical training, explosives development and weapons instruction. In total, the "Military Sciences" folder contains 4,333 documents, presentations and videos that detail various training precepts, which fall under the following classifications:

1. Legacy Training: ISIL supporters seek to build on and learn from rival Salafi-jihadist group training materials. This involves studying the history, strategies, and tactics associated with groups such as Hamas, al-Qaeda, and others, in order to build on concepts and knowledge presented in those materials. This includes videos, pamphlets, and social media content for training, battle, imprisonment, and counterintelligence.

2. Physical Training: ISIL supporters seek to prepare recruits and fighters for battle through vigorous physical training regimens to prepare them for combat. This includes endurance exercises, weapons handling, and hand-to-hand combat training. The group has been known to use obstacle courses and other physical challenges.

3. Weapons Training: ISIL supporters seek to educate recruits for understanding to understand a variety of weapons, including firearms, grenades, and improvised explosive devices (IEDs). The group also teaches its recruits how to build and use IEDs, which have been a significant part of the group's warfare tactics. There is also an emphasis on biological and chemical warfare, a violation of international criminal law.

4. Explosives and Specialized Training: ISIL supporters believe in the need for specialized training in areas such as sniper operations, bomb-making, and intelligence gathering. The group has also been known to train boys as child soldiers, who are indoctrinated and taught to fight for the group, a violation of international criminal law.

5. Web-based Intelligence Training: ISIL supporters believe that understanding intelligence gathering techniques is key for success on the battlefield as well as for plotting successful attacks. This includes studying the intelligence gathering techniques used by states for counterterrorism.

The training material contained within the "Military Sciences" folder is composed of a variety of resources that provide instruction on various aspects of ISIL-backed warfare, including jihad-based theology, military strategies and tactics, and propaganda. Key to understanding the use of training material in the "Military Sciences" folder is that not all the content is produced centrally by the ISIL;[18] instead, much of it is curated by those who have fought with the group or sought to compel others to fight. In fact, ISIL, as a group, and ISIL supporters seem to have built on the training curricula of adversarial groups to prepare their recruits. In this way, the content of the "Military Sciences" folder is varied, in that it provides a grab-bag of training materials from a range of groups, as well as ISIL itself. Similarly, the materials contained in the "Military Sciences" folder focuses on religious instruction (key fatwas by ISIL theological leadership on battle, as well as those in their ambit), including Quranic verses and interpretations that support ISIL's concept of jihad, e.g. the use of ISIL media outlet's branded Quran.

The material curated into the "Military Sciences" folder is multilingual, including Arabic, English, French, German, and other languages, to reach a global audience. The material provides a framework for understanding the role of ISIL violence in achieving political and religious goals, and sheds light on the significance of specialized knowledge. The impact of jihadist training material is not limited to radicalization and recruitment. It also plays a role in providing the basis for planning and executing terrorist attacks. Materials on guerrilla warfare provide practical guidance on tactics and strategies for conducting attacks. Propaganda materials, including videos and social media posts, help to inspire and motivate attackers.

The author's analysis of this supporter-curated digital archive indicates that the ISIL training program mimics and pilfers from the legacy of terrorist training materials on the open web, while similarly contributing specific ISIL-linked publications that are intended for committed fighters who are willing to die for the group's ideological precepts, whether on the battlefield or in high-profile attacks. The ISIL-supporter training regimen is part and parcel of a Salafi-jihadist history of using the internet for training purposes, dating back to as early as 1996.[19] The sharing of manuals to develop poisons, build explosives, or guidelines for potential attacks with an internet-based global audience at the end of the 20th Century was a watershed moment for the ability of groups like al-

Qaeda with global ambitions.[20] Salaf-jihadist training materials have remained a defining element of online terrorist ecosystems since.[21]

This chapter will provide a comprehensive analysis of the history and networking behind the sharing of online Salafi-jihadist training material, with a specific focus on the content contained in the "Military Sciences" folder. The analysis of "Military Sciences" will provide insight to prosecutors as they seek to understand content that foreign fighters were exposed to, or sought out, either prior to joining the group or preparing for battle in Syria and beyond. The chapter will delve into the scope of the content in the "Military Sciences" folder and attempt to provide an analysis of tactics or strategies that could have provided support to war crimes committed by ISIL foreign fighters.

The chapter is divided into five distinct sections. First, the author will highlight the centrality of digital archives both theoretically and to al-Qaeda and ISIL supporters for the overall terrorist digital ecosystem. Building on this section, the second section will dissect the specific ISIL-supporter digital network that has built, supported, and disseminated the "Cloud Caliphate" archive. The section will outline the genesis of the support group behind the "Cloud Caliphate's" development, and its centrality to the overall ISIL digital ecosystem on the open web, as well as its linkages to real-world criminal cases. The third section will outline the overall scope of the "Military Sciences" folder in the "Cloud Caliphate," to provide policymakers and prosecutors with insight into the military training material curated by and likely used by ISIL fighters and tacticians. The fourth section will highlight the key documents that can be categorized into the author's five-point framework for classifying ISIL military training materials.[22] The last and final section will provide recommendations for policymakers as well as prosecutors based on the analysis.

