

Grand Central Recording Studios Build A VR Studio



56 speakers and ambisonic mixing to make the best VR audio experiences possible.

Grand Central Recording Studios (GCRS) is a post-production company that have over twenty years of experience working in advertising. This month they've finished renovating a room to make space for GCVRS, a department of GCRS focusing in virtual reality (VR) audio. Steve Lane, VR Sound engineer and Technical Lead at GCVRS, speaks about the renovation, working in the VR sound design space and how he would like to see future changes in sound for head-mounted displays.

After realising there was an interest in installation, rides and VR projects, GCRS joined their clients on a new journey of 3D sound. They quickly realised that their conventional sound set up was isolationist, wherein which Lane had to pass on his headphones from client-to-client on a project for feedback, and that the VR audio software tools didn't enable them to what they wanted. Yet the workflow and creative juices weren't the only problems they encountered; when their sound was given to a client and implemented into a project, it somehow never came out the way they intended.

This is when things started to change. Over the course of three years, GCRS has taken matters into their own hands and built a room that can mix for third order ambisonics with 56 speakers. The sound field reflect where Lane is looking when an image is projected on the screen and is mirrored in the speakers. So if Lane were to look left, the speakers in the room would reflect this. The manner in which they approach 360 film or VR works has changed as well. Not only can they showcase and demo pieces to clients, they also explain the different ways they have to approach sound for 360 degree video and 'true VR'. Both of which have very different ways of preparation and process for sound design. They also implement the audio themselves into a a product as well.

With all the various head-mounted displays (HMDs), software and plugins it's hard to keep on top of everything. Luckily GCVRS have a master suite of tools with a software company through an established relationship. They then export the sound according to the intended platform for the final product.

"Everything has it's own little format. Each one you learn something new", says Lane. Although it's hard to keep track of everything, he believes that this is positive and that things are getting better. The room is also a Dolby Atmos Theatrical licensed suite that can be used for 3D, 11.1, 22.1 and are fully customisable for other projects and use cases.

When asked about which HMDs had the worst audio quality, Lane responded that he wasn't a fan of the Oculus Rift. He prefers the [HTC Vive Deluxe Audio Headstrap](#), but not the headphones finding that it can cut out at certain frequencies and is incredibly difficult to remove as well. Lane recommends that clients have to think about sound when doing installation pieces, especially in crowded and noisy areas where the leakage of audio is huge. He also says that noise cancellation headphones are dangerous as well when it comes to certain frequencies – however all of this is from an audio standpoint rather than usability. He hopes that in future HMDs would be more customisable with various headsets

options for various use cases. Lane says they often mix for iPhone headphones, the most common denominator, because most people do not have access to big expensive headphones.

At the moment Lane believes that videogames are on a different level when it comes to audio; they comprehend it. When it comes to VR experiences that have clients who do not understand gaming, it's a lot more difficult to name examples of where VR sound is used well or to help the creative narrative of the experience. According to Lane, he can count these non-gaming experiences with good VR sound on his hands. VR audio obviously still has a long way to go, but everything is continuously evolving and adapting – including sound.