EYES IN THE SKY

Drones at Standing Rock and the Next Frontier of Human Rights Video

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On the night of November 20, 2016, the activists protesting the construction of the Dakota Access Pipeline (DAPL) in North Dakota were cold and fed up. For weeks, they said, they’d been asking authorities to remove a barricade blocking a bridge that connected their camp to the city of Bismarck. Authorities told reporters the bridge was unsafe to cross, while the protesting groups, who call themselves “water protectors,” said it was obstructing the entry of vehicles needed in case of medical emergencies. Tension had been mounting during months of escalating confrontations between the joint forces of privacy security companies and law enforcement and the Native American tribes and other advocates who say the pipeline endangers their water supply and sacred sites.

Finally the protesters decided they would attempt to remove the barricade themselves, a move authorities classified to reporters as a “riot.” For hours the bridge and adjacent fields witnessed a chaotic scene in which the activists were doused with streams of water, tear gas and rubber bullets in subfreezing temperatures, resulting in cases of hypothermia and injuries that required medical attention. Unsurprisingly, the events were widely documented, livestreamed and shared via social media with posts that garnered thousands of views. While initially drawing little mainstream media coverage, the documentation of the clashes at the Standing Rock Sioux reservation on social media in the fall of 2016 brought widespread attention to what had been dubbed the #NoDAPL movement.

But some of the clearest and most impactful footage offered a literally new perspective. Myron Dewey, a journalist and founder of the indigenous media platform Digital Smoke Signals, was capturing the scene from above with his drone and sharing it on Facebook Live. The footage, which clearly showed torrents of water falling down on protesters, now has over a million views on Facebook and was used to challenge statements by law enforcement suggesting the water cannons were primarily used to put out fires.

Dewey was one of a handful of drone operators who filmed over the course of several months at the site of the Standing Rock reservation in what might become a case study for the future use of drones (formally known as unmanned aerial vehicles - UAVs) by human rights activists. It’s now widely accepted that cell phone-recorded video has fundamentally changed the game for documenting human rights issues from Cairo to Ferguson. As drone technology and prices become increasingly accessible, might they take on a similarly transformative role? Could activists reclaim a technology commonly associated with surveillance and targeted killings as an evidentiary and storytelling tool for advocacy and seeking justice? The use of drones for these purposes by activists in North Dakota over the past year may prove to be the tipping point in that direction. But the successes and setbacks drone operators faced at Standing Rock illustrate that the rules of the sky differ from those of the ground and offer important lessons for future adopters.
Up until relatively recently, if the words “drones” and “human rights” appeared in the same sentence it was mostly to protest the United States’ use of armed drones to carry out its targeted killing program. As unarmed drones became more prevalent, the debate shifted to surveillance and privacy concerns. But as far back as 2011, when social media platforms and mobile technology were making their mark on social movements ranging from the Arab Spring to Occupy Wall Street, Wired magazine was predicting a future in which “Protestors could use spy drones...the air is slowly opening up. And the cops don’t have to be the only ones with eyes in the sky.”

Six years later, thanks to changes in drone technology, affordability and, most crucially, flying regulations, Wired’s vision has been realized. At this point, according to University of Nebraska-Lincoln professor and drone journalism expert Matt Waite, “it is very likely if you get even a semi-large group of people that you might have multiple drones in the air.”

Aerial photography has a history of use for both documentation and storytelling purposes. In the human rights movement, the use of satellite imagery dates back as far as the Cold War, and more recently has been used to reveal the sites of widespread burnings in Northern parts of Burma’s Rakhine State, attacks and mass graves in Nigeria and Burundi, prison camps in North Korea, imminent attacks on civilians in Sudan, and the buildup of Russian troops on the Ukrainian border prior to the 2014 invasion.

Satellite imagery, however, can be expensive, very hard to interpret and not always pointed in the desired direction. As a study on drones by the New America Foundation has pointed out, the newest drones offer crisp resolution from a lower vantage point, on demand and at a fraction of the price. The high quality footage is both easy to access and understand, and can be strikingly beautiful.