The Importance of Digital Archives: Remembrance to Revenge

Digital archives are key to imagined and real identities. Wolfgang Ernst, the German media theorist, wrote "the Internet extends the classical space of the archive, library, and museum by an extra dimension." That extra dimension is what drives us to create meaning out of loss. Following the devastating World Trade Center attacks of 2001, the September 11 Digital Archive was designed and developed to "create a permanent record of the events of September 11, 2001." The archive partnered with the Library of Congress a year later, and now represents one of the largest, most comprehensive digital archives of the terrorist attack to date. It contains some 150,000 pieces of digital content including about 40,000 emails, 40,000 first-hand stories, and 15,000 images.

Archives in this sense help to preserve the collective sensory memory of the most spectacular terrorist attack of the past two decades. However, just as digital archives provide us with the ability to come to terms with the past, they are similarly important because of their "substantially potentized present online accessibility." In this way, digital archives are central to the terrorist ecosystem on the internet and provide a global audience of supporters as well as foreign fighters with the ability to access training and other materials central to preparing for battle or other attacks. Tracing the development of terrorist archives online requires understanding the development and sustainability of websites and internet-based forums, anonymous sharing platforms, encrypted messaging applications, and lastly, open-source software leveraged to archive terrorist content.

Websites have been at the heart of Salafi-jihadist ecosystems since the 1990s.[23] In the early 2000s, al-Qaeda supporters had already begun developing their own stand-alone websites. Around the mid-2000s, internet-based forums linked to al-Qaeda and its affiliates began to appear with more frequency, and often linked back to websites that were developed a decade earlier.[24] With the advent of social media platforms, the terrorist ecosystem became increasingly decentralized decentralized, with supporters sprawling out across Twitter, Facebook, and YouTube, creating their own networks and content. However, websites and internet-based forums stayed at the heart of the online ecosystem.[25] With the rise of ISIL, policymakers began focusing on stripping terrorist support off social media platforms and targeting terrorist websites for takedowns. In response to these counterterrorism efforts online, supporters of groups such as al-Qaeda and ISIL, began using anonymous sharing platforms for sharing current and legacy content. Hand and hand with this development, was the creation of stand-alone digital archives to curate and provide resources to online terrorist-support networks.

Researchers at the University of Wollongong delved into the use of "anonymous sharing platforms and Islamic State content" in 2018.[26] Their aim was to provide response "countermeasures against online propaganda operations," and to do that effectively, research would have to go beyond the Telegram, and dive into "anonymous sharing portals acting as black boxes for ISIL-related propaganda." At the time, the research effort was focused on sites such as Archive.org, Justpaste.it, Sendvid.com, and Dump.to, and specifically because ISIL "networks seem to have reacted to the degradation of their capabilities on popular social media networks and rapidly migrated to new anonymous portals." While anonymous sharing platforms were, and continue to be, central to ISIL and al-Qaeda supporters online, they were a precursor and not a replacement for expansive digital archives built out by terrorist support groups across the open web.

Bearing this in mind, the research community has understudied Salafi-jihadist archives, and their digitization, despite archives becoming central to a range of terrorist groups and their primary media outlets. For instance, the al-Qaeda-linked Global Islamic Media Front (GIMF) uses a "proprietary file-sharing application," which is branded the Epic Drive, and once held digital territory on a .com top-level domain, and now on a .site URL top-level domain, uses NextCloud. "Gnews," another GIMF archive, also uses NextCloud. Al-Shabaab supporters man a similar drive, which is dubbed Kataib Drive, which similarly uses NextCloud. Then, there is the Shahab Archive, named after the official al-Qaeda media outlet, which is also using a decentralized open-source file hosting service like NextCloud, called OwnCloud. Similarly, Bangla-speaking al-Qaeda in the Subcontinent (AQIS) supporters use a NextCloud drive to store roughly 270 gigabytes of translated al-Qaeda content.[27] With the addition of the "Cloud Caliphate," there are five key drives that are commanded by affiliates and outlets of al-Qaeda and Islamic State supporters online. Four out of the five use the Nextcloud software to support their existence, and only one is currently accessible in full — the "Cloud Caliphate."

Utilizing SimilarWeb,[28] a proprietary website analysis service that provides traffic, social media engagement, and referral metrics data, the author found that the top three referring websites to the "Cloud Caliphate" in 2020-2021 were all ISIL-supporter run websites.[29] These sites accounted for 20 percent of all traffic into the "Cloud Caliphate" from April 2020 to April 2021. These three stand-alone platforms provide indication of the coordinated nature of ISIL support groups on the open web. They similarly provide a snapshot to the centrality of "Cloud Caliphate" and as a central aggregator for legacy and current ISIL content online. Understanding what the "Cloud Caliphate" holds, beyond its connections to support groups and sister websites, required the author to delve into its development and history, as well as the content it holds. Over the past year, the author has set up digital monitors and developed a data extraction tool to get granular insight into the training material available on the digital archive.

