

# "Expertly Speaking®"

=== DJS Associates, Inc. ===

Forensic Engineering Services    Expert Network    Multi-Media Exhibit Systems  
Laser Scanning Technology    Sigma Animation

215-659-2010    800-332-6273    Fax: 215-659-7156

experts@forensicDJS.com

2007-2008 Fall Winter Edition

www.forensicDJS.com

## Reconstruction of a Single Vehicle Collision Utilizing Rest Positions of Ejected Occupants Steven M. Schorr, P.E.

Case Synopsis: Pickup truck was traveling southbound along a two-lane, two-way roadway. The pickup truck moved left across the centerline, across the northbound lane, across the northbound shoulder and onto the east side embankment. The pickup truck hit the "turned down" end of an east side guide rail, ramped up into the air, and struck the side of an east side house before coming to rest on its roof. During the dynamics of the collision two occupants were ejected and two occupants remained in the vehicle. The pickup truck struck the embankment and continued to the southwest, eventually rolling over and coming to rest on its roof.

Expert Analysis: Tire marks, vehicular damage, and damage along the east side of the roadway allowed for a reconstruction of the dynamics of the vehicle. Once the vehicle dynamics were completed, the physical evidence along the side and roof of the house allowed for the reconstruction of the travel path of the ejected occupants. One of the ejected occupants struck a second floor window on the side of the house and dropped to a point of rest adjacent to the side of the house. The other ejected occupant hit the corner of the roof of the two-story house before coming to rest in the backyard. The significant trajectory angle and distance associated with the ejected occupants helped define a range of speeds for the pickup truck, as well as where the occupants needed to be seated prior to their ejection in order to have ended up in the locations that they did.

Results: Although the physical evidence was diverse and tragic, it was sufficient to allow for an engineering analysis as to the speed of the vehicle, the general dynamics of the vehicle, and the seating position of the occupants [answering the critical question of who was the driver of the vehicle].

## Premises Liability / Public Parking Lot Trip and Fall John E. Tesoriero, P.E., P.P.

Case Synopsis: Plaintiff utilized the subject public parking lot to park their car and go to work. Plaintiff was well experienced with the parking lot, its use and condition. On the day of the incident, the plaintiff, while walking through the car wheel stop area purportedly tripped over protruding vegetation and fell, resulting in injury. The parking lot was owned, maintained and operated by the Defendant Public Entity.

Expert Analysis: A review of the various deposition testimonies of the involved parties and witnesses, as well as the facts as discovered through investigation revealed the following:

1. Defendant performed due diligence by providing ordinary and due observation, operation and maintenance of the parking lot on a regular and as needed basis.
2. Defendant took reasonable action to assure its public property was reasonably safe for its intended use by the public
3. Defendant never received any notice of any defective, hazardous or dangerous condition of its public property.
4. Defendant reasonably relied upon its employees for the observation, operation and maintenance of its public property.
5. Plaintiff carelessly and recklessly elected to walk between the concrete bumper stops in lieu of the clear and unobstructed travel aisles of the parking lot.
6. The contended grass growth is a normal occurring condition of outdoor areas due to the uncontrolled spread of seeds and beyond the reasonable control of the defendant.

Duties: The public entity met its due diligence requirements by providing routine inspection, observation, operation and maintenance of its public property in a reasonably safe and proper manner. Respectfully, the defendant asserted protection under the Tort Claims Act for Sovereign Immunity.

Result: Out of court settlement acceptable to the defendant.

### Route To:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Seminars & Articles  
Joy S. Falk

Experts/Research/Exhibits  
Joanne M. Troppello

Special Investigations  
Terry W. Myers

Laser Scanning & Animations  
Buddy Borbidge, BSME

## **Broken Hot Water Heater Pipe Results in Burns at Nursing Home**

**Harris S. Gross, PE**

Case Synopsis: A 2 ½ inch hot water heater pipe in a nursing home started leaking, and very shortly thereafter ruptured. As a result, three employees and a patient suffered first and second degree burns from the hot water. The rooms in the area were physically damaged as a result of the large quantity of hot water that gushed from the pipe.

