

ACCIDENT RECONSTRUCTION

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On America's streets and highways, traffic accidents are commonplace, everyday events. In 1986, according to the National Safety Council, there were 17.7 million traffic accidents, resulting in 48,300 fatalities, 1.8 million injuries, and \$21.2 billion in property damage.¹ Though commonplace, many traffic accidents occur when there are no eyewitnesses. In such cases, particularly where the parties to an automobile accident are killed, determining which party was at fault can be an extremely difficult task. Over the the past several years, attorneys representing plaintiffs and defendants in lawsuits stemming from traffic accidents have turned in increasing numbers to accident reconstruction (AR) specialists to help determine liability.

Accident reconstructionists, drawing upon a wide range of scientific disciplines and utilizing state-of-the art computer technology, can recreate the events and conditions immediately preceding, during, and after an automobile accident. AR specialists often serve as expert witnesses at trial, offering their opinions on what happened in a given accident, why it happened, and which party was at fault. Under certain circumstances, particularly where complicated automobile accidents prove difficult to explain through verbal descriptions or diagrams, judges will allow juries to view films, videotapes, or computerized simulations of reconstructed accidents. Judges will admit an accident reconstruction video only if it has been prepared under conditions substantially similar to those existing at the time of the accident.² When such evidence is admitted at trial, it can have a dramatic and often decisive impact on a jury.

Accident reconstruction, however, does have its limitations. Attorneys should not expect miracles, particularly where the conditions surrounding an automobile accident render reconstruction impractical or impossible. But it is important to keep in mind that an AR specialist can help an attorney formulate both offensive and defensive strategies for trial. If an AR specialist determines that the opposing party caused an accident, an attorney can offer the AR's opinion at trial following proper foundation testimony. If an accident reconstructionist determines that the opposing party has a better case, the attorney can learn about the weaknesses in his client's claim or defense and anticipate attacks by the opposing party.

¹ Bates, *Accident Reconstruction*, DEF. COUNS. J., Oct. 1988, at 437.

² J. BUCHANAN, *YES, BUT CAN YOU GET IT IN?* (1987).

Accident reconstruction is a complex science requiring expertise in a variety of fields, including math, physics, engineering, and computer science. Many AR specialists have advanced degrees in these fields, but others have developed their expertise through police work. In the past several years, computers have played an increasingly prominent role in accident reconstruction. Yau Wu, a physicist and founder of Dynamic Analysis Corp. in Concord, Massachusetts, has developed a computer program called IMPACT (Improved Mathematical Predictions of Automobile Collision and Trajectory) for use in accident reconstruction. Using data on vehicle weights, passenger weights, weather conditions and other factors, IMPACT determines the speed of the vehicles and the angle of impact in a given accident.³ The program, according to Wu, has an error rate of 5%.⁴

ACCIDENT RECONSTRUCTION SCENARIOS

Evidence generated by AR specialists has helped to turn the tide in a wide range of traffic accident cases. The following is a summary of some key cases in which accident reconstruction has played a decisive role:

* In 1982, former U.S. Olympic hockey team goalie Jim Craig was charged with vehicular homicide following an auto collision. Prosecutors alleged that Craig was driving on the wrong side of the road while going over seventy miles per hour prior to the collision. Utilizing IMPACT, noted above, AR specialist Yau Wu determined that Craig was traveling at forty miles per hour and took precautions to prevent the accident. The charge was defeated.⁵

* A 17-year-old was charged with manslaughter after his car hit a concrete wall. An AR specialist determined that the vehicle spun out of control when a wheel made contact with an exposed electric utility box on the road. The accident reconstructionist also determined, based on passenger weights and personal injuries caused by the accident, that the defendant was not driving the vehicle. The 17-year-old was acquitted of manslaughter, but convicted on a lesser charge.⁶

* A truck driver was cited for reckless driving following a five truck accident on an interstate highway. The right lane of the highway had been closed due to construction. The

³ Ballard, *The computer as expert witness*, CAL. LAW., Aug. 1985, at 26.

⁴ *Id.*

⁵ Ballard, *supra*.

⁶ *Id.*

accident occurred near the approach to the lane closure. An AR specialist determined that a contractor had failed to provide appropriate warning signs indicating the closed lane ahead. The truck driver was thus unable to stop in time to prevent a collision with vehicles which had slowed down near the approach to the closed lane. The accident reconstructionist succeeded in establishing that the truck driver had not proximately caused the accident.⁷

* A defendant was charged with driving on the wrong side of the road based on a determination by an accident investigator that a gouge mark represented the point of impact of the vehicles. An AR expert, using scientific theories of motion and velocity, established that the gouge mark was located on the opposite side of the road from the point of impact. This established that the defendant was in fact driving on the correct side of the road at the time of the accident.⁸

* A truck driver attempted to make a left turn off a two lane road onto a connecting side road. The plaintiff-driver, proceeding in the opposite direction in a passenger car, struck the truck while it was making the left turn. The plaintiff was seriously injured and brought suit alleging that the truck driver had five or six seconds in which to see the plaintiff's vehicle as it was approaching from the opposite direction and could have avoided the accident. The operator of the truck claimed that a crest in the road prevented him from seeing the plaintiff's vehicle until it was less than a second away from the point at which he began to make the left turn.

An accident reconstruction expert was brought in by plaintiff's counsel in an effort to counter defendant's claim that the crest in the road obstructed his view of plaintiff's vehicle. The AR expert examined the police accident report, accident photographs, and highway construction plans. The AR specialist then prepared a videotape in which the camera was placed at the vantage point of the truck driver looking ahead at the start of his turn. The photographs were used to estimate the positioning of the truck immediately preceding the point of impact. The accident reconstructionist then filmed a vehicle -- of the same height as plaintiff's car -- proceeding in the opposite direction over the crest of the hill. A digital clock, superimposed on the film, showed that about five seconds elapsed between the time when the vehicle first became visible and then passed out of view.

At trial, the judge allowed the videotape to be shown to the jury. Over defense counsel's objections, the accident reconstructionist then offered his opinion that the defendant began his turn when the plaintiff's vehicle was 150 feet away, or two seconds' travel time from the point of impact.

⁷ Bates, *supra* note 1 at 438.

⁸ *Id.*

The plaintiff had about a second and a half to react and was unable to brake in time to avoid hitting the truck. The jury subsequently determined that the defendant was the negligent party.⁹

RECOMMENDED REFERENCES

- Badger, *Accident Reconstruction*, 94 *CASE & COMMENT* 4 (July-August 1989).
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- N. GOLDBERG, R. SCOTT, and H. BERGER, *ADVOCACY AND ACCIDENT RECONSTRUCTION IN THE DEFENSE OF A COMPLEX MOTOR VEHICLE ACCIDENT CASE*, Practising Law Institute (April 3, 1987).
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⁹ L. FINZ, *ACCIDENT RECONSTRUCTION: A VERY SPECIAL ART* (1987).