Tracing Cyber Support: Sarh al-Khliafah and the "Cloud Caliphate"

The "Cloud Caliphate" can be linked back to one ISIL support group amongst many named Sarh al-Khilafah, the Monument of the Caliphate.[30] The group's name is likely derived from an Islamic State al-Furqan 2016 media release by the same name, which was a detailed 15-minute video outlining the Islamic State's territories at the time, as well as its administrative and organizational structure.[31] Sarh al-Khilafah manned both a Telegram bot, which disseminates the "Caliphate Cloud" folders, as well as a now-defunct Hoop channel of 1,474 members, that

was created in April 2020, and removed by the site in September 2020. The author found numerous .txt files titled "readme" in several of the folders of the "Cloud Caliphate" that linked the site to the Sarh al-Khalifah group. Sarh al-Khalifah's site usage has a similar platform use pattern as The Electronics Horizon Foundation, both utilizing the druager.de messaging application, they are similarly using the same NextCloud technology.[32] It is unclear, however, beyond the use of the same platforms, if the connections go beyond a suite of similar applications to support their online presence.

What is clear is that Sarh al-Khalifah is linked to a recently redesigned ISIL al-Bayan Radio website, that provides live streaming services of Islamic State radio content, and links to the Sarh al-Khalifah's Hoop and Telegram channels in its "about us" section. The al-Bayan Radio website was rebranded in 2021 as Anfal Radio. However, it still carries the same URL as it did under the brand of al-Bayan. The site directly links to all but one of the primary folders available in the "Cloud Caliphate." Sarh al-Khalifah has similar connections to another site, "The Punishment," an Islamic State supporter website that transitions its top-level domains monthly in order to avoid takedowns. The site was once advertised by a fake Netflix account on Twitter in 2020, as a means to "watch realistic and enthusiastic films" to "show who will rule the world after this corona COVID19." The site's navigation bar has a drop-down menu under a heading "plus+" that allows users to visit a page on the site called "important links." The page has a similar format as the al-Bayan website, and links to each individual primary folder of the "Cloud Caliphate," leaving out links to all but one primary folder. The drop-down menu similarly links to the Hoop and Telegram channels previously manned by Sarh al-Khalifah.

These stand-alone platforms are primary referral nodes to the "Cloud Caliphate." Through monitoring of the site over the past six years, ever since the discovery of the "Cloud Caliphate," stand-alone ISIL websites function as funnels for users to access the drive. This constellation of websites, which on the surface seem like separate propaganda projects by disparate ISIL supporters, are a part of an intricate ecosystem of ISIL support on the open web. The sites link or feed into one another in different ways, but they all seem to provide differing functions. While one site is a virtual video bank of Islamic State content, another ISIL-linked site functions as an aggregator and archive for news bulletins and beyond, and the last is an audio streaming site that mimics Spotify. The "Cloud Caliphate" takes this one step further, functioning as an Islamic State archive — much like a virtual Library Congress — it allows users to access the continually updated content curated by supporters to keep Islamic State media in continuous circulation online. The "Cloud Caliphate" sits dead center in this constellation of ISIL sites.

The "Cloud Caliphate" and Terrorism Offenders

In 2018, Thomas Osadzinski posted TATP-making instructions into a chatroom named "Weapons," threatened an attack, and pledged allegiance to ISIL.[33] A year later, Osadzinski had designed a computer program to organize ISIL media into a 700 gigabyte (GB) digital library, easily transferable to other ISIL supporters across the internet. Mirroring the concept of the "Cloud Caliphate," Osadzinski had programmed his computer to copy ISIL propaganda from the internet and send to other users on social media platforms.[34]

The United States Federal Bureau of Investigation (FBI) arrested Osadzinski in November 2019 and found his library of hundreds of gigabytes of ISIL material, including magazines, manuals, speeches, and videos on his computer. The case, and Osadzinski's tactics, mirror many of the same strategies used to build and share the "Cloud Caliphate," which happens to be more than 800 gigabytes (GB) larger than Osadzinski's terrorist stash. ISIL supporters behind the "Cloud Caliphate" are in fact disseminating the content and the link to the content in much of the same fashion, using a mix of automation and proprietary tools to spread its reach. The Osadzinski case highlights the centrality of digital archives such as the "Cloud Caliphate" and training materials, such as explosive manuals. Research into how sites such as the "Cloud Caliphate" play a role in the radicalization process have revolved around whether the internet plays a central role or a tertiary role in the radicalization process.[35] Thus far, the author has been able to connect the digital archive to two ISIL cases in the United States, despite the fact that tens of thousands access the archive monthly. Based on the two cases, the "Cloud Caliphate" is itself not a radicalizing agent, but instead facilitates attack plans and builds knowledge in would-be attackers.

Another case, with a direct linkage to the "Cloud Caliphate," involved a 23-year-old American named Muhammed al-Azhari, from Tampa Bay, Florida, who was allegedly plotting an Omar Mateen-style shooting.[36] Al-Azhari – who was initially convicted of terrorism charges in 2015 in Saudi Arabia for attempting to join Jaysh al-Islam and disseminating extremist propaganda – ended up in California in 2018, and eventually moved to Florida, where he worked at Home Depot.[37] Al-Azhari had already acquired three handguns by 2019, and was attempting to modify those weapons, according to the U.S. Justice Department, to conduct a mass shooting.

When FBI agents unlocked his mobile phone in April 2020, they found the same shortlink to the "Cloud Caliphate" saved in his "notes" application. At the time, agents had not redacted the shortlink, and did not describe it other than providing a full link to the archive in the publicly available affidavit. What is clear is that al-Azhari was likely not radicalized by the material in the archive and may have

been accessing it for training materials within its "Military Science" folder, such as manufacturing silencers.

