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Virtual Reality

Creating 360-Degree Content With The Ricoh Theta S, Part 1: Shooting

News By Zack Newman published April 14, 2017

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The world of virtual reality has caught fire, and we're already seeing a second wave (after the release of the Oculus Rift and HTC Vive) in the form of consumer-oriented VR and 360-degree cameras. These advancements have been coming for a while, but things have accelerated.

Fairly recently, for example, more news media companies have been producing content in the medium. Big names like The New York Times, PBS Frontline and The Wall Street Journal have produced VR stories, and the viewing of VR has been significantly democratized by Google Cardboard and, more recently, Google's Daydream platform.

It follows that as VR viewing becomes more commonplace, more people will want to make their own content. This inevitability has spurred a space race in the realms of cameras and editing equipment. There's an increasing number of cameras hitting the market, like Nikon's KeyMission 360 Action Camera and Kodak's Pixpro SP360 4K (not to mention 3D cameras, notably the Vuze and Lucidcam). But how exactly do you make your own VR content?

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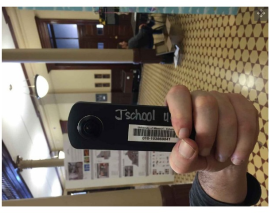

This fledgling field is unique because the rulebook has not been written yet. Best practices have not been established. And the technology itself is still emerging.

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In this multi-part series, we're looking at how to create, edit, and share your own 360-degree content with the Ricoh Theta S. Note that some of the minutiae of the editing procedure varies by camera, but by using the Ricoh Theta S specifically, you'll be able to get a sense of the whole process generally. Below is *Part 1: Shooting*.

Terminology

It's important to start by clarifying some terms, in particular what we mean when we say "virtual reality." There is much debate on this issue, and a full discussion is beyond the scope of this article, but we can still attempt to employ clear language. As the name suggests, "virtual reality" is about creating immersive worlds designed to absorb the viewer and make them feel as though they are inside them.

There are numerous ways to create this effect. You can shoot spherical video that also has depth, and you can actually interact with some VR experiences. I use an "inside-out" approach and a journalistic storytelling style to show spectators what it would be like to be with the central character of the video using spherical (360-degree) video.

You can't interact with what's happening in those videos, but the footage makes you feel as though you are in the scene, which technically may not be considered "virtual reality." To avoid confusion, from now on we'll refer to the work discussed in this article as "360-degree video" instead of "virtual reality" to abide by the technicality--even though many would consider 360-degree video to be virtual reality.

Shooting And Framing Immersive Video

Before I go into the nitty-gritty of what I've learned from working with the Ricoh Theta S in the field, it's important that you understand how wide the chasm is between shooting in 2D and in 360. In 2D, you get to decide what the viewers pay attention to by simply pointing the camera in that direction. There isn't that luxury in 360-degree content, because the viewer has the ability to look in every single direction. This means that the entire shot needs to be as visually appealing as possible everywhere. Thus, what might make a fantastic 2D video story may not do well in 360 degrees.

There needs to be a distinct purpose for why you have chosen to use this sort of video. As more and more people adopt the technology, just having 360-degree video will become a gimmick. Done well, though, the immersive aspect leads to a phenomenon where users can get as close as possible to "walking a mile in someone's shoes." In my experience, I've found that viewers feel more empathy towards the subject of the piece.

A perfect example is "The Gift of Mobility" by StoryUp Studios and The Washington Post. It told the stories of people in Zambia who were forced to crawl on the ground to get where they needed to go. Some are now able to travel using specialized wheelchairs. The story gives viewers an intimate look into the lives of these Zambians.

The point is, the art of storytelling is king, even in 360-degree content.

