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Greece aims long-range sound cannons at migrants across its border

A new generation of audio weapons makes the latest offensive in a decades-long war of sound

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For the past year, Greece's land border with Turkey, bounded by the fast-flowing Evros river, has been a focus for the country's conservative government. Activists describe this heavily militarized area as a communications dead zone. Journalists and NGO workers struggle to access it and refugees trying to cross regularly have their phones confiscated by police. But some videos do escape through the cracks. Including desperate pleas from people stranded on islands in the middle of the river and grainy, seconds-long footage from inside government-run detention centers.

In May, Greek police staged a [press call](https://apnews.com/article/middle-east-europe-migration-government-and-politics-2cec83ae0d8544a719a885adee7d9786/gallery/2c39f336804a4ecbb6c5501b510d7f73) near the border town of Feres to proudly show off their latest technological acquisition. Mounted on a vehicle, it looked like a large, grey tannoy — a little bigger than a megaphone, equipped with dials and colored buttons. Wearing earplugs, a police officer grabbed its handles and moved the device in different directions as it emitted a piercing alarm sound.

“Our task is to prevent migrants from entering the country illegally. We need modern equipment and tools to do that,” [said](https://apnews.com/article/middle-east-europe-migration-technology-health-c23251bec65ba45205a0851fab07e9b6) Police Maj. Dimosthenis Kamargios, head of the region's border guard authority.

The model on show — the LRAD 450XL — is produced by Genasys, a leading U.S. company that has been developing long-range sonic devices, or sound cannons, for three decades. The 450XL is capable of emitting sound levels up to 150 decibels. Equivalent to having a shotgun blasted directly beside your ear, sounds of that volume are capable of causing permanent hearing loss.

Typical Sound / LRAD	Decibel (dB)
 <p data-bbox="620 495 707 517">whisper</p>	<p data-bbox="890 383 959 427">20</p> 
 <p data-bbox="611 730 719 752">motorbike</p>	<p data-bbox="879 595 970 640">100</p> 
 <p data-bbox="568 943 767 965">jet plane taking off</p>	<p data-bbox="879 824 970 869">120</p> 
 <p data-bbox="603 1178 727 1200">artillery fire</p>	<p data-bbox="879 1048 970 1093">150</p> 
 <p data-bbox="600 1435 727 1458">LRAD 450xl</p>	<p data-bbox="879 1294 970 1339">150</p> 
 <p data-bbox="587 1816 735 1839">rocket launch</p>	<p data-bbox="879 1603 970 1648">180</p> 

“The vibrations are simply too intense for the tiny hairs in our ears that capture sound. They kill those little hair cells. And once they’re dead, they don’t come back,” said Marisa Ewing, a sound engineer and hearing health advocate in New York.

In late February 2020, as the world began to batten down its hatches against the coronavirus, thousands of migrants from Iraq, Afghanistan, Syria and elsewhere gathered along the Turkish-Greek border. After years of threatening to do so, President Recep Tayyip Erdogan of Turkey announced that his nation's border with Europe was open, encouraging thousands of people to rush to Evros, believing they would be able to cross, unhindered into European Union territory.

Instead, they were met by Greek forces, who quickly deployed tear gas, stun grenades and water cannons. EU authorities praised Greece, referring to the country as Europe's "shield." Frontex, the European Border and Coast Guard Agency, was deployed to reinforce (<https://www.swp-berlin.org/10.18449/2020C16/>) Greece's land and sea borders. The onset of the pandemic meant that Turkey closed its borders again in mid-March, but it also ushered in a new era, in which the Evros region has become a testing ground for new, anti-migrant technology.

The still relatively new center-right Greek government of Prime Minister Kyriakos Mitsotakis has used the crisis to make a show of strength against refugees. "They want to satisfy their voting public," said Evgenia Kouniaki, a lawyer at Human Rights 360, which monitors the border at Evros. "Now, in Greece, refugees have no rights. It's the darkest period that I've seen as a refugee lawyer."

Migrants were described in the Greek media as "Erdogan's weapon" and the border was likened to a war zone. The Greek state began to buy up stun grenades, chemical grenades and other military devices, installed new steel fences and electronic surveillance systems. Now, migrants are watched by drones, infrared night vision and surveillance airships. They are also targeted with deafening levels of sound.