The added value of a bird’s eye view is clear for groups working on environmental and land issues, and has been used to document activities such as illegal logging and deforestation. As with satellites, drones are able to offer a window into inaccessible environments—whether due to natural disaster (the 2015 earthquake in Nepal) or armed conflict (the destruction of Aleppo)—with far greater detail.

Despite the high angle, drones can be useful to film people, in addition to territory. There have been several instances of drones being used to film mass protests in places like Turkey and Hungary. Austin Choi-Fitzpatrick, an academic at the University of San Diego, has written
about the utility of drones for estimating crowd size at protests. Accurate crowd size estimation is important for messaging the strength or weakness of a social movement he argued (and this was before Donald Trump’s inauguration attendance became an issue of national debate). “Even 100 feet in the air it will convey the scope and scale of popular movement far more than cellphone footage on the ground,” Waite, of the University of Nebraska-Lincoln, said in an interview. Beyond counting crowds, the added perspective of filming from above with a wide angle most importantly “puts things into context,” Waite said. In drone footage of migrants at sea trying to reach Europe or walking along railway lines when stranded at the Hungarian border, for example, the bird’s eye view has been used effectively to emphasize the extent of the migrants’ vulnerability and the dangers of their journey.

The conflict at Standing Rock, which began as a struggle over land but evolved into a civil liberties crisis with accusations of excessive force by law enforcement, offered a unique opportunity to test the utility and adaptability of drones in a variety of situations. The vast rugged plains of North Dakota, whether muddy brown in the fall or later blanketed by snow in winter, seemed made for the sweeping aerial shots drones are famous for. As an advocacy and storytelling tool, the drone footage made a visually compelling case for the preservation of a place marked by environmental and traditional significance for the Standing Rock Sioux tribe.

But the drone operators also made more sophisticated use of their flying cameras for documentation and evidentiary purposes. In addition to Dewey’s footage of the November 20 incident, drone operator and filmmaker Dean Dedman Jr., also known as Shiýé Bidzill, posted widely shared video on social media under the name of his group Drone2bwild. In early November his drone flew over the site of a pipeline drill pad that appeared strikingly close to the Missouri River. The widely viewed footage visually illustrated, and for many corroborated, the tribe’s complaint that the proximity of the pipeline to their primary water source was a health risk.

In a standoff derived from contested rights to land and issues of indigenous sovereignty, the drones were invaluable in granting the activists visual entry behind security lines they couldn’t safely cross, Dedman Jr. said in an interview. It also allowed them to document what was happening on land where the tribe has sacred burial sites without having to walk there themselves. Stepping foot on this land is seen as desecration, Dewey said.

The most novel use of drones at Standing Rock, however, may have not been in filming land, but rather in maintaining a steady camera presence over people. Beyond merely capturing crowd size, drone footage was repeatedly used to document clashes between protesters and security forces.

“Oh on the front line everything is intense, you don’t see the other things that are going on,” Brooke Wakau, founder of Women’s Indigenous Media who was at Standing Rock, said in an interview. Drones, she said, provide “the full picture.” Her opinion was shared by Rhianna Lakin, who also flew a drone at Standing Rock. Mobile phones “can be pointed one way or another. But drones show you everything.” Combined with livestreaming distribution, the footage provided continuous, unedited, wide-angle documentation whose veracity was more
difficult for law enforcement to challenge, she said. Both women said activists came to view the evidence provided by the “eyes in the sky” as necessary for their protection. “People said ‘please put the drones back up!’,” according to Lakin.