Image 1 of 2

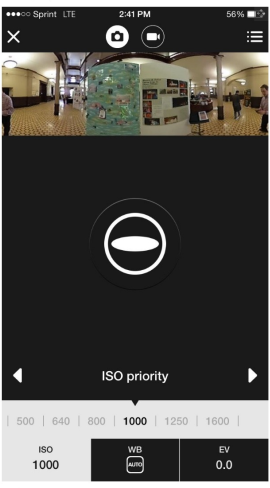
Simplicity And The Ricoh Theta S

It's easier to explain why I prefer the Ricoh Theta S when you know the irksome qualities of other 360-degree cameras I've had the option to use. Another camera that I've had experience with, for example, is a Freedom360 rig that can hold six GoPro cameras pointed in different directions. You have to turn all six cameras on in order, then press the "record" button on each. You have to make to sure all are recording and that you haven't skipped a camera by accident. One missed camera or setting will disturb the entire process; it can make the sync, and thus the stitch, impossible. The subject of the shot also needs to be at least an arm's length away from the camera, otherwise the stitching will distort it.

Editing the footage shot on the six-camera GoPro contraption is even more arduous than shooting with it. It takes hours just to get the footage off of the SD cards and into the computer, because each camera's SD card has to be inserted into the computer via a microSD card reader. You then have to use multiple software tools, such as Kolor, to stitch and edit it.

However, there are a few benefits of using this type of camera. It has solid focal length, which means that it can shoot objects well when they are far away. Also, it does better in low/high light than the Theta.

The Freedom360 may be a preferable tool were I making movies and had more time, but the Theta is better for the type of work I'm doing. The Theta S has two fish-eye lenses that are brought together with a single stitch, and you can monitor the feed and take videos or photos remotely. You can also use Photo Mode to get a preview and then switch over to Video Mode to record.



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ISO priority

500 | 640 | 800 | 1000 | 1250 | 1600

ISO 1000
WB AUTO
EV 0.0

The device emits a private Wi-Fi signal that can be connected to your phone. This is done through an app that's available for both iOS and Android. Content can be transferred onto phones through the app so you can see how it looks. However, the size of the files get large quickly. You can also shoot photos and video without going into the application. A button with the "camera" and "picture" icons above it switches the modes of the camera. The button on one side of the Theta S will either begin recording (indicated by a flashing red light) or will beep (alerting you that a picture was taken).

A common microSD port allows you to connect to a computer to edit. Most importantly, there is a relatively simple editing process, with only one conversion, until you can work with it using nonlinear editing software such as Adobe Premiere. (We'll get more into the weeds of editing in a later section.) The Theta S is also much smaller and lighter than a rig like the Freedom360; it can easily fit into a pants pocket.

The major downside of the Theta S is that it performs horrendously in low or high light, or if the subject is too far from the camera. In order for faces to be completely visible, the subject's foot needs to be a few inches from the tripod. (This varies from other cameras, such as the Freedom360.) You have to be careful, though, because warping occurs if you get *too* close.

It's also a fragile camera; it's far too easy to scratch the lenses unless it's in its case.

Overshooting

One major issue that you'll have to deal with in 360-degree content is the problem of overshooting.

The repercussions of overshooting a 360-degree piece is much greater than in 2D, and even if you're just casually shooting, you would benefit from having in mind something like a storyboard.

In 360-degree video, overshooting can mean a fiery demise. I'll explain this using a baseball analogy: With 2D video, you can start batting as soon as you put your memory card into the slot. With VR, overshooting means you can't even find a bat. You have to buy one from a sporting goods store for every single swing. It's exhausting.

The solution is discipline. Stick to what you planned to shoot before you hit record. Start with a pretty clear idea about the potential angles and mounts that you want to use. Resist the temptation to shoot more than that unless you have a comprehensive solution for expediting the footage offloading process.

Avoid overshooting by limiting yourself to test shots and then deleting them before importing the footage. Otherwise, you end up spending hours taking care of footage you don't need. Use the Ricoh Theta's "preview" function to shoot only what you think you're going to need. Also, don't shoot the same thing twice. There should be enough action in a 360-degree shot to keep a viewer appeased for the 30 seconds it's on the screen. If there are any faulty takes, delete them while you still remember which one is the incorrect version.

