

Introduction

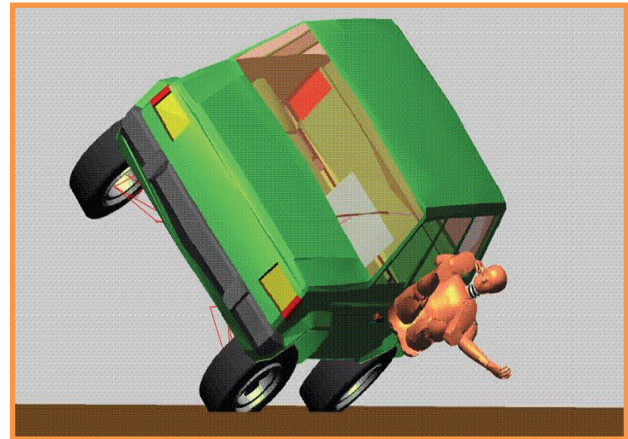
The field of Accident Reconstruction has and continues to be one of the most complex engineering problems to solve. With little or conflicting physical evidence Accident Reconstructionists are challenged to navigate through the vast number of possibilities to arrive at the actual chain of events for their clients in the insurance or legal professions. Often, people have been seriously injured or died and people's lives and futures are at stake - not to mention the multi-million dollar claims that soon follow.

With its foundation in physics, MADYMO is uniquely positioned to assist in these types of cases, to increase confidence and eliminate doubt. MADYMO is one of the most well documented software tools in the Accident Reconstruction Industry, used for studying both automotive and occupational accidents. It is one of the most universal and successful pieces of technology for Accident Reconstruction based on its ability to accurately model the environment, vehicles, and participants.

Why MADYMO

MADYMO, which stands for *M*athematical *D*ynamic *M*ODEl has been assisting the Automotive Industry for over 35 years. Traditionally, MADYMO has been used for the design and validation of occupant restraint systems for automotive and aviation interiors. With a database of over 60 Anthropomorphic Test Dummies (ATD) and Human Body Models, MADYMO is the world Leader in both dummy development and restraint system design. As a testament, the Insurance Institute for Highway Safety in its 2009 "Top Safety Pick", the restraint systems on a vast majority of these vehicle's was designed using MADYMO.

MADYMO is a Computer Aided Engineering (CAE) tool that combines the physics of Rigid Body Dynamics, Finite Element Analysis, and Computational Fluid Dynamics into one unique software tool. MADYMO can be use for modeling vehicle suspensions and structures as well as vehicle interiors, restraint systems and its occupants. Additionally, MADYMO can be combined with partner technologies to couple analyses with unique tire models or vehicle sensors to arrive at a fully functioning vehicle model from the ground up. MADYMO is the only tool on the market that provides this level of detail and ability to create a holistic vehicle model.



Methodologies

Over the course of several years and through close relationships with industry experts, TASS has developed methodologies unique to the Accident Reconstruction Industry. These methods when combined with optimization techniques yield impressive insight and results for a wide range of Accident Reconstruction problems. By using these methods, Accident Reconstructionists can accurately determine the actual chain of events, have more confidence in accident causation, and be better prepared to defend their findings during legal proceedings.

Benefits

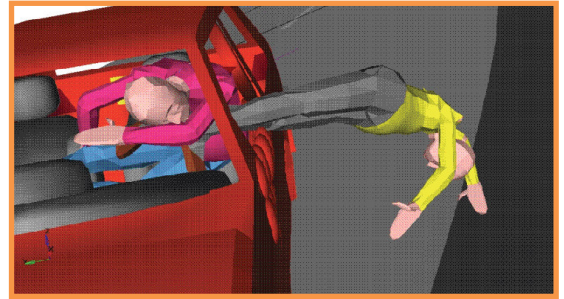
The following describes some of the potential benefits of using MADYMO for your next Accident Reconstruction event.

Accident Reconstructionist

- Accurate model of accident events with full physics capability
- Accurate model of physical environment, including road surface and details, friction, etc.
- Ability to model vehicle tires, suspensions, vehicle interiors, airbags, sensors, and occupants
- Ability to model vehicle or equipment failures
- Ability to model motorcycle accidents with specialized motorcycle dummy
- Ability to eliminate majority of extraneous possibilities via what if studies and DOEs.
- Ability to mathematically match physical evidence with actual events
- Ability to solve events with limited physical evidence or after significant time has passed
- Ability to scale dummies & HBM to match actual occupants
- Determine and correlate actual injury levels of occupants to medical records

Law Enforcement (Police & Prosecution)

- Reduce/eliminate doubt on the part of judge or jury
- Increase conviction rates and/or sentences
- Decrease court time & expenses
- Decrease court backlog
- Reduce civil liabilities
- Maintain/increase public trust



Special Features & Use Cases

MADYMO is a full physics tool thus has the ability to model a wide variety of accident scenarios. Furthermore, with its ability to couple with partner codes, users can create a holistic vehicle from the ground up. The following list describes some of the use case scenarios and special features that MADYMO possess.

Accident Scenarios

- Traditional vehicle accidents
- Vehicle rollover events
- Vehicle vs. pedestrian events
- Occupational events
- Motorcycle events
- Sports related injuries

Special Features

- Specialized tire models
- Vehicle airbags
- Over 60 ATDs and Human models
- Scalable dummies/HBM for accurate representation
- Active & passive restraint systems
- Vehicle sensors (stability & airbag)

Training

TASS has developed a specialized three week course for new Accident Reconstruction users. This course has been uniquely developed for using MADYMO for Accident Reconstruction and includes many of our proven methodologies. The curriculum will take new users through the introductory and intermediate uses of MADYMO. It will teach students how to setup and apply optimization tools and techniques to MADYMO simulations. Finally, it will teach students the unique application techniques required for use in Accident Reconstruction cases.

For more information, please visit us: www.tass-safe.com