16-Foot Scale Model Called Key Tool by Jury

Incident scene model helped visualize complicated series of events for judge and jury; plaintiff receives favorable result

Attorneys William Jungbauer and Don Aldrich of Yaeger, Jungbauer, Barczak, PLC had an injured client, an incident that nobody witnessed and a case going to trial. Using an HO scale model of the incident scene created by Wolf Technical Services (WOLF), Jungbauer, Aldrich and their client won a favorable outcome after a nine-day trial. “To see all of the elements involved at actual size,” according to Aldrich, “you'd have to be in a helicopter. That model was absolutely the right tool. It literally took over the whole trial.”

The Case

At about 11:30 p.m., a Dakota, Minnesota & Eastern train dropped off several cars and pulled forward. A railroad employee, Mr. Steven Tennant, noticed that a load of lumber on one of the forward cars had shifted and he began repositioning the lumber. As Mr. Tennant adjusted the lumber, gravity caused the disengaged cars to creep forward on the track and collide with the stationary train. The resulting impact caused a significant injury to Mr. Tennant's right hand.

The Evidence - Video or Model?

With no witnesses and the number of contributing factors that led to Mr. Tennant's injury, Aldrich knew he had a tough case to present. After a site inspection of the incident scene, Aldrich and his team still weren't exactly sure how to present their case. "I couldn't even convince the lawyers in my own firm how this incident took place. So we contacted WOLF to create a video, which I felt was the best approach.”

Joe Hubert, a member of Wolf Technical's Demonstrative Evidence Group based in Indianapolis, Indiana, demonstrates how the sections of the 16 foot scale model connect. The model was a critical trial tool designed, built and delivered in half the time normally allotted. The model was created for Yaeger, Jungbauer, Barzcek, PLC of Minneapolis, Minnesota.

Reviewing the conclusions determined by the reconstructionist in the case, the demonstrative evidence team at Wolf Technical Services suggested a scale model of the train yard, with model train cars moved by programmable controllers that would duplicate the actual train's paths and motions. This would assist the jurors' understanding of the large rail yard's layout, and the sequence of events leading to the plaintiff's injury. It took some convincing, but Aldrich finally agreed.

HO scale (1:87 inches) was chosen as the best way to keep the size of the model reasonably small while maintaining the ability to accurately program multiple sets of cars to operate at scale-accurate speed. Even at HO scale, the completed model was 16 feet long.

Taking over the courtroom

Aldrich knew the model had to be assembled at some point during the trial. Not knowing when that would be, and not wanting to disrupt the proceedings once they began, he approached the judge and was given clearance to set up the model before starting the trial. The only area in the courtroom large enough for a 16-foot model was directly in front of the judge's bench. Once it was built it stayed in place. It became the focal point of the trial. “When the judge re-entered the courtroom and saw the model, he was a little surprised,”

> ***“The model literally took over the whole trial…everybody was using it. The defense used it as much as we did.***
>
> ***- Don Aldrich, Attorney***

Aldrich noted, "but after studying it, he thought it was the coolest thing ever. And naturally, the defense objected when they first saw it. But by the end of the trial everybody was using it. The defense used it as much as we did. They even used it in their opening argument. It kind of became gospel… you just didn't testify against the model.”

continued from other side

The juror's reactions

The jurors were also fascinated with the model. They couldn't wait to see it demonstrated. When the time came and with the judge's agreement, Aldrich invited them out of the jury box to get a better view. “It was unbelievable. Here we were shoulder-to-shoulder with the jurors. It was very intimate. You just don't see that very often.” At the trial's conclusion, the jury ruled in favor of the plaintiff resulting in a ground-breaking award. Post trial interviews indicated that the jurors thought the model was an excellent tool.

The model's effectiveness ó arriving at the truth

While the outcome of the trial was favorable to the plaintiff, Aldrich was especially pleased about the model's effectiveness in delivering a truthful outcome. According to Aldrich, “The model was absolutely the right tool. No other tool would have been as effective at demonstrating a scene that large, where all the moving parts were in relation to each other. It allowed both sides to demonstrate the incident in a way the jury could understand it, allowing us to arrive at the truth in an incident nobody saw."