While only two cases, Osadzinski and al-Azhari cases highlight the centrality of digital archives such as the "Cloud Caliphate" to the overall ISIL digital ecosystem.[38] Coveted for their training materials, cloud-based drives, such as the "Cloud Caliphate" and other versions of them, support the ability of ISIL supporters to prepare for a potential attack and provide them with the knowledge and know-how to do so. Digital archives host specialized knowledge on attack planning, weapons, explosives, and training for battle. They teach ISIL supporters counter-intelligence methods and practices. The tactical and military knowledge in ISIL digital archives in the "Cloud Caliphate" is of central concern to this chapter. By delving into the "Military Sciences" folder, prosecutors and policymakers will have greater insight into the types of war crimes the tactical material is intended to facilitate, such as chemical and biological warfare. The next section outlines a five-point classification system used to classify the material in the "Military Sciences" folder. This classification system provides prosecutors insight into the central training and war-preparation material likely used to prepare foreign fighters for battle.

Between "Military Sciences" and the "Mujahid's Bag": Understanding ISIL Virtual Military Training

The "Military Sciences" folder in the "Cloud Caliphate" contains 1,188 images, 700 PDFs, 217 text documents, 223 videos, 9 PowerPoints, and 51 audio recordings. The materials span the gamut, from instructions and the technical specifications around the design and development of a "nuclear bomb," to building and fastening a silencer to your gun from easily found materials. The overwhelming focus of the materials in the "Military Sciences" folder is on the manufacturing of explosives. In fact, 56 percent of the "Military Sciences" folder is dedicated to explosive development, strategy, and conducting explosive attacks.

To classify this massive set of diverse materials, the author homed in on the "Mujahid's Bag" subfolder located in the "Military Sciences" folder. The author focused on the "Mujahid's Bag" based on its history of being curated by a foreign fighter. To assist this effort, the author developed a five-point framework for the classification of the materials contained in the "Military Sciences" folder. This framework is as follows:

- Legacy Materials: These are materials collected from a range of Salafi-jihadist groups dating back to the influx of Arab mujahideen to Afghanistan in the 1980s, and includes historical materials collected from training camps in Iraq and Afghanistan. Included in this band of materials are strategic documents developed by Salafi-jihadist tacticians.
- Physical Training Materials: These are materials that provide would-be fighters with training regimes that could prepare them for battle. These materials have been collected from training camps and distilled into PowerPoints. This similarly contains tutorials on administering first aid on the battlefield.
- Weapons Training Materials: These are materials meant to familiarize would-be foreign fighters, as well as current fighters, with the types of weapons, ammunition and other arsenal that could be used on the battlefield.
- Explosives and Specialized Training Materials: These are materials intended to teach would-be foreign fighters' military strategy, as well as practical guides for bomb-making and chemicals development.
- Security and Intelligence Gathering Materials: These are materials used to enhance the ability of foreign fighters to find enemy intelligence that can be useful to the group during battles or planning for attacks. These materials similarly include how to survive incarceration and deal with investigators.

Using this framework, the author analyzed the contents of the "Mujahid's Bag" since it was the largest and central sub-folders contained in the "Military Sciences" folder.

Legacy Material

The largest subset of materials used for training recruits and those intended to fight amongst the ranks of the Islamic State are folders dedicated to the legacy of military strategies of a range of groups. Roughly twenty-five percent of the content contained in the 'Mujahid's Bag' is focused on the military strategy, tactics, and "science" of combat. These folders include 117 documents, many of which are books not produced by the Islamic State or adjacent Salafi-jihadist organizations, and instead general military science and pseudoscience of fighting wars.

Examples include "The Military Vietnamese Trails" by Ali Fayyad. The book focuses on lessons learned from the Vietnamese as they fought occupying forces. The first page asks (then answers): "Why and How did the Vietnamese win?"

Similarly, the inclusion of the "America and Gang Wars," whose author is unknown. This book is intended to be used as a guide for brigade commanders and their sub-units in counter-guerrilla operations and builds on U.S. counter-gang tactics in urban settings. It similarly includes the work of noted Orientalists, such as Lawrence of Arabia.

Some of the key legacy Salafi-jihadist documents in this folder, include Abd al-Aziz al-Muqrin's "A Practical Course for Guerilla War." Al-Muqrin was one of the central founders of al-Qaeda in Saudi Arabia, and this work is based on his experience fighting, and training others, in Middle East, Africa and Bosnia-Herzegovina. The guide lays out the process behind conducting assassinations, hostage-taking, gathering intelligence, preparations for attack, as well as "selecting personnel, executing with quick, deadly precision, and withdrawing afterward. Throughout, the treatise stresses the long-term, unconventional nature of jihad and the need to survive to fight another day (the course makes no mention of suicide attacks), covering such details as types of operational cell structure and size along with the characteristics of personnel and job functions for a typical organization."[39] He was killed in June 2004 by Saudi counterterrorism forces.