Academics who have studied the use of drones by social movements highlight their equalizing potential to provide capabilities long held by more powerful entities, be they police drones or TV news helicopters. Dan Gettinger, Co-Director of the Center for the Study of the Drone at Bard College, said in an interview that drones were useful from a “tactical” perspective, allowing activists to counter-surveil law enforcement. News reports at the time described the militarized policing tactics and equipment used by local law enforcement at Standing Rock. In May 2017, The Intercept published leaked documents that revealed aerial and other surveillance measures used against protesters by TigerSwan, a private security firm hired by the company building the pipeline. “Civil society should push the advantage as far as it can,” Choi-Fitzpatrick said in an interview, and “exercise their right to tell its story from the same vantage point as the powerful.”

Drone operators in North Dakota said the technology was crucial in order to distribute narratives from an indigenous perspective not often found in mainstream media. Waukau was inspired to fly drones and found her media group after observing Dewey at Standing Rock. She and Dewey both said they took pride in the appropriation and marshalling of drones and livestreaming to tell their own stories considering the historical use of military technology to defeat Native American tribes. “We had to get creative,” Wakau said in an interview.
The expansive aerial shots captured by drones may be a boon for human rights storytelling and advocacy purposes, but what about as evidence? While the proliferation of mobile phone recording technology has undoubtedly changed the world of citizen journalism and human rights documentation, the complexity of verifying and contextualizing that footage has long been established.

In an academic article on the use of satellites and mobile phones for human rights research, Amnesty International’s Christoph Koettl wrote that the role of these technologies was to “reduce information uncertainty... [they] by themselves do not deliver complete truth—let alone provide a shortcut to justice.” Despite its wider perspective and higher definition imagery, drone footage may prove no different.

But in tandem with the multiple perspectives recorded by the ever-increasing number of cameras at a given event, drones have the potential to be a powerful analytical tool for reconstructing an incident. In the case of a hypothetical clash with security forces, cameras on the ground would be the best way to identify insignia or a specific weapon, Koettl said in an interview, but a drone might show who is giving a command or initiating a clash. Beyond video, drone footage can be useful for geolocation corroboration. The design and architectural firm Situ Studios assembled overlapping drone footage, hundreds of photos, audio and video recordings to create a digital reconstruction and 3D model of the 2014 Kiev Euromaidan protests and resulting deaths that will be used in a criminal trial.

But no matter how low or high tech, all documentation, including drone footage, must still meet the legal standards regarding relevance and reliability for admissible evidence. And the classic methods of human rights research, such as interviews, are still essential. Information and communication technologies, Koettl emphasized in his article on satellites, are most effectively used when corroborating and cross referencing eye witness testimony. The emblematic case of Aaron “Shawn” Turgeon from Standing Rock illustrates how in situations where all these elements can be woven together the resulting evidence can be uniquely convincing.
Like many at Standing Rock, Turgeon was inspired to travel to North Dakota after seeing video of the movement shared on social media. A rapper who records and performs under the name “Prolific,” Turgeon had barely used a drone before he found himself in the crosshairs of law enforcement on an otherwise peaceful day at the camp in early September, 2016.

Turgeon said in an interview that he initially cooperated when a police officer signaled to him to land his drone but that he protested when the officer moved to confiscate his device without a warrant or any explanation of what he had done wrong. The officer eventually relented after Turgeon challenged the legality of the move and as a crowd of observers began to film the encounter, Turgeon said, and left the scene without issuing a citation or ticket.

Turgeon heard nothing more about the incident until six weeks later, when he appeared in a video streamed on Facebook Live with Dewey. In a scene that appears in the 2017 documentary “Awake, A Dream From Standing Rock,” of which Dewey is one of three co-directors, Turgeon and Dewey livestreamed an encounter they had with a police officer patrolling one of the roads outside the camp. The officer and the two men engaged in a calm but impassioned debate through their respective car windows about the constitutional rights afforded by the First Amendment and Turgeon recounted his earlier encounter with the officer who tried to seize his drone. The next day, Turgeon said, he was stunned to receive an arrest warrant and learn he faced three charges stemming from the earlier confrontation, including the felony of reckless endangerment of law enforcement with his drone.