Creating the model base

One of the first critical decisions made in developing the model was using a high resolution aerial photograph as the base. WOLF client Don Aldrich wasn't excited about the idea, originally. “To me, it seemed like just another expense. But it turned out to be another great idea from Wolf. Possibly the key to making the model the success it was.”

Once the photography was complete and the base image was in place, WOLF's Demonstrative Evidence team was able to start laying the track, adding scenery, adding cars and custom-programming the electronics to make the railcars move as they did, according to the reconstructionist.

The process

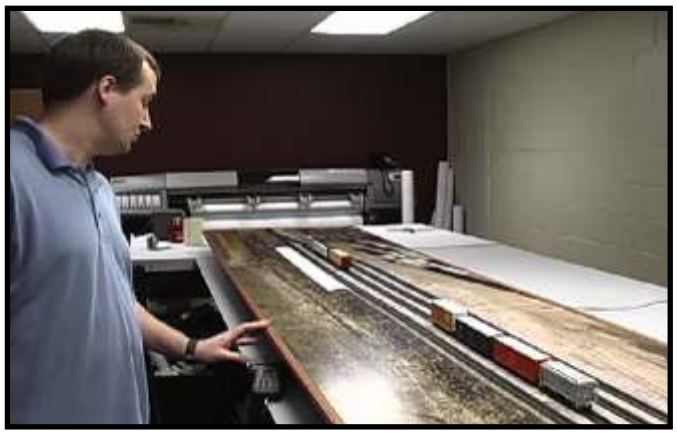
The model was a collaborative effort between WOLF's graphic artists, technicians and CAD experts, an electrical engineer, outside help with the aerial photography, client input and more. With a three-week deadline, Wolf Technical Services based in Indianapolis and the attorneys located in Minneapolis, effective communications and tight production schedules were critical. To facilitate the process WOLF provided digital photos for feedback and approvals as the model started to take shape.

In addition to the pressure of the deadline it was crucial that no detail be left out. Mistakes were simply out of the question. “With demonstrative evidence,” says Demonstrative Evidence Group Manager John Devers, “we have to be obsessive about details. All it takes is one expert finding one fault and you lose all credibility.”

The devil is in the details

One detail that was particularly challenging was programming multiple train sections to move at scale-accurate speeds. It started with reprogramming an off-the-shelf controller and switching out the power supply. The train engine also had to be reprogrammed to complete the process.

Finally, the model needed a foolproof method of assembly by the client. The model base was divided into four sections which were numbered. Written instructions included everything from basic set up to details such as cleaning the tracks to ensure the train cars operated at the correct speed. Photographs and video of the assembly were also provided. To preserve the model during shipping a custom crate was built to store all of the materials necessary to build the model.



Joe Hubert demonstrates how the trains move on the 16 foot scale model. Other members of the Wolf Demonstrative Evidence Group include Manager John Devers, Joe Weber and Tim Maher.

A rewarding conclusion

The team at WOLF has built several models. In some cases simply forwarding the progress photos to opposing council was enough to encourage talk of a settlement. But in this case the defense wouldn't settle. When the model went to trial, it not only held up in court, it held the attention of the court for nine days. To Devers it was particularly rewarding. “We always send demonstrative evidence out feeling confident in the technical aspects, but you never know how a courtroom situation will play out. So when we got the call about a favorable verdict, we were ecstatic.”

SCALE MODEL FACTS:

- HO scale (1 inch = 87 “actual” inches)
- 16 feet long x 30 inches wide
- Four sections, bolted together
- Base graphics created using high resolution aerial photo
- Customized electronic controls for scale-accurate speeds
- Assembly instructions & video included
- 35 pounds total weight
- Custom shipping box included
- Total cost: $11,000.00

Based in Indianapolis, Indiana, Wolf Technical Services offers a full range of forensic and investigative services, demonstrative evidence, and expert testimony for clients throughout North America. Our team has served the needs of thousands of plaintiff and defense clients professionally and ethically since 1977.