The folder similarly contains two encyclopedias. The first encyclopedia is a simplified "Encyclopedia of Contemporary Religions, Sects and Parties." The encyclopedia provides an in-depth overview of different religious sects, and is likely used to provide fighters and commanders with the ability to understand why a religious war must be fought with against other sects. The second encyclopedia is titled "The Illustrated Encyclopedia of Jews," written by Shiekh Tareq al-Suwaidan.[40] This is a 453-page antisemitic tome on Judaism, and the history of the Jewish people. In the book, al-Suwaidan claims "the falsified religion of the Jews, itself, encourages them to practice treason and treachery, and feeds them to make them a special group among humans, and confers upon them the right to exploit others on the most hideous paths of duplicity."

In the folder is also a copy of a 58-page word document penned by the father of the original Salafi-jihadist caravan to Afghanistan, Abduallah Azzam.[41] Azzam's document details "the corruption of the Islamic ummah," and outlines those responsible for Muslims the divergence away from 'Allah'. In it, Azzam blames the moral corruption of the ummah on western influence. Azzam's treatise is stowed away in a sub-folder dubbed the "Guide for the Study of the Preparations for Wars," which in of itself is a compendium of material meant to prepare fighters for the battlefield. Much of the guide is focused on the development of military acumen, physical, weapons and explosives training.

Physical Training Materials

In the "Mujahid's Bag" there is a dedicated folder to physical fitness. The files range from self-defense lessons to weight loss tips, understanding the history and lessons of ninjas, and Karate 101. The karate file includes visual aids and detailed descriptions of how many sets of punches, kicks, and ducks are needed for practice. The history and lessons of 'ninjas' document covers tactics found in different schools of ninjutsu and focuses on knowing oneself. Highlighted sentences read "you must be keen to know yourself and your capabilities as much as you are keen to know your opponent and your enemy's capabilities."

According to a Word document located in the folder titled 'The Goal of Physical Training', physical fitness is key to "complete all his actions in the best manner" which is important because "even if his use of weapons does not reach the degree of perfection, he is able to maneuver and take the best positions for shooting, and is able to perform his tasks with all speed and lightness, and physical exhaustion will not disturb his thinking and the speed of his initiative." The rest of the files in this folder contain rigorous workout schedules with supporting JPEGS and GIFs intended to build strength and fitness in foreign fighters.

Part and parcel of physical training for the battlefield includes first aid. The author of the Word documents in the folder is unknown, but the PDFs were written by Qassem Abbas al-Zahrawi, known in jihadist forums as Dr. Healing and Abu al-Ka'ka' al-Shami. The materials the authors present focus on a list of the expected dangers in the battlefield such as chemical burns and poisoning (mercury, lead, antimony, phosphorous, benzole, manganese, sulphur, chromium). Based on this, the authors also provide detailed instructions on how to treat wounds, assessing the condition of an injury, stemming bleeding, finding, or identifying broken bones, and addressing burns.

Weapons Training Materials

Weapons training is a central element for any would-be foreign fighter, and hence this folder contains detailed schematics as well as manuals for various small and large firearms, and ammunition. The folder similarly includes three weapons encyclopedias:
- The Russian Weapons Encyclopedia, containing 21 PDFs on various weapons such as anti- tank missiles, and automatic grenades.
- Weapons Encyclopedia from Al Mujahedeen Service Office, containing five files of 'large weapons' such as artillery weapons.

- The Global Encyclopedia for Weapons- First Book — Land Weapons, containing eight Microsoft Word documents on various weapons.

One of the sub-folders in this folder details and contains documents from the Al-Battar Camp in Afghanistan.[42] The documents include a detailed gun course, and one on anti-armor, and a 69-page PDF on light weapons which introduces and compares Kalashnikovs, Klokovs, rifles, MP5s, Sniper rifles, and PK machine guns. Another folder focuses on manufacturing weapons and ammunition at home, with detailed descriptions and images of gun silencers (image 3.2), bullet manufacturing, and how-to guides on building blasting capsules.

Explosives and Specialized Training Materials

Key to the preparation of fighters prepared to travel for the Islamic State was both knowledge of explosives and other chemical production methods. Fifty-seven percent of the content contained in the 'Mujahid's Bag' links back to the production, or the understanding, of explosives and chemical manufacturing. One folder titled "Thu al-Bajadeen Encyclopedia" has eleven PDFs which contain detailed instructions on the production of explosives and poisons, including lists of chemicals, amounts and instructions on combining them along with images and visual aids. These were compiled by Kata'eb al-Firdaws Al'ala, one of "the global Islamic brigades fighting the Jews and Crusaders," according to the documents. The same folder contains another encyclopedia (a Word document) "Abduallah Dhu al-Bajadin[43] Encyclopedia" containing chemicals, ingredients, recipes, and instructions with images of the making of explosives.

Al-Bajadin is mentioned in the file names as a chemist and a thinker. Originally, the name belonged to a second-degree *sahaba* (friend) of the Prophet, a man known for his dedication to Islam. The folder contains seven Word documents. Each file is a different method of creating a remote detonator, including exploding home bells and aerosol sprays. Another PowerPoint in the series functions as "an intro to manufacturing explosives" and illustrates how to use produce to test the acidity of the home-made concoctions, specifically red cabbage to test the pH.

Other examples include ways to make aluminum powder through breaking down cooking aluminum sheets with water in a blender. Part of this specialized training element was the failed attempt at creating weapons of mass destruction, and specifically a low-grade nuclear bomb. In one of the folders within this subset was an eleven-page PDF comprising a set of instructions on how to "build a nuclear bomb." The series begins with the following introduction, "the Islamic ummah will not win the strategic power in the military against its enemies until they gain rich scientific advancement," which is why the document focuses on

the creation and manufacturing of explosives. Each lesson covers a different aspect of making explosives.