Despite the risk of a 7-year jail sentence, Turgeon refused the offered plea bargain and decided to fight the charges in court with the best evidence he had: his drone footage. At the trial, the police officer testified and presented cell phone footage that appeared to show that Turgeon had flown his drone towards a police plane in a way that endangered the aircraft, according to news reports. Turgeon countered this accusation by presenting a video he had edited together from his own drone and the cellphones of the observers who had filmed the incident on the ground.

With painstaking detail, Turgeon lined up the movements of identifiable people at precise moment in the multiple source videos which he showed in side-by-side comparison with the footage presented by law enforcement. He repeatedly paused the video to show in each frame where his drone was in relation to the police plane. The evidence was clear, according to the presiding judge. Turgeon had repeatedly checked his line of site to avoid any collision and had flown in a “methodical manner,” the judge said according to news reports. He “did not fly the drone at the plane. He did not fly the drone in a reckless manner over either the people or at the plane.” Turgeon was found innocent on all counts.

In other instances, security forces decided to remove drones from the sky by force. In October 2016, one of Dedman Jr’s drones was shot at with non-lethal ammunition after law enforcement claimed he was aggressively flying near a police helicopter. Dedman Jr claimed his drone was not close enough to endanger the helicopter. Regardless of the specific circumstances, the “FAA says shooting aircrafts is a federal felony and drones are regulated as aircrafts,” Waite said. “But when drones are shot down it’s suddenly not a problem.” Dewey stressed that getting into the habit of shooting down drones was a public safety issue. “If you shoot a bullet up, it has to come down,” he said. “Morton County law enforcement has to be held accountable for that.
In the course of the trial Turgeon and his lawyer discovered related evidence regarding one of the most controversial incidents in the struggle over the skies at Standing Rock: the Federal Aviation Administration's decision to grant local authorities a no fly zone (known as a Temporary Flight Restriction- TFR) for non-law enforcement aircrafts for more than a week over the area surrounding the protests. According to Parr, the curious timing of Turgeon's arrest warrant may have been related to efforts to get the TFR. Shortly after charging Turgeon, Parr said, authorities petitioned the FAA citing the recent endangerment of police aircrafts by drones as justification. "My belief is that the authorities fabricated those charges against [Turgeon] in order to use them to get a no fly zone," Parr said. "If I was innocent," Turgeon said, "then the TFR they applied for should never have been put in place. It was just a means to keep drones out."

The granting of the TFR raised concerns among many U.S. First Amendment advocates, including those who were uninvolved with the Standing Rock case.

But while the earlier decision was interpreted as a move to keep out media helicopters and mainstream press coverage, there were scant aircraft beyond those of the police at isolated Standing Rock. The protests were very much a "drone event" and the TFR was viewed by many as an attempt to counter an evolving threat and block the drones.

In September 2017, the online publication Motherboard obtained emails via a Freedom of Information Act request showing that while North Dakota law enforcement may have cited alleged aircraft endangerment as the justification for the TFR request, it was also openly discussing with the FAA its fear of the drones' recording capacity. In one email to the FAA, according to Motherboard, a North Dakota highway patrol sergeant wrote that: "We need to ensure the movement of law enforcement trying to protect the innocent is not being broadcast live by the use of drones. With today's technology this would be very easy to do with a drone and the camera capabilities." In an email to Motherboard, a spokesperson for the FAA insisted that "The TFR over

the pipeline protest was approved to ensure the safety of aircraft in support of law enforcement and the safety of people on the ground."

Additionally, The Intercept reported that during the time the TFR was in place the pipeline company and the private security firm TigerSwan were flying helicopters with law enforcement officials on board for surveillance purposes. The following year, according to The Intercept report, TigerSwan encouraged its employees to "focus on becoming Certified Drone Pilots to support the DAPL program."

