

# CRITICAL ISSUES IN RECONSTRUCTING ATV, SNOWMOBILE

By Nathan Bjerke and Seth Bayer, P.E.

The Minnesota Department of Natural Resources reports that since 2003, snowmobile crashes have caused more than 500 injuries and 81 deaths; and ATV crashes have caused more than 1,000 injuries and 86 deaths.<sup>1</sup> Without early and careful investigation of these crashes, evidence will be missed and reconstructions will be incomplete.

Reconstruction clues in these cases are often more subtle than in car crashes: a broken branch, a track made in the snow or mud. And we often don't have the benefit of a police report. As the amount of objective physical evidence decreases, the likelihood for variability between the parties' reconstructions increases.

This article – written by a reconstruction expert and a lawyer – discusses how the reconstruction expert and lawyer must work together in off-road vehicle crashes. It is based on the premise that attorneys cannot simply hire experts to form opinions and let the jury sort out which side's expert is right. Rather, lawyers must study the science behind the reconstructions, trade in our wingtips for work boots; get out from behind our desks to inspect vehicles and scenes. In short, our experts must work with us, not for us. If the lawyer doesn't get involved, she will miss critical evidence; evidence that may make or break the accuracy of the reconstruction and in turn, her client's case.

## THE IMPORTANCE OF UNDERSTANDING RECONSTRUCTION PRINCIPLES

Reconstruction is like putting together the pieces of a puzzle. Except the pieces don't come in a box – they need to be dug up, sometimes literally. And the team that gathers the most pieces will put together the most complete and reliable picture of what happened. The lawyer's primary role in the expert-lawyer relationship is to provide the data, or puzzle pieces.

And to gather needed evidence, the lawyer

must understand what evidence is critical and why. Without that knowledge, our questions in deposition or interviews will miss the mark. When accepting any case involving reconstruction issues, talk to your expert about good texts or articles needed to educate yourself on the issues in the case.

## THE RECONSTRUCTION TRIANGLE

Like any motor vehicle crash, the pieces of a recreational vehicle puzzle can be sorted into three boxes:

1. Human/operator;
2. Environment; and
3. Vehicle.

The human aspect focuses on operator input. Environment focuses on terrain and may include variables such as inclines or friction coefficients of the terrain due to things like snow or mud. The vehicle aspect focuses not only on vehicle defects or malfunctions, but also inherent design characteristics that tell us how a vehicle responds to operator input as well as how the environment will affect the vehicle's travel.

The expert-lawyer team must investigate and examine all three of these factors in a recreational vehicle case for at least two reasons. First, it is the lawyer's job to explore all possible avenues of recovery.

For example, was the crash caused by defendant's bad driving?

Was there something inherently dangerous about the environment such that the landowner may be liable? Or was there a problem with the vehicle that gives rise to a product liability claim? Second, if a plaintiff's liability claim is based on one factor (e.g. a product or vehicle problem), the defendant will almost certainly point to

one of the other factors as the cause of the crash (e.g. human/operator input).

## OPERATOR

As lawyers, it is typically our job to gather information concerning the human/operator aspect of a recreational vehicle crash. Our primary tools are the medical records, interviews and depositions.

### Operator – Medical Records

The medical records are important because a person's injuries often provide clues about how a crash happened. Critical care records should be provided to the reconstruction expert. While the reconstruction expert may not be qualified to render opinions concerning injury causation or mechanisms, they should be provided the critical care records to assure the injuries are generally consistent with the reconstruction. For example, if an ATV rolls over an operator, it is helpful for the reconstruction expert to know which side of the rider's body sustained road rash. For example, damage to her left side could assist the opinion that the ATV rolled to the rider's left. Rips and tears in clothing can also provide valuable clues.

