Best's Insurance Law Podcast

Effective Use of Visualizations in Claims Investigations - Episode #179

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John Czuba: Welcome to "Best's Insurance Law Podcast," the broadcast about timely and important legal issues affecting the insurance industry. I'm John Czuba, Managing Editor of *Best's Insurance Professional Resources.*

We're pleased to have with us today Steve Rundell from forensic engineering scientific and visualization services provider, Explico Engineering Company, headquartered in Detroit, Michigan. Steve, thank you so much for joining us today.

Steve Rundell: Thanks for having me, John.

John: Today's podcast discussion is the effective use and admission of visualizations, both at trial and for settlement talks. Steve, first off, can you give our listeners a breakdown of who you are and what your background is?

Steve: Yes, absolutely. My technical area of expertise is in forensic biomechanics, and I also do accident reconstruction. Those are the main areas of expertise that I provide services for. Briefly, my education started with bachelor's in science and mechanical engineering from Michigan State.

I stayed there, I got my master's in engineering as well, and then went to Drexel University in Philadelphia to get my PhD in biomedical engineering. Since 2005, I've been investigating accidents, performing analyses, presenting those findings in court, working primarily for the legal industry, investigating accidents.

Recently, I'd say over the past maybe two years, I started really getting into the, I guess, what I'll call the forensic visualization side of things and helping my clients either for my cases or for my colleagues' cases develop compelling visualizations, primarily for the use at trial, but also for settlement talks, mediation, and things like that.

John: Steve, can you explain to our audience what you mean by forensic visualization in the context of accident and claims investigation?

Steve: Sure. I think it's a pretty broad term. It can mean simple, basic 2D diagrams, basic slide presentations, and sometimes, those can be very compelling. I guess I think of it as anything that can visually help your trier effect.

Whether it be a judge or a jury, a mediator, whoever, understand the issues in a case. While there are very simple, 2D versions, I'm primarily going to help educate your audience today on the more complex, 3D visualizations. Typically, I think this is a really important thing to understand, there's really two types of 3D visualizations.

The one that we're probably all very familiar with are animations. Then probably the less common is simulations. The key difference there is that an animation does not have to be based on physics, as opposed to a simulation, which is based on physics. It's just an important designation to know, I think, for your audience. Whether they're trying to get a visualization made, or they're trying to vet the quality of a visualization, to understand that it could be an animation, which means it could show literally anything, or whether it's a simulation, and actually has some basis in physics.

John: Steve, can you explain the process of creating these kinds of visualizations?

Steve: Sure. I guess I think it helps to break it down into a multi step process. It's going to be a pretty long winded answer to your question, but I think step one has to be to know as early as possible if you're going to want a visualization.

I know that's difficult, but if you understand that early on, then you can start to create the necessary foundation for your visualization early on. That really reduces the risks that it gets excluded by some motion later on, after you've spent a bunch of money trying to get it made.

Step two is engage the appropriate experts to collect all that critical data and information. In my experience, it typically starts by gauging whether it's an engineering or a scientific expert, the person that's actually going to figure out for you what happened in this case.

That data collection starts early. That evidence preservation starts early. In my field, we use laser scanners, for example, to capture 3D geometry. We use drones to take aerial photographs and stitch those together to, again, capture where things are at certain times.

There's a lot of different tools. Even just basic photography and taking video can help make sure that all of that evidence is preserved, so when you do go to the next step, you know where things were, and you have basis, and you have foundation.

It really helps with admissibility. It doesn't necessarily mean that early on that you're building a visualization, but you're getting everything that you need in advance. Then step three is to engage a visualization service provider, a forensic animation service provider.

Those are some key terms that you might find when searching. Often, but not always, that will be included in the services provided by your technical expert. If you hire someone like me, an engineering expert, to reconstruct an accident, reconstruct the injuries, figure out what happened in a case, they in house can create the visualizations.

That's not always the case. Sometimes, you'll need to get a separate third party involved. I would suggest to start with your expert and ask them who do they work with, because that's really going to be the line of communication that has to be solid between the technical scientific side and the visualization or the animation side, so that they're talking to each other.

With that said, I'll give a little bit of a warning. You can directly contract with these forensic animation service providers without a technical expert, but I warn against doing that, because now, you're creating pure animations.

