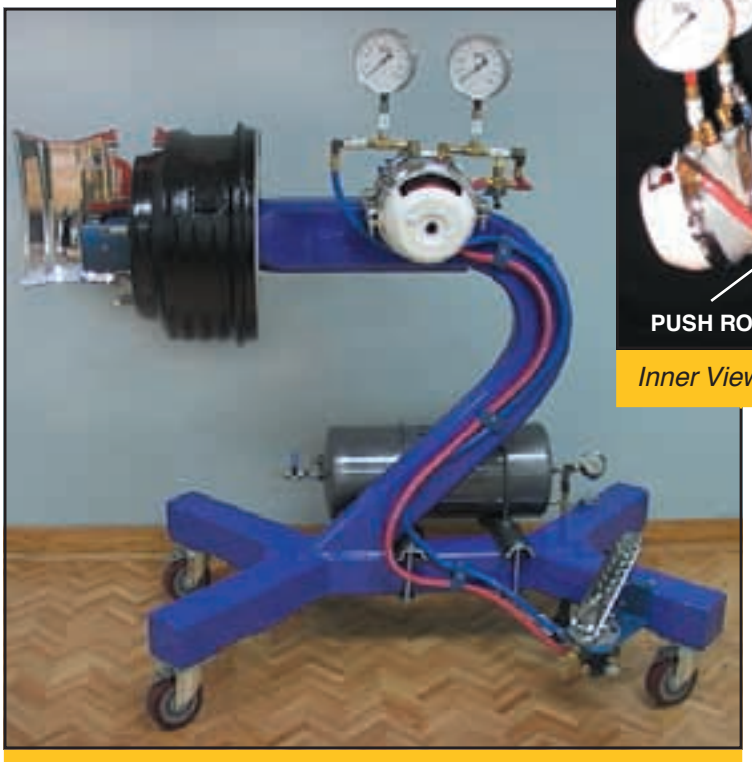
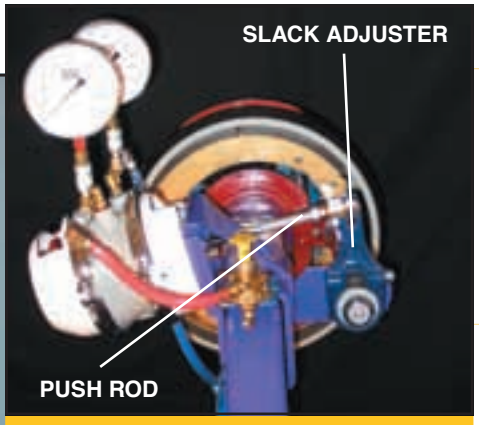
Courtroom Models Developed by Ruhl Forensic, Inc.

While many engineering and mechanical concepts are technical and complex, it is incumbent on the testifier to be able to communicate his or her conclusions to a judge or jury. At Ruhl Forensic, we have developed a number of working models that are used in a courtroom setting to assist in demonstratively explaining technical information.

The ability to effectively explain complex and technical subjects to a judge or jury can be crucial to the outcome of a case. At Ruhl Forensic we have developed a number of working models that are used by our staff in a courtroom setting to assist in demonstratively explaining technical information. Some of our models, such as the working air brake, are relative to many cases the firm testifies on. Other models are built specifically to demonstrate issues relative to a particular case. In both situations, the results have been very successful.



Working Air Brake Model



Inner View of An Air Brake Assembly

Working Air Brake Display

The use of technical mechanical terms such as slack adjuster, push rod, and air brake chamber can leave a jury confused and overwhelmed when it comes to understanding the functioning of a commercial vehicle air brake system. To address this situation, Ruhl Forensic has developed life-size working models that can be wheeled into the courtroom allowing for a clear understanding of these terms.

Since these air brake displays are working models equipped with their own air supply, they can be used to actually demonstrate to the jury the functioning of the brake system and each of its components.

When a case centers around the effect of out-of-adjustment brakes on stopping distances, for example, what better way to explain it than by having a working model right in front of the jury?

The system can be aired up with the gauges clearly showing the air pressure in the system. The cut-aways in the air brake chamber allow the jury to see the operation of the brakes. The jurors are able to see for themselves the difference in response time and reduced braking potential caused by the out-of-adjustment brakes.

These models have been used all over the country in both deposition and trial testimony to clearly explain the technical aspects of a case.

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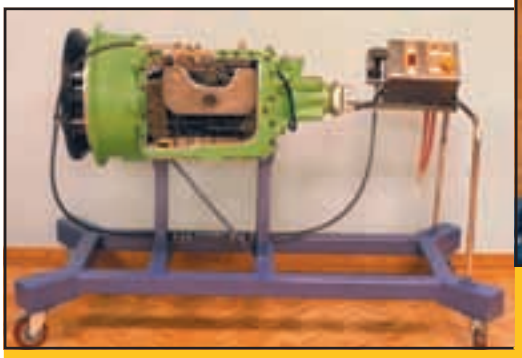
Ruhl Forensic, Inc.'s staff *provide expertise in: mechanical and electrical engineering, collision investigation and vehicle dynamics, biomechanics and human factors, heavy vehicle driving and mechanical systems, federal regulations and compliance, fleet safety, traffic engineering, construction zone safety, OSHA, graphic visualization, and other areas.*

Our experts provide a continuum of service from initial on-site investigations through research, testing and reconstruction to courtroom testimony and presentation graphics and visualization.

We offer quick response to your investigation needs 24 hours a day. Contact us by calling 1-800-355-7800, 1-800-235-2808, or 1-800-278-4095.

Please feel free to call us with any questions that you may have and we will direct you to the appropriate individual within our firm.



Allison Automatic Transmission Model

Mock-up of the console shift lever and interlock circuitry that would have prevented the accident

Allison Transmission Model

The Allison Automatic Transmission model was developed by Ruhl Forensic for use in a case involving a refuse truck driver who died after being crushed between the frame of the truck door and the rear of the cab. The model demonstrates some simple and inexpensive safety devices that could have been added to the truck that would have prevented the accident: a neutral light, a parking brake light and a parking brake interlock. With a parking brake interlock, the truck could not have dropped into gear as it did.

The model is equipped with the operator controls that would normally be found in the cab of the truck: an ignition key, transmission lever, and parking brake hand valve. The transmission shift selector lever has 6 positions: Drive, 1, 2, 3, Neutral, and Reverse.

Connecting the full-size Allison Transmission to the fully functioning Ruhl Forensic Air Brake Display allowed the jury to clearly see the changes in the mechanical response with the parking brake interlock turned off and on. A neutral light and the parking brake light, as shown on the control panel, are inexpensive additions that would have provided additional visual notification to the operator of the truck s status.

The demonstration was effective; the case settled during trial for over $2,000,000.

Cutaway View of the Wheel and Brake Assembly of the Steer Axle

Steer Axle on a Tractor

This model of a steer axle was assembled to explain to a jury the sequence of events leading to a fire. Checking the hub oil level at the wheel is part of the required pre-trip inspection (FMCSR 392.7) performed by commercial vehicle drivers at the beginning of each trip and/or driver s day. In this case, the driver had not checked the hub oil level in quite some time, allowing it to go dry. The result was a fire caused by friction.

Being able to wheel into the courtroom a cutaway view of the actual wheel and brake assembly provides the jury with a concrete understanding of how the hub oil level is checked and the consequences of not doing so. The case settled shortly before trial for a substantial sum.

For more information on our models and their potential use in your case, please contact Ruhl Forensic at ruhl@ruhl.com or by calling the Scottsdale office at (800) 235-2808.

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