This is the "next frontier of legal First Amendment challenges," Waite said. It's an "extension of the right to record…[drones] are a legit newsgathering tool….the FAA should not rubberstamp law enforcement requests for TFRs. They need to articulate some reason why... and [they should] be narrowly tailored." If the FAA was so amenable to granting a TFR in an unpopulated area far from urban centers like Standing Rock, it may make it even harder in the future for drone operators to fly their devices in major metropolitan areas where breaking news is more likely to occur. First Amendment advocates said a comparable move to impede cameras on the ground would likely spark a public outcry. But the distinct features of federally regulated airspace and legitimate safety concerns — last year a man in California was accused of impeding firefighting efforts with his drone and a few collisions have occurred — add layers of complexity.

While US federal regulations around flying drones have loosened considerably in recent years, commercial operators must still follow "part 107" regulations that include taking a written
test, keeping their drone within their line of sight and prohibitions on flying over 400 feet, flying within five miles of airports, flying at night or over crowds. There is no consensus, however, on what exactly constitutes “over a crowd” or the precise standard for unsafe proximity to aircraft.

In a move welcomed by journalists, the FAA announced earlier this year that the process for receiving waivers to some of these rules would become automated and subsequently less onerous for those seeking to cover breaking news situations. Journalists made use of these waivers this year to cover the aftermath of Hurricane Harvey in Houston. In October 2017, the FAA granted a waiver to CNN that for the first time allowed the flying of drones over crowds, in this case at up to an altitude of 150 feet above ground level. Prior waivers were limited to tethered drones at a lower altitude.

The distinction made by part 107 between “commercial” and “recreational” use of drones and who can receive those waivers, however, risks running up against the contested question of who is defined as press at the expense of citizen journalists—a distinction long viewed by most First Amendment experts as antithetical to the broad protection for freedom of speech and freedom of the press provided by the Constitution. States and municipalities have also looked to set their own drone use legislation, many of which are overly broad and vague, according to Mickey Osterreicher, General Counsel for the National Press Photographers Association (NPPA). “The law is always catching up to technology,” he said in an interview, “and this is a brave new world... we are really all pioneers in this.” But overtime, he said, a consensus will emerge. While the FAA banned drone flights within 400 feet of several national monuments in September 2017, a month later President Trump announced a pilot program to study how to make it easier to fly commercial drones in the US, particularly for business purposes.

Waite said the evolving US regulations are significant globally, as many countries will look to them as an example as they codify their own rules. Current country frameworks vary dramatically—from nonexistent to blanket prohibitions. As with many human rights issues, the US imposition of TFRs and other restrictions provides cover for other countries who may seek to limit press or citizen documentation. In April 2017, for example, Venezuela banned drones in the days leading up to a major anti-government protest.

Beyond TFRs, there may be other technological restrictions looming for drones that would be harder to circumvent or challenge in court. In April, tech news outlets reported that DJI, the Chinese company that is said to hold 70% of the consumer drone market, had quietly imposed a technical no fly zone on their machines over parts of Syria and Iraq. The move, which is programmed based on the GPS location of the drone and known as geofencing, came after it was reported that ISIS had been using DJI drones as weapons. While no one from the company directly addressed the circumstances leading up to the decision, a spokesman told the Los Angeles Times in May that DJI works with “any lawful request from governments” to set up no-fly zones. Ben Kreimer, a journalism technologist and drone expert, said that hackers soon figured out how to override the restriction and have been technically sparring with the company ever since. In 2015, the drone manufacturer imposed a similar geofence around the White House after a hobbyist accidentally crashed a drone onto the building’s grounds.

But while blocking ISIS and protecting the White House may seem like an easy call, Kreimer said the situation presented a “slippery slope” akin to Silicon Valley’s recent fight with the FBI over its desire to bypass device and messaging encryption. The technical fix, unlike a government-issued TFR, automatically affects militants and journalists alike. It is easy to imagine a future scenario where protests are occurring and rather than petition the FAA, law enforcement might prefer to ask a compliant DJI to impose a blanket no fly zone. In October 2017, DJI announced the creation of a new device that would allow authorities to track the location and registration or serial number of any drone within a five kilometer radius. But while authorities may find the Chinese company a willing partner in some aspects, they are clearly suspicious in others. In August, the US army banned all use of DJI drones by its forces over hacking and surveillance fears. For human rights advocates around the world, that vulnerability may become a primary concern.
DJI notwithstanding, surveillance concerns have long been at the core of much of the public’s distrust of drones. Respect for privacy and consideration of ethics and consent questions are relevant for social justice movements as well as State institutions.

