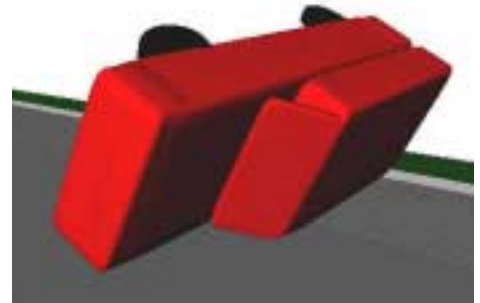


# Technology Associates

Forensic Engineering Experts – Ph (800) 358-9909 - Fax (888) 358-9901

## VEHICLE ROLLOVER

In many vehicle rollover investigations, it is necessary to know not only the speeds and motions of the vehicles involved, but the causes of injuries suffered by their occupants as well. Such investigations seek to answer questions regarding occupant ejection, effects of seatbelt use, roof crush and body-interior impacts. Obtaining answers often requires advanced roof structural analyses and three-dimensional computer simulations of the rollover motion itself. When analyzing a rollover accident, computer simulation is an invaluable tool, which allows us to model rollover motion and roof crush and can be used to create animations of the accident.



### Expertise

We have extensive experience in many aspects of computer simulation including:

- 3-Dimensional modeling using the Articulated Total Body (ATB) simulation code
- Finite element roof crush analysis
- Computer simulation and animation
- An extensive rollover reference library

### Questions Answered

Through scientific analysis, we can help you answer pertinent questions such as:

- What caused the vehicle to rollover?
- How many times did the car rollover?
- How does the stability index of the vehicle compare to others?
- Could the accident have been avoided through a design change?

### Case Examples

#### SUV Rollover:

An SUV lost control and traveled over a portion of highway guardrail before rolling down an embankment, destroying the roll cage's integrity. The defense theorized the driver was killed by intruding guardrail posts as the SUV rolled along the guardrail, and that a stronger roll cage design would not have protected him. We reconstructed the entire accident using computer modeling, which disproved the defense's theory and showed that the driver would have survived if the roll cage had been designed stronger.

#### SUV Rollover Ejection:

A woman driving an SUV was seriously injured when her vehicle rolled over due to the negligence of another driver. The SUV driver was ejected because she was unbelted. The defense claimed that, based upon statistical studies, she would not have been injured if she had been belted. We demonstrated that, her major injuries were caused by her impact with the door interior and would have been inflicted even if she had been belted and had not been ejected. The case settled in the plaintiff's favor.