A sixty-seven-slide PowerPoint document titled "The Six Steps to Making a Grenade" is the equivalent of a how-to guide, including step-by-step instructions on crushing the heads of matches (potassium chloride), with visual aids on how to gather the crushed powder and sift it to the final steps of boiling and reducing manure (to obtain ammonium nitrate) and compiling the various ingredients to make the grenade.

Security and Intelligence Gathering Materials

The third largest folder of content relates to elements of security and intelligence; this includes espionage, general chicanery, and methods by which to surveil and ultimately outsmart authorities, such as lawyers, judges, and correctional officers. In the first file of this folder, the trainers suggest the purchase and use of "spy devices," to navigate the criminal justice system. The document describes discreet spy devices that the readers could use against their enemies – or ones that can be used against them, such as voice recording pens, and hidden miniature cameras. Each listed product comes with a price tag of how much it costs (in United States dollars) to order it online within the United States, and another price for international shipping. The document goes on to advise the reader "if you sit with a lawyer or an opponent of yours and find him pulling a pen from his inner pocket, then putting it back, then pulling it out.... etc., beware because the man may be armed with an odd device that records every word you say." This section ends with this: "the price of the device, including shipping to any city in the United States, is $199. The price of the device, including shipping to any city in the world, is only $299."

The folder similarly details prison strategies for survival, most of it from Palestinian resistance groups. The word 'prison' comes up in three different titles, a Word document called "Investigative Methods used in the Zionist Enemy Prisons and Ways to Confront them," a PDF named "The Enemy Prisons," and a Word document, "Traps of Agents in Prisons: Deceptive Methods of Extracting Information." The primary use of Palestinian documents for this advice harkens back to the intricate and intimate understanding Palestinians have of prison settings and the likelihood of entrapment. The documents detail methods by which to lie to investigators, play jailhouse confidential informants, and to conduct counter-surveillance on correctional guards and lawyers involved in the prosecution or defense of cases. This folder similarly contains the "Encyclopedia of Jihad: Security and Intelligence," which is split into parts one and two. While

part one is illegible, part two is composed of 581 pages focused on security and intelligence. The comprehensive guide to intelligence services and their tactics, the encyclopedia, may be dated, but it provides recruits with the knowledge on how to evade prosecution and to prepare themselves for deception inside of prisons to survive and gain freedom once more.

Recommendations: Prosecutors and Policymakers

What is clear from this chapter's analysis of ISIL training material in one of the largest drives of online terrorist content on the open web, is that digital archives play a central role in facilitating the knowledge and know-how for would-be foreign fighters and attackers. The focus of the materials seems to be primarily on explosives development and usage; however, there are substantive portions of the drive dedicated to security and intelligence that could have provided foreign fighters currently incarcerated with the tools and strategies to manipulate investigators.

The clearest example of potential war crimes facilitation in the "Military Sciences" folder seems to be training materials dedicated to the development of nuclear, chemical, and biological weaponry to use on civilians and members of opposing forces. While it is unclear how reliable the documents are that detail the development of nuclear bomb development, or chemical and biological agents, the idea that ISIL supporters can draw on ISIL-produced material and other content suggests intent on using these weapons in the future. Understanding who within the group oversaw either chemical or biological weapon development could shed light on if these were developed, and what they were intended for.

Digital archives have evolved substantially over the past two decades of the Global War on Terror (GWOT). All the primary Salafi-jihadist groups not only man stand-alone websites, but also digital archives that host training materials and "washups" of successful attacks that can be used to inspire and educate would-be ISIL foreign fighters and individual attackers. Prosecutors should seek to understand what websites ISIL foreign fighters visited to learn how to cross-reference material accessed with that in "Cloud Caliphate." Understanding the knowledge acquisition process by foreign fighters would allow prosecutors to make a determination on whether other individual offenders have similar patterns and are likely accessing illegal material. There is a significant gap in understanding the preparedness of foreign fighters and what materials they read, websites they visited, and other activities they undertook to prepare themselves for the battlefield.

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[1] "Victory loves preparation." *Al-Risalah*. Issue 2: October 2015. 90-94.

[2] Doran, M. "Peter Dutton Wants to Stop Australian Citizens with Suspected Terror Links from Coming Home," 2019. Australian Broadcasting Corporation (ABC). Accessed at: https://www.abc.net.au/news/2019-07-23/temporary-exclusion-order-explainer/11330566

[3] "Victory loves preparation." *Al-Risalah*. Issue 2: October 2015. Pg. 91.

[4] Mosendz, P. "The Death of an Australian ISIS Leader," 2014. The Atlantic. Accessed at: https://www.theatlantic.com/international/archive/2014/10/australian-isis-leader-killed/382058/

[5] "Victory loves preparation." *Al-Risalah*. Issue 2: October 2015. Pg. 90.

[6] "Victory loves preparation." *Al-Risalah*. Issue 2: October 2015. Pg. 90.