Legally, it would seem that the same privacy rules on the ground mostly apply to the air: in a public place there is “no reasonable expectation of privacy,” according to Osterreicher. Private spaces filmed by aerial photography are more complex, but US courts have historically upheld the use of aircrafts over private property at certain altitudes for law enforcement observation purposes. For human rights advocates, there are other ethical concerns to take into account that may have no clear answers. Human rights organizations often strive to follow a principle of “free and informed consent” when including people in their documentation, particularly in imagery. What does consent logistically mean in an era of drones?

Koettl said that Amnesty International is not yet using drones for human rights research but that should it choose to in the future, the organization would have to carefully consider local contexts. Amnesty might decide not to use them, for example, in places like Pakistan or Afghanistan, where the history of armed drone programs could create a certain anxiety for citizens should UAVs appear in the sky.

For some critics, the wider use of drones for violence and surveillance should disqualify them as tools for any human rights work on a philosophical level. But in an upcoming book Choi-Fitzpatrick writes that “the age of democratic surveillance is upon us. By democratic, I hope to signal the shift from the high-cost and top-secret tools used by the powerful to a more accessible set of resources used by everyone else.

Camera-equipped drones do for the open air what hackers have done for the Internet.” Can we imagine a world, Choi-Fitzpatrick writes, when the police body cam has evolved to become a drone that follows the officer and observes him at all times? But where does the border between enhanced accountability and invasive surveillance blur and how many cameras in the sky are too many? The answers are far from clear.

Regardless, the idea of democratized surveillance for all will likely not let human rights organizations who strive to follow a “do no harm philosophy” off the hook for the unintended negative consequences their drone footage might have. Jacob Crawford of the organization WeCopwatch, which advocates for the “nonviolent observation of the police,” is skeptical about the use of drones for the same reason he opposes livestreaming: the footage may be used by law enforcement to identify protestors or even just unknowing bystanders. While these tools can be useful for storytelling and documenting environmental crime, he said in an interview, “they can have devastating consequences for the communities that didn’t ask them to be [in the footage] and weren’t doing anything wrong. But because there is imagery of them in an area at a certain time, people are facing criminal charges.”

Most importantly, he argued, if activists are going to be trained to fly drones, they should also be learning how to do so safely, responsibly and in a way that yields effective evidence (as was done with a guide created by WITNESS in collaboration with WeCopwatch for on-the-ground recording devices at Standing Rock). Social justice movements should not fetishize the tool, he suggested, at the expense of the broader goal. “The video doesn’t do anything by itself,” he said. “It requires an accountability process that works.”
Will Standing Rock prove to be the tipping point for the adoption of drones by social justice movements? Is it likely that, as one news report suggested, social justice movements will use “more drone, rather than phone, footage” going forward? For environmental groups, the appeal is clear. For human rights issues, Koettl thinks that while drones may become ubiquitous above demonstrations, they are less likely to be present to witness abuses like “extrajudicial killings in Cameroon.” Thus as with the introduction of any new technology, the traditional human rights research methodology will continue to be essential. As with any footage, particularly that which is shared on social media, as drone footage becomes more common it will encounter the same challenges regarding verification, contextualization and curation.