Expert Analysis: A review of the pipe materials revealed dissimilar metals were used. One portion of pipe was copper and the other was galvanized steel. When physically touching (threaded together), the materials are known as dissimilar metals. When two dissimilar metals are joined in the presence of a conductor, one acts as the anode and the other acts as the cathode. In this case, the conductor was the hot water. The copper pipe (anode - positively charged) attracted the actual material of the steel coupling (cathode - negatively charged). The difference in charges was the driving force behind creating the corrosion evident in the coupling.

The material that migrated from the steel to the copper, was the physically closest (touching material, and in this case, was the pipe threads of the steel coupling. The forces that try to push the piping apart, are the pressure of the water, the weight of the water and the weight of the pipe itself. The contact between the copper pipe threads and steel pipe threads is what provided the force that kept the two pipes joined together. When the threads corroded, there was not sufficient physical material / contact to provide the force necessary to keep the pipes together and therefore, the pipe failed. The different materials of piping were not visually observable because they were covered with insulation.

Result: The attorneys and the insurance company learned that the maintenance employees did not cause the failure of the pipe and were not responsible for the burns to the patient or other employees. The nursing home learned that they have other piping with dissimilar metals running throughout their facility, which needs to be properly joined before it also ruptures and spills hot water.

## **Machine Accident Case Against Employer and Manufacturer**

**Thomas J. Cocchiola, PE, CSP**

Case Synopsis: Case involves two separate claims filed on behalf of a worker who was severely injured in a machine accident. Injured employee was permitted to file a claim directly against his employer due to extraordinarily hazardous workplace conditions. Separate product liability claim was also filed against the machine manufacturer. The worker was injured while cleaning an unguarded machine. The worker was cleaning the machine while it operated in accordance with company procedures. He was using pressurized air to remove fibrous material from the surfaces of rotating rollers. The procedure required the worker to hold the air nozzle close to an inrunning nip formed between two counter-rotating rollers. Accident occurred when the hose contacted the rotating rollers and was pulled into an inrunning nip point. The worker's left arm was partially amputated when it was pulled into the inrunning nip point with the air hose.

Expert Analysis: Case required an engineering evaluation of machine design/safeguarding issues as well as a risk analysis of hazardous conditions created by the employer.

Machine Design - Engineering evaluation demonstrated the design of the machine was inconsistent with applicable ANSI safety standards and fundamental machine guarding recommendations. Manufacturer could have equipped the machine with an optional interlocked guard that effectively prevents access to rotating rollers but chose to sell the machine without this important safeguard. Instead, the manufacturer provided a readily removable nip point guard and relied upon the employer to determine the need for additional guards. The readily removable guard was inadequate for this application.

Employer Actions - Employer reportedly removed the nip point guard furnished by the manufacturer and operated the unguarded machine in order to maximize production. Workers were instructed to clean the rotating rollers without shutting down the machine about once an hour. Removing the guard and intentionally exposing workers to unguarded machine hazards violates applicable OSHA and ANSI standards. The injured worker was permitted to file a claim directly against his employer because of the extraordinary workplace hazards along with the intentional exposure to dangerous conditions. An engineering analysis and risk assessment demonstrated the employer's removal of the guard and the intentional daily exposure of workers to unguarded machine hazards would eventually result in an accident (i.e., a machine accident was substantially certain).

Result: Engineering analysis and risk assessment enabled injured worker to resolve the claim against his employer on the eve of trial. Analysis also enabled injured worker to resolve the third party product liability case against the manufacturer.

## Steering Failure in Late Model Toyota R. Scott King, BSME

Case Synopsis: The owner of a late model SUV was injured after the vehicle she was operating departed the roadway and struck an embankment. A witness traveling behind the vehicle reported seeing the left front tire and wheel assembly detach from the vehicle. After the incident, the woman's family reported that the vehicle had recent front suspension work performed in accordance with a manufacturer's recall. The family retained counsel and hired a forensic mechanic to inspect the vehicle and determine if the incident was related to the recent service. According to plaintiff's trial testimony, the vehicle suffered a mechanical failure of the left side tie rod end, (steering component) which was disturbed during the recent recall repairs. Further, plaintiff's expert testified that the tie rod end failed because the technician that performed the work did so improperly by using an industry tool known as a "pickle fork". This, he explained, was evident by two small striations on the tie rod end. He also testified that the use of the pickle fork initiated a weakening of the component that ultimately led to its sudden failure and loss of vehicle control.

