

To whom it may concern:

My name is Charles “Sid” Heal, and I am a retired Commander with the Los Angeles Sheriff’s Department. I spent 33 years working in law enforcement have remained in the law enforcement community as a consultant and teacher. I am also the serving national chair for strategy development for the National Tactical Officer’s Association and am a past-president of the California Association of Tactical Officers.

During the last third of my career as a sworn officer, I oversaw a special project called the “Technology Exploration Project.” In this capacity, I sought emerging and cutting-edge technologies that may have applications in law enforcement when fully mature. Our goals, in order of priority, were to attain capabilities to (1) gain compliance without requiring lethal force, (2) stop fleeing vehicles, and (3) increase situational awareness and communications to enable prompt, effective, and informed decisions during times of crisis. In this capacity, I have travelled the world, worked with some of the most brilliant scientists of our time, participated in innumerable demonstrations and pilot projects, and helped put into service some of the most innovative devices available for our agency, in particular, and the law enforcement community, in general.

I have known Vahan Simidian for nearly two decades. I first met him at his laboratories when he demonstrated a prototype configuration for the “magnetic acoustic device” technology. This device allows sound to be transmitted with a volume and clarity that I had seen in no other device. I was in uniform that day and was standing about one hundred yards away listening to a commercial recording of a pop band with more clarity than I had ever experienced. When the volume was turned up, the clarity remained and I could actually feel the sound waves pulsing on my body. I remember looking at my shirt to see if it was moving, so profound was the feeling of the sound waves on my body. I also remember that we had several business owners come out from their businesses to find out what was going on, as well as a complaint to the local police department. I was more than surprised because the businesses were all constructed of reinforced concrete walls which seemed designed to provide a quiet workspace. I was so impressed by this demonstration that I called the Director of the Joint Nonlethal Weapons Directorate in Quantico, VA, and related my experience and suggested they provide some scientists to personally experience a demonstration.

During the demonstration, Vahan claimed he could build an array that would produce a clear sound loud enough to be heard by an unaided human ear at a mile or more. Because I thought he was boasting, I challenged him to demonstrate this, and he happily accepted. I then arranged for the use of one of our ranges where I used a map and GPS to measure one statute mile. He used several recordings to demonstrate the clarity, one being a machine gun and another a Frank Sinatra record. At one-quarter mile, I could readily detect the “double-bang” of the projectile leaving the muzzle,¹ as well as the bolt moving, the cartridges being ejected, and even the tingling sound of the cartridges and belt-links falling to the ground. At one-half mile we listened to recordings of country music and inmates working nearby jokingly asked if they could put in music requests. At one mile, we listened to a recording by Frank Sinatra and,

¹ A rifle typically has two reports, one caused by the projectile being launched from the muzzle and the escaping gas and the other from the supersonic shock of the projectile as it breaks the sound barrier.

albeit faint, could hear the lyrics, background music, and other accompaniments. It should be noted that this day was particularly windy, and we were now near a major freeway but could still hear the sounds. It is also noteworthy that we could no longer see the point of origin or any of the people near the transmission site.

On August 29, 2005,² I arranged for a formal demonstration with scientists from the Joint Nonlethal Weapons Directorate, as well as local and national news media. We used a straight road on Edwards Air Force Base where we measured the distance by map, vehicle odometer and GPS. Once again, the device performed splendidly, so much so that one reporter actually recorded the music being played at one statute mile from the transmission site.

As the years have passed, I have worked on a number of configurations for broadcasting sound, both as a hailing device and as a nonlethal force option. It is also noteworthy, that one configuration allowed us to listen as well as transmit sound at extraordinary ranges and with surprising clarity. During one experiment, a car drove between the transmission and receiving points and I listened to the engine, to include hearing the tappets opening and closing the valves.

As might be expected, this device created great excitement. The Los Angeles Sheriff's Department purchased several models and has worked with Vahan and his technicians in determining other configurations. Today, commercial models have become available, to include a large crowd hailing device used by the Los Angeles Sheriff's Department in communicating and directing large public assemblies, including protests, civil disobedience, strikes, and other potentially volatile crowds and mobs.

Among the many configurations, different models include those that are designed to be hand-held, mounted on vests, tripod mounted, pintel-mounted, and vehicle mounted. The configurations affect the effective range and the width of the beam. Other considerations are weight and power.

I am more than happy to discuss my experiences with this device and can be reached at the following:

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Sincerely,
Sid Heal

² Note: This date is imbedded in my memory because it was the day that Hurricane Katrina struck New Orleans. Because Hurricane Katrina dominated the news for weeks and months afterwards, the reports of the magnetic acoustic device were overlooked.