From a storytelling perspective, practitioners warn that the impact of those beautiful sweeping aerial shots, previously only accessible to productions that could hire expensive helicopter crews, will be lessened with repetition. In a recent review of Chinese artist Ai Wei Wei’s documentary about the global migration crisis, New York Times critic Manohla Dargis warned that “drone visuals can come off as faddish, gimmicky.” Lakin said that she hopes people “don’t become desensitized to them.” Kreimer is already experimenting with ways to counter “drone fatigue” and innovate with his camera angles, sometimes using his drone to hover merely a few feet off the ground. Echoing a concern that has long plagued social justice photography and documentary, he counseled caution with the seductive appeal of aerial shots. He said that after reviewing drone footage from a 2014 project he had worked on about people who survive off trash in landfills in Nairobi, he realized they had taken a “tragedy and made it look beautiful from above. We had literally made a dump look beautiful,” he said. “Drones make the world look really interesting and beautiful... but we also need the on the ground perspective.”

For some users, traditional cameras may become the least important function for drone documentation purposes. Waite and Koettl both anticipate drones will be the next frontier of data journalism and research, employing mapping, sensor and data and multispectral imaging for projects such as 3d reconstructions of massacres, mapping mass graves and illustrating the effects of climate change over time.

But in the end drones can’t establish facts, tell stories or affect change on their own. Turgeon says he hopes governments and the public will gain greater understanding about the social justice motives of drone operators like himself so they can do their work unimpeded. But ultimately, he said, “It really depends on the [wider] narrative.”

Protesters clashed with law enforcement at the Backwater Bridge in Morton County in November 2016. Photo / Morton County Sheriff’s Department
TIPS FROM THE DRONE OPERATORS OF STANDING ROCK

Have extra SD cards and batteries lined up, particularly when livestreaming in cold temperatures [which drain them especially quickly]. Make sure you get a good angle that gets you the full picture.

BROOKE WAUKAU

In case your drone gets seized, back up your footage immediately and in many places. “Break the rules but not the law.”

MYRON DEWEY

If you are filming a protest keep drones at multiple altitudes to document any possible clashes. “Know the legal ramifications. It probably behooves you to keep an attorney on retainer.”

RHIANNA LAKIN

Fly with common sense…and to the best of your abilities.

DEAN DEDMAN JR.

Spend a lot of time practicing with your drone before you get there…know all the rules and have a plan of how to do it safely.

AARON “SHAWN” TURGEON
DRONE RESOURCES

- Drone Journalism Lab
- New America Foundation and the Open Technology Institute’s Drones and Aerial Observation: New Technologies for Property Rights, Human Rights, and Global Development
- Drones in the Newsroom
- Datanav: How to Navigate Digital Data for Human Rights Research
- Humanitarian UAV Missions: Towards Best Practices
- New America Foundation World of Drones: Flights and Regulations (note that regulations are frequently changing and may not be up to date)
- Storyhunter Guide to Commercial Drone Regulations Around the World (note that regulations are frequently changing and may not be up to date)
- FAA regulations
- FAA regulations summary
- Good Drone Lab
- Amelia Dronehart | A Worldwide Community for Women RC Pilots
- iRevolutions

WITNESS RESOURCES ON FILMING HUMAN RIGHTS ABUSES

- Video as Evidence: Documenting Standing Rock
- Basic Practices: Capturing, Storing and Sharing Video Evidence Verifying Eyewitness Video
- Ethical Guidelines: Using Eyewitness Video in Human Rights Reporting and Advocacy
- Library.witness.org

About the WITNESS Media Lab

This report is the result of the 2017 WITNESS Media Lab Curation Fellowship. The WITNESS Media Lab, a WITNESS program in collaboration with the Google News Lab, is dedicated to unleashing the potential of eyewitness video as a powerful tool to report, monitor, and advocate for human rights. We believe that the next stage of human rights documentation and advocacy will be powered by videos created and shared by eyewitnesses. Our work addresses the challenges of finding, verifying, and contextualizing those videos. In collaboration with peers from the fields of advocacy, technology, and journalism, we develop solutions to ensure that footage taken by average citizens can serve as an effective tool for justice.

About WITNESS

WITNESS makes it possible for anyone, anywhere to use video and technology to protect and defend human rights.

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