Animators and artists are creating those without the necessary technical or scientific background to make them admissible. That's, to me, what I've seen when I've gone up against those, those are very easy to pick apart, to refute, and to often get excluded. That's the three step process that I recommend. Know you want it, engage the appropriate technical expert to collect the data and figure out what happened, and then finally, get the right visualization service provider involved to pull all that scientific technical data and information together into a compelling animation or some kind of visualization.

John: Steve, what should our listeners do if they're given a compelling visualization by the opposing side, but they question the accuracy?

Steve: That's a good question, and that is something that we deal with all the time. Your first step in that has to be to get the right expert involved. Really, you need two experts, or one with two areas of expertise. If you're given by the other side some sort of compelling animation or visualization, you need to first talk to your technical expert to determine if this is even accurate with what's happening in this case. They should be able to help you with that.

The other side of expertise that you need to consult with is visualization expertise, so someone who actually can help you navigate the creation of a subpoena to get...Whether it's the creation of a subpoena, formulating questions for a deposition, so that you can actually get the source material that built this visualization. This is something that I can't strongly recommend enough to find the appropriate expert, whether it's someone like me or someone that you've worked with in the past, to know what to ask for.

The reason it's so challenging is there are so many different pieces of software, so many different versions of that software, so many plugins that the number of file extensions and things that you have to ask for, it's a lot. You really need to educate yourself, or else during that deposition or filing the subpoena, the expert may claim, "Well, I don't have any of that stuff, because I hired a third party, and they have all that." Then you have to subpoena that third party.

You really, really need to get to that source material, because then a combination of your visualization expert, who will have the appropriate software, open those files, can work with your technical expert to pinpoint the areas that may or may not be accurate for either filing your own motion to exclude it, or asking more questions, or creating your own visualization that cleans up these areas that you have found to be inaccurate. That's, again, just to recap, it's getting the right experts, getting someone with actual visualization expertise involved, so you can walk the walk and talk the talk when trying to subpoena and get the source material.

John: With the challenges today and the prevalence of remote testimony, how are you helping your clients utilize visualizations?

Steve: Since the onset of COVID, Zoom, Teams, and these different teleconference or video conferencing tools have become pretty prevalent. I've used them a lot to present in hearings, and I'm hearing more and more people using them during trials.

Whether it's remote testimony or not, I think it's always key to begin with the end in mind. If you know a trial is going to be a Zoom trial, and everyone's not going to be in person, or at least some people aren't going to be in person. Maybe the jury will be there, but your witness won't be there, and they'll be presenting over Zoom. Know that that is the medium of which you are going to have to present your visualizations.

If you know that you're going to be presenting over Zoom, it might not be the best idea to spend a bunch of money on a really nice animation that's not going to play back in any kind of fluid, smooth way over whatever Internet connection you're going to be relying upon in a courtroom.

If you know that that's the case, maybe scrap the animation and do what we sometimes call a poor man's animation, which is more like a storyboard, a series of stills, and talking your way through it. I guess that's one key point, is that in this remote world, know the medium of which you are going to be able to present to your jury.

I think knowing the ability of your expert and your witnesses, basically your conduit to present these visualizations, knowing what their capabilities are, I think these should be questions that you ask your technical experts early on.

How do you present testimony remotely? What is your audio/video setup? What do you recommend in terms of software to make sure we can play these animations or demonstrate these visualizations? They should be able to tell you, "I have a green screen. I have this camera."

They should be equipped and ready to give remote testimony in as compelling a way as possible, and in as engaging way as possible. Those are questions I would include asking, given the current times. Then finally, and again, I think this is true whether you're giving remote testimony, or whether you're giving actual, live testimony make sure to have backups.

Be redundant, and have backups, which is obviously a redundant statement in and of itself. I can't tell you the number of times I've been in a courtroom, and the technology just involves a TV hooked up to my computer, and the HDMI cable has gone bad.

That's why I carry six or seven HDMI cables with me at all times, just knowing that that seems to always happen at the time of trial. It's Murphy's law. If something can happen, it will happen. Given the increased amount of technology that we're going to have to use to make these remote trials work. Every layer of technology adds another layer of a potential issue and problem.