Expert Analysis: The defense expert, however, suggested an alternate theory. Specifically, the defense pointed out that the left front wheel assembly, as well as parts of the left front suspension, detached from the vehicle as a result of the collision, a fact agreed to by the plaintiff. Indeed, both sides agreed that there was compelling physical evidence of a significant and catastrophic impact to the left front wheel assembly and suspension system. Thus, both sides agreed the collision alone had the potential to cause the left tie rod end to fail. The defense, however, extended this theory by noting shortcomings in the plaintiff's analysis. In particular, the defense challenged the completeness of the plaintiff's analysis by noting important observations of the entire tie rod end assembly were never made. Because of this, according to the defense expert testimony, the plaintiff could not rule out the tie rod end damage was not simply a result of the incident. Further, the defense expert demonstrated to the jury how the two striations on the tie rod end that, according to the plaintiff's expert indicated the use of the wrong tool, could also have been caused by the exact and proper tool the defendant testified he used during the recall repairs.

Result: During deliberations, the jury determined that plaintiff had not fully evaluated the physical evidence and offered them no explanation as to why the damaged tie rod end could not have been a consequence of the collision. Accordingly, the jury returned a verdict for the defendant.

## Negligent Care of New Pressure Ulcer Robert Goldman, M.D.

Case Synopsis: Overweight 58-year old male underwent a four-vessel coronary artery bypass (CABG) procedure at a large Midwest academic medical center. Course was complicated by cardiogenic shock (acute heart failure with significant drop in blood pressure) on post operative day 3. He developed acute renal failure. Heart function returned to normal within days; thinking and movement remained relatively normal; however, renal failure was permanent. While in ICU on appropriate skin preventive care, he developed a sacral stage I pressure ulcer on day 6, stage II on day 7, stage III on day 9, stage IV on day 14. Pressure IV ulcer was surgically debrided to remove black necrotic tissue. After debridement, the defect was extensive-3" deep, 5" long and 7" wide. Treatments including dressing and support surface (specialty bed) were stage specific and appropriate. After being discharged, plaintiff's wound was treated non-surgically at another hospital and healed after 18 months. Plaintiff sued defendant facility and physicians for negligent care.

Expert Analysis: *Deep soft tissue injury under intact skin* is a new designation for a type of pressure ulcer that does not fit into traditional Stages I through IV. It can be loosely described as a black "eschar" at a pressure area such as the heel or sacrum. Area typically evolves over a week after acute tissue death from infarction (acute loss of blood flow and oxygen) similar in many ways myocardial infarction (heart attack). After infarction of an extensive volume of tissue, sacrum in this case, it takes 2 weeks for the tissue death to fully "blossom." The process is similar to postmortem decomposition of the human body. After a day or two, there is only livido, redness which could be confused with a stage I pressure ulcer. As gross decomposition continues over 2 weeks, the body turns leathery and black, but the skin remains intact. In *deep soft tissue injury under intact skin* only a specific region subject to pressure decomposes and turns black and leathery. Because there are no early physical signs to guide treatment and damage has already occurred, stage-specific protocols are ineffective.

Result: Expert argued persuasively that this injury was *deep soft tissue injury under intact skin*; soft tissue of the sacrum "infarcted" due to a combination of low flow and moderate pressure. However, it took 3 days for livido to set and 14 days for the region to mummify. As such, this pressure ulcer could not have been prevented or mitigated by usual stage-specific stands of care. Case settled out of court.

## Typical Uses of High-Definition Surveying Technology

### Buddy Borbidge, BSME

Through the utilization of cutting-edge high-definition surveying (**HDS**) laser scanning technology, engineers can now collect numerous measurements cost-effectively, with unprecedented accuracy, at the speed of (laser) light.