### Operator-Interviews and Depositions

As lawyers, good interviews and depositions are our best chance to arm the reconstruction expert with valuable operator information. The lawyer and expert should speak before an interview or deposition to discuss those pieces of the puzzle the expert needs to create a better overall picture. In

other words, the expert must convey her thoughts on what information the lawyer should attempt to gather during the deposition of scene witnesses. Topics concerning the operator corner of the reconstruction triangle include:

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# AND OTHER OFF-ROAD CRASHES

- Operator's training and experience operating all kinds of recreational or off-road vehicles;
- Operator's familiarity with this vehicle or similar vehicles;
- Speed estimates;
- Amount of throttle applied (this would include both questions for the operator including application of throttle as well as engine sound from other witnesses);
- Steering input in terms of degrees. Ask these question to both operator and other witnesses who were in a position to observe the steering inputs;
- Braking input (including whether the front, rear or both brakes were applied and if so, when, how hard the brakes were applied, whether the application was gradual or sudden, and how long the operator applied the brakes);
- Observations or recollections concerning body/weight shifting and positioning; and
- Approximate distances and speeds from initial observation of hazard to crash.

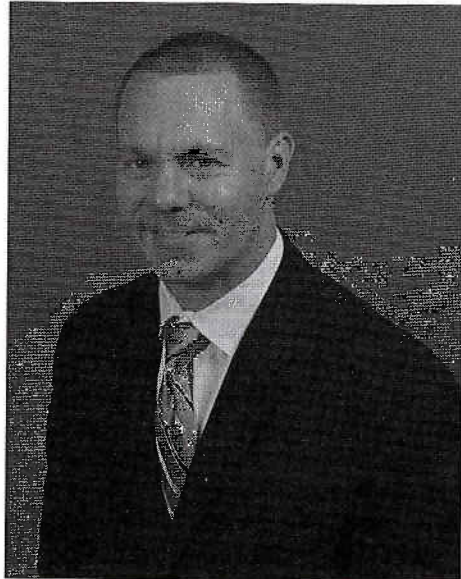
Also ask for operator height and weight at the time of the crash since these factors may impact the reconstruction.

## THE ENVIRONMENT OR SCENE

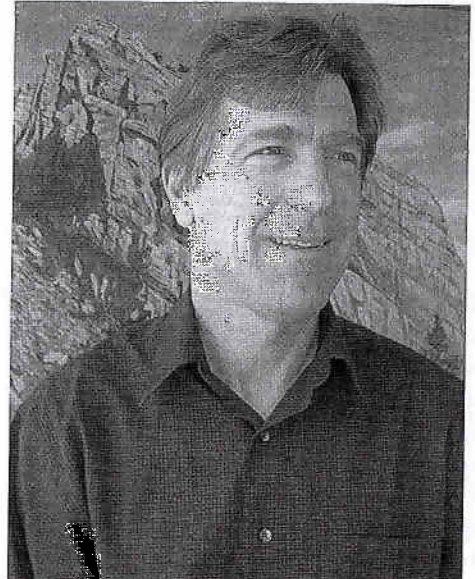
The lawyer and expert should work as a team to gather evidence from and concerning the scene. Lawyers know more about the case as a whole than the expert and thus should be present when the expert inspects the scene to share information as issues arise. Further, lawyers who get their shoes and hands dirty inspecting scenes simply know more about the crash and their clients' cases than lawyers who don't.

### Environment – Scene Inspections

In recreational vehicle crashes, it is critical to thoroughly inspect, measure and



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photograph the scene as soon as possible. Unlike concrete freeways, the general character of off-road crash scenes can change quickly. A good soaking rain or snow may not only wash away marks in the terrain, it could change the overall character of the terrain by washing away dirt or mounds. Likewise, vegetation changes can remove clues. Broken branches may fall off and grow back. In short, you and your expert need to inspect and document the scene as soon as possible. And if possible, have scene witnesses come with you to show you pertinent locations.

### Environment – Interviews and Depositions

Most reconstruction experts also like scene diagrams – preferably from first responders. If there were first responders, be sure to interview and depose them to dig into the details of the scene diagram, the methods used to create the diagram and take measurements taken.

If there is no first-responder scene diagram – or even if there is – bring 8 x 10 photographs of the scene taken during your inspection to the deposition or interview. Have the witness write on the photograph to indicate:

- Location of the crash or impact;

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