At the end of the day, though, you need to feel comfortable that you have the footage necessary to make a complete story. This gray area will become clearer as you work in the medium more often.

Then, you will need to transcribe. Write down quotes from the interviews and the timestamps the instances occur. The log will be helpful in the editing process to find the best shots while you're putting the story together.

In The Field

Although you can just hold the Theta S while you shoot, there are better ways to get your shots. I prefer to use a tripod or light stand whenever possible to help give me a steadier shot, but I've had success with simply holding the camera over my head. (Just remember that you may be visible if your audience looks down.) If the subject of your project is moving, feel free to move with them. In a pinch, you can use a selfie stick--this has the same effect as simply holding the Theta S, but you get better height with a selfie stick. It's also handy if you're in an environment where you need to get more interesting angles but can't--or don't want to--set the camera on a tripod and walk away.

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It's a good idea to shoot in 45-second intervals. You'll probably want to use only 20-30 seconds, but if you record for 45 seconds at a time, there's room to make mistakes (such as if you lean towards/away from the camera when you begin/end recording).

The Theta allows you to record about 45 minutes of video before you need to transfer the files off the camera and onto a computer, but beware of your storage; shooting an entire interview with the Theta, for example, would create an enormous file.

When I spot something that I want to capture, I set my camera down, look at the preview setting to make sure the height or angle is where I want it, and then I walk away or hide.

Yes, hide during the shot, if you don't want to be part of it. If you decide to do this, be aware of the risks facing the fragile camera and find a way to protect it. The best method for getting good footage is to get out of its viewing area (5-10 feet). However, this is a nerve-wracking practice. Every time I leave the Theta's side to record, I'm filled with anxiety. I always worry about someone knocking it over.

I have seen one case on the market that works pretty well. However, in the test videos I shot with the Theta in this case, the upper echelon of the image was stretched vertically. However, it isn't that noticeable unless you're getting a tight shot, like footage of someone's face.

There are other shooting particulars to keep in mind even after you've decided on the quandaries above. For the Ricoh Theta S, connect the camera to your phone with an app. It allows you to preview what you're shooting and record remotely. When you hit record, a timer will begin. Give it a few seconds to register a click, and don't tap it again too quickly after the initial touch. The Theta S can lag sometimes, and doing a double-tap can accidentally stop the recording prematurely.

Know which part of the camera is the front. The front of the Ricoh Theta is the side without the button. Even though the viewer will be able to explore the environment in 360-degrees, the front of the camera is where the recorded footage will begin playing when anyone watches it. (This can be manipulated in post-production, but it's time-consuming.)

Immersive video takes more planning than 2D video because there are so many more cogs in motion. If you're shooting with a partner or two, discuss who moves the camera(s). It hurts the operation if too many people get involved, and you lose valuable footage because you're in the shot. You may want an action plan of who will move the certain camera to a certain spot and then get the hell out.

If you're looking to capture audio, it's best to use an external device (which could simply be your smartphone, or a pocket digital recorder); the audio quality you'll get from the Theta's built-in mic is poor. If you have an interview subject, one trick is to record the interview with an audio device and then get a 360-degree video portrait of the interviewee. You can use the two together to allow the subject to introduce themselves and their role in the story.

Any subjects should be so close to the Ricoh Theta S that their foot should be able to touch the tripod. This is because it is difficult to see the subject's face if they any are farther away.

These rules change based on the camera, though. For instance, the six-camera GoPro has too many stitch lines for this method to be effective. Being too close distorts the shot. Use a variety of heights to get different angles. I find that waist level pays off more often than not, and remember that monitoring with your phone can give you the best idea of what you're getting.

Stay tuned for *Part 2: Production And Editing.*

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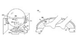

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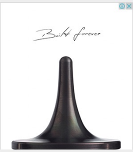Advertisement