[7] Chambers, G. "Extreme Prejudice: Terror TV on Australian Security Agency Watch Lists," 2015. The Daily Telegraph (Australia). Accessed at: https://www.dailytelegraph.com.au/news/national/extreme-prejudice-terror-tv-on-australian-security-agency-watch-lists/news-story/7cf99296b6d51184e43226ccb7e0300d

[8] Safi, M. "Australian Extremist Abdul Mahmoud Killed in Syria – Report," 2015. The Guardian. Accessed at: https://www.theguardian.com/australia-news/2015/mar/11/australian-isis-supporter-abdul-salam-mahmoud-killed-in-syria-reports

[9] Chambers, G. "Muslim Radical Abdel Salam Mahmoud Praises Slain Aussie 'Martyr' Numan Haider," 2014. The Daily Telegraph (Australia). Accessed at: https://www.dailytelegraph.com.au/news/nsw/muslim-radical-abdul-salam-mahmoud-praises-slain-aussie-martyr-numan-haider/news-story/e28e3c0b71453e46ec51b6a0c06ad0af

[10] Zelin, A. "The Age of Political Jihadism: A Study of Hayat Tahrir al-Sham," 2022. The Washington Institute for Near East Policy. Accessed at: https://www.washingtoninstitute.org/policy-analysis/age-political-jihadism-study-hayat-tahrir-al-sham

[11] As named by the author.

[12] Based on analysis of an introductory document penned by Abu Hamza al-Sudani in the "Muhjahid's Bag" subfolder, located in the "Military Sciences" folder in the "Cloud Caliphate"

[13] Stenersen, A. "The Internet: A Virtual Training Camp?" 2008, Terrorism and Political Violence. 20:215-233.

[14] Zelin, A. "The War Between ISIS and al-Qaeda for Supremacy of the Global Jihadist Movement," 2014. The Washington Institute for Near East Policy. Accessed at: https://d1wqtxts1xzle7.cloudfront.net/34054603/ResearchNote_20_Zelin-libre.pdf?1403877729=&response-content-disposition=inline%3B+filename%3DThe_War_Between_ISIS_and_al_Qaeda_for_Su.pdf&Expires=1691335873&Signature=CTYrtz1tGj7eskx4S8M5LirzlGxJk-NCNDeDHt19yJVU71igh9WgVXxdfduEO5uImlYVsADG8YHieQa90jxTduOkzZr6m0Pbn2CFzYlfj~SnzHZS-0UttdAYWn~SZqk2h3QPmbsyQ~x433b0zUCAnFG2JhbrSAjKA1r3tmw~9b7VBdkRObPi2XG8HVtV8u1xh7R46k9857WIE2zcN-7jZ6zDUekAFMWG66pZSwD1j3dg9aLykPNGEP1EfrNhr1Xp6ro2lFGmSUNHa1KH~b-gY-F3kKMgWg4nLaj8JRFiQRfy-b-v6f6HmEQAwVUR6HUdQwUqPjNzYg2Ot1bVJ9IHeg__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

[15] The data stored in these 24 folders is more than three times the amount of data the Central Intelligence Agency (CIA) made public after releasing the material confiscated from Osama bin Laden's computer in 2017

[16] Based on the analysis of "an Introduction" document left in the digital "Mujahid's Bag," signed by Abu Hamza al-Sudani and containing "a date created" by in the metadata that lines up to when al-Sudani was in Syria.

[17] The author intentionally excluded the regimented school curriculum devised by ISIL and delivered in schools across the expanse of its territory.

[18] The ISIL-aligned Al-Saqri Foundation for Military Sciences has a specific folder for all of the content that it has produced over the years, beginning in 2018. Webber, L. "Islamic State-Aligned 'Al-Saqri Foundation for Military Sciences' Launches New Incitement Campaign with Bomb-Making Manuals," 2022. Militant Wire, Accessed at: https://www.militantwire.com/p/islamic-state-aligned-al-saqri-foundation

[19] Weimann, G." " 2004. United States Institute for Peace (USIP). Accessed at: https://www.usip.org/sites/default/files/sr116.pdf

[20] Post, J. "Military Studies in the Jihad Against the Tyrants: The al-Qaeda Training Manual," 2004. United States Airforce Counterproliferation Center. Accessed at: https://www.airuniversity.af.edu/Portals/10/CSDS/Books/alqaedatrainingmanual2.pdf

[21] As recently as 2022, ISIL-linked support groups were leading incitement campaigns online using material contained within the "Military Sciences" folder in the "Cloud Caliphate."

[22] The author's five-point framework for classifying ISIL military training is as follows: legacy training, physical training, weapons training, specialized training, and web-based intelligence gathering training.

[23] Zelin, A. "The State of Global Jihad Online: A Qualitative, Quantitative and Cross-Lingual Analysis," 2013. New American Foundation. Accessed at: https://www.newamerica.org/international-security/policy-papers/the-state-of-global-jihad-online/

[24] Hegghammer, T. "Interpersonal Trust on Jihadi Internet Forums," 2014. Norwegian Defence Research Establishment (FFI). Accessed at: https://osf.io/vyeuz/download

[25] 'The Threat of Terrorist and Violent Extremist-Operated Websites," 2002. Tech Against Terrorism (TAT). Accessed at: https://www.techagainstterrorism.org/2022/01/28/report-the-threat-of-terrorist-and-violent-extremist-operated-websites/ Researchers at Tech Against Terrorism found 198 websites linked to terrorist groups and violent extremism groups. Out of those 198 sites, 79 were linked to "violent Sunni Islamist" groups.