The only way I've found to really protect yourself from that is to be redundant. If you have the animation, also have the poor man's animation as a series of stills. Then also, print it out on a series of courtboards. That way, no matter what goes wrong, you're prepared to have something in a pinch. That's my best advice on navigating remote trials and mediations and settlement talks with visualizations.

John: Steve, in your opinion, what is the next big thing with respect to courtroom visualizations?

Steve: I think that there's two things. One is what I will call interactive visualizations. Two, I think, is related to that, and people have probably heard these acronyms, and I'll describe them, but VR, XR, and AR.

Let me first talk about interactive visualizations. What I mean by that is, instead of a traditional linear animation that shows the jury something from point A to point B, you can create something more interactive, so that during a jury presentation, during closing arguments, during opening arguments, you can navigate a 3D environment interactively.

You can move the jury around a scene and say, however you want to present the case, "This person was standing here. This person was standing there," and give them those different first eye perspectives in the moment, so it feels more engaging.

It's more of a presentation of the case, an interactive presentation, rather than just a linear progression through the facts. Interactive visualizations, I think, are going to become more and more popular as more and more people are using what's called real time 3D rendering.

To be able to render different 3D views on the fly, instead of having to go onto a computer, render it out, and only be able to play one view. As that technology advances, I think you'll see more and more interactive visualizations for attorneys that are more tech savvy and are comfortable with using that and presenting in that mode.

Somewhat related to that, that real time rendering, that ability to render 3D imagery on the fly, is what makes VR, XR, and AR possible. VR, XR, and AR, those are acronyms. They stand for, they're virtual reality, mixed reality, or augmented reality.

If you're not familiar, it basically involves putting a headset on. Essentially, you can think of them as goggles, or it covers your eyes completely. Once you put it on, through the optics and the lenses, you are in a new 3D environment. That is virtual reality. You put the headset on, you're given a pair of hand controllers, so you can see your hands in 3D space, and now, you are wherever the developer of the program that's running on the headset wants you to be. Whether that's a crime scene, an accident scene, and people can explore virtual places.

Augmented reality, so the AR, is similar to that, but it mixes elements of your actual environment with 3D elements. It's typically a pair of glasses that you would wear that projects images on top of your field of view. Where you would normally be looking at an empty table, the table can now have objects on it, and the objects are generated through real time 3D rendering. Then the mixed reality is similar to that augmented reality.

This is the one that I'm most excited about, and I think will be the first to really hit courtrooms. At Explico, we just committed to purchasing a headset that has cameras on the front. It goes on, it completely covers your entire field of view.

You're looking through lenses, but with the cameras that are on the front, you're still seeing the room around you. From a juror's perspective, you can put this on, and it's not as jarring. They're still looking at the room around them.

Then, from there, you can paint in different elements. I guess why I think it's going to be probably the first technology of this type that goes into a courtroom is you can, in theory, put the headset on and have an empty table, and then on that table, slowly build in a 3D rendered, interactive scale model of an accident site, or whatever the case may involve.

Whether it's a traffic accident, an explosion at a refinery, you can build it all up on this table and walk a jury through it in 3D, but it's not as jarring. You're not putting them in the car. You're not worried about motion sickness, because they're still seeing their environment around them.

A tabletop, scale model of the entire accident, which would normally cost fortunes to actually build, is much more affordable, and more compelling, because you can make it interactive. You can make it moving. You can walk them through it. You can have labels that they can touch.

They can interact with it with their actual hands, because the headset recognizes their hands.

I think that's going to be the next big thing. Again, that could probably be the topic of a whole episode, but that technology seems to be, it's gotten over that point where it's not just a matter of if, it's a matter of when. Just like animations in the courtroom in the '90s emerged and became very popular, and became very standard, I think that it'll eventually become the same with virtual reality, mixed reality, and augmented reality.

John: Steve, thanks so much for joining us today.

Steve: You're welcome.

John: That was Steve Rundell, expert from Explico Engineering, which is headquartered in Detroit, Michigan, and special thanks to today's producer, Frank Vowinkel. Thank you all for joining us for Best's Insurance Law Podcast.

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I'm John Czuba, and now this message.

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