Sound has been used as a weapon throughout the past century. During the siege of Stalingrad in the early 1940s, Soviet troops broadcast (<https://www.werehemighty.com/articles/listen-to-the-tango-the-red-army-used-to-intimidate-the-nazis-at-stalingrad/>) the Argentine "tango of death" on loudspeakers throughout the night, interspersed with booming German messages describing the area as "a mass grave for Hitler's army." In 1989, the U.S. army attempted to force the opera-loving dictator Manuel Noriega out of hiding in Panama City's Vatican Embassy by blasting non-stop rock music outside his window. The playlist included "I Fought the Law" by The Clash, U2's "All I Want is You", and AC/DC's "You Shook Me All Night Long." At the Vatican's request, the Army stopped after three days. Despite reportedly sleeping soundly through the sonic assault he did give himself up the following week.

In 2016, diplomats working in Havana began reporting mysterious symptoms including brain fog, loss of hearing and balance, and described hearing "intensely loud" buzzing sounds coming from a specific direction. Their testimonies led the U.S. to accuse Cuba of waging "sonic attacks" on its envoys. Last week, two dozen similar cases (<https://www.i24news.tv/en/news/international/1626719542-havana-syndrome>) of the so-called "Havana syndrome" were reported in Vienna, where diplomats are in negotiations over Iran's nuclear program.

Sound is already being used to deter migrants along Europe's borders. At the Hungarian border with Serbia and Croatia, a recorded voice speaks (<https://anthronow.com/feature-preview/the-speaking-fence>) constantly to people trying to cross, loudspeakers instructing them to go away in five languages. "Attention, attention," it says in English. "I'm warning you that you're at the Hungarian border crossing, the property of the Hungarian government. I'm warning you to hold back from committing this crime." The announcement then switches to Farsi, Arabic, Urdu and Serbian.

Unlike regular loudspeakers, LRADs work directionally. They have been described as sound lasers, and can be precisely targeted. Lauren Rosen, 32, has direct experience of them. She was at a June 2020 protest in Detroit demanding justice for George Floyd and an end to police brutality when the wail of an LRAD ripped through the air.

"I could feel vibrations all over my body," she said, describing how people in the crowd began to moan with pain. "I began to feel really disoriented and off balance. I was having a hard time standing, I felt dizzy and fell backwards."

While the LRAD stopped after two minutes, the sound continued to ring in her ears. For days after, she experienced hearing loss and tinnitus, alongside vertigo and nausea. She lost her appetite, and dropped 20 pounds within six weeks. More than a year on, she still experiences intermittent tinnitus. "My hearing doctor said the hearing loss I had was similar to people who had been at war," she said.

0:00

0:35

Lauren Rosen describes being exposed to an LRAD at a protest in Detroit in June 2020. Caution: this recording contains audio that some may find distressing.

LRAD technology was first developed in the early 2000s, as a tool for the U.S. military. Now, such devices are owned by law enforcement agencies across the U.S.

In 2017, in a lawsuit brought by protesters who had sustained hearing damage from LRADs, the New York Police Department argued that the devices could not be considered weapons, because they had not touched anybody. The [city settled \(https://gothamist.com/news/city-settles-lawsuit-protesters-who-accused-nypd-firing-sound-cannon-them\)](https://gothamist.com/news/city-settles-lawsuit-protesters-who-accused-nypd-firing-sound-cannon-them) the case in April, agreeing to pay a total of \$748,000.

Natalie Gruber is the co-founder of Josoor, a cross-border human rights group that works with migrants in Evros. She was shocked to hear that LRADs would be used at the border.

“There’s been a constant militarization of the borders, and some people are diminishing what effect these sound cannons have. It’s not easy to know what effect these devices have when used on hundreds or thousands of people,” she said.

According to Robert Putnam, a spokesman for Genasys, LRADs are not weapons, but communication tools. “I think border agencies and law enforcement agencies are using them to talk to people and have their directions heard and understood,” he said.

When asked about the extremely high-decibel sounds they can produce and the irreversible hearing loss they can cause, Putnam said it was “no different to being at a rock concert.” However, rock concerts generally reach peak levels of 120 decibels — far less than the Evros LRAD’s 150 decibels.

Ironically, the border at Evros has remained quiet since the purchase of the LRADs. Experts believe that the devices have not been used and that, ultimately, their purchase may remain a symbolic one, demonstrating that Greece is willing to repel migrants by every means possible.

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