[26] Mitew, T. E. & Shehabat, A. "Black-boxing the Black Flag: Anonymous Sharing Platforms and ISIS Content Distribution Tactics," Perspectives on Terrorism 12 .1 (2018): 81-99. Accessed at: https://ro.uow.edu.au/cgi/viewcontent.cgi?article=4675&context=lhapapers

[27] Based on analysis of the Bangla-language al-Qaeda drive conducted by the author in 2022.

[28] SimilarWeb is a proprietary service and hence does not provide detailed information on how it culls traffic to websites. The service claims to be General Data Protection Regulation (GDPR) compliant.

[29] At the time the websites were "Muslim News," a long-standing blog news site for official ISIL propaganda, "al-Bayan Radio," an audio archive and streaming platform, and "The Punishment," a media streaming archive.

[30] To date, the author has been able to track 62 different ISIL support groups on the open web.

[31] "The Monument of the Caliphate: The Islamic State Organization Explains its Administrative Structure for the First Time," 2016. Enab Baladi. Accessed at: https://www.enabbaladi.net/archives/89976

[32] Bennet, C. "New ISIS 'Help Desk' to Aid Hiding from Authorities," 2016. Accessed at: https://thehill.com/policy/cybersecurity/268940-new-isis-help-desk-unifies-encryption-support/

[33] Triacetone Triperoxide, which can be used for explosive devices. United States Director of National Intelligence. "First Responders Tool Box," 2019. Accessed at: https://www.dni.gov/files/NCTC/documents/jcat/firstresponderstoolbox/78--NCTC-DHS-FBI---Triacetone-Triperoxide-(TATP)-.pdf

[34] Masterson, M. "Former DePaul Student Sentenced to 7 Years For Attempting to Aid ISIS Terror Group," 2022. WTTW Chicago. Accessed at: https://news.wttw.com/2022/11/17/former-depaul-student-sentenced-more-7-years-attempting-aid-isis-terror-group

[35] Fürst, J.; Neumann, P; Melegrou-Hitchens, A; Ranstorp, M.; Vidino, L.; Winter, C. "Online extremism: Research trends in internet activism, radicalization, and counter-strategies." International Journal of Conflict and Violence. Vol. 14 (2) 2020. }With this in mind, most investigations into online extremism at the level of the user work with the assumption that radicalization, while it can be impacted by things that happen online, does not come purely as a result of online behaviors. Indeed, it is usually taken as a given that online processes, interactions and activities complement but do not substitute their offline counterparts, and that there is little sense in attempting to distinguish one sphere from the other." Accessed at: https://www.ijcv.org/index.php/ijcv/article/view/3809

[36] Surana, K. "Tampa Islamic State supporter rehearsed attach, tried to by gun before arrest, FBI says." "In his free time, he surfed Islamic State chatrooms that offered training on making suicide belts and bombs. He looked up details of Omar Mateen's 2016 shooting attack on Orlando's Pulse nightclub and googled 'Bayshore Boulevard' and 'busy beach.' One day, he drove out to Honeymoon Island in Dunedin, then turned around and drove straight back to Tampa." Accessed at: https://www.tampabay.com/news/crime/2020/05/29/tampa-islamic-state-supporter-rehearsed-attack-tried-to-buy-gun-before-arrest-fbi-says/

[37] Hassan, H. "The Army of Islam is winning in Syria." Foreign Policy, October 1, 2013. "On Sept. 29, at least 50 groups operating mainly around Damascus merged into Jaish al-Islam ("the Army of Islam"), thus undermining the FSA's dominance in a part of the country where it had long been considered the strongest rebel force." Accessed at: https://foreignpolicy.com/2013/10/01/the-army-of-islam-is-winning-in-syria/

[38] The author is currently reviewing all the publicly available affidavits in the United States to check if the archive is referenced in other cases.

[39] Dobransky, S. "Al-Qa'ida's Doctrine for Insurgency: 'Abd al-'Aziz al-Muqrin's A Practical Course for Guerrilla War," 2011. Air & Space Power Journal. U.S. Air Force. Accessed at: https://www.airuniversity.af.edu/ASPJ/Book-Reviews/Article/1293341/al-qaidas-doctrine-for-insurgency-abd-al-aziz-al-muqrins-a-practical-course-for/

[40] Colombo, V. "Tareq Suwaidan, Predicatore Antisemita in Italia. Ecco Le Prove Del Suo Estremismo," 2016. Informazione Corretta. Accessed at: http://www.informazionecorretta.com/main.php?mediaId=115&sez=120&id=61964.

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[41] Battiston, G. "Why Did Jihadism Go Global? Interview With Thomas Hegghammer," 2021. Italian Institute for International Political Studies. Accessed at: https://www.ispionline.it/en/publication/why-did-jihadism-go-global-interview-thomas-hegghammer-31621

[42] "A Guide to Jihad on the Web." The Jamestown Foundation. Terrorism Focus Volume 2, Issue 7. Accessed at: https://jamestown.org/program/a-guide-to-jihad-on-the-web-2/

[43] Considered al-Qaeda's bomb-making expert.