**HDS** technology has the ability to rapidly advance the field of forensic engineering, not just in the area of collision reconstruction, but in any discipline that requires precision measurements. **HDS** produces increased quantities of data, improved analyses and more detailed exhibits. It also captures data with unprecedented speed in areas where it would not typically have been possible to collect the data. These benefits enhance the engineers' ability to analyze and present the data and the analysis.

#### **Forensic and non-forensic applications of high-definition surveying, laser scanning technology, include:**

- \* **Documents any Type of Topography with Unprecedented Three-Dimensional Detail and Accuracy**
- \* **Highly Accurate, Highly Detailed Documentation and Comparison of Vehicle Crush Profiles**
- \* **Measurement of Complex Mechanical Operations such as Pipelines and Chemical and Nuclear Plants for As-Built Drawings**
- \* **Measurements of Building Facades, Building Collapses and Structural Failures**
- \* **Documentation of Remnants of Building Fires, Parking Lots, Shipping Docks and Stairways**
- \* **Measurements of Hazardous Areas such as Bridges, Rock Faces, High-Traffic Areas and Intersections Obstructed by Foliage**

**HDS** laser scanning technology's ability to accurately collect data in three-dimensions is unparalleled in the industry today. This technology is starting to be utilized in all areas of engineering. The ability to evaluate engineering issues via a three-dimensional "virtual world" provides the engineer, and those who might utilize the analysis, with a powerful analytical and demonstrative tool. Confirmation of the accuracy of the laser scan through studies and specifically created "double checks" are particularly important in the forensic area where every element of an analysis is scrutinized by opposing parties on the lookout for any potential flaw, no matter how small. There is no other data collection process available which permits more data to be collected in a shorter period of time, and that allows the data obtained to be utilized so easily and quickly.

## **Hotel Premise Liability and Personal Injury Cases, R. Britton Colbert, CHA**

Premise liability and personal injury cases associated with hotels generally encompass the key concepts of reasonable care, foreseeability and control, all of which are recognized in the lodging industry as universally accepted operating standards regardless of size or type of facility. Both plaintiff and defense cases examine many areas of hotel operations. For example, slip and fall incidents can involve issues involving capital expenditures, repair & maintenance, supervision, training and follow-up activities by management. Assault incidents generally include loss prevention training, scheduling, the use of security, outside contractors and background checks. Many equipment failure-related accidents involve repair & maintenance, training, scheduled inspection/testing and record keeping, particularly by the engineering department.

Hotel documents such as accident reports, incident reports, contracts, diagrams and layout specifications, activity logs and schedules along with general (and specific) operating policies and procedures are routinely available and used by hotel management throughout the industry. These management reports should always be part of discovery and analysis, regardless of whether the case is a plaintiff or defense dispute. Plaintiff and Defense cases routinely reflect these hotel operating departments or reporting and control practices. Knowing the accepted practices, procedures and limitations within the lodging industry regarding property and system reports, procedures, testing, training, record keeping are critical to properly evaluating all hotel-related cases.

## Runaway Truck, Ronald E. Tomasetti, CDS

Case Synopsis: Driver of a commercial motor vehicle (an off-road dump truck), after making several brake applications, experienced a loss of brakes while proceeding down a steep hill grade at the job site. The driver continued steering the truck, which was gaining speed, down the hill. He had several options available to him:

**1.** Use one of the truck run-away ramps (designed and approved by state engineers and installed by a local construction company). **2.** Continue steering down the hill to an exit road used by other construction vehicles (not in use at this time) that had a slight up hill incline. **3.** Ditch the truck in a field that was at the bottom of the hill approximately 600-feet away (recently plowed and ready for planting after raining that morning).

The driver choose to bail out by jumping from the truck he was operating, and suffered severe injuries after being run over by the vehicle's rear tandems.

Experts Analysis: The expert inspected the vehicle and records of the maintenance department, which indicated several brake adjustments were made to the truck one week prior to the incident. The rear brakes were replaced on this truck two weeks before the accident. Further investigation revealed that the brakes were installed incorrectly by an unqualified mechanic who was recently hired. The mechanic did not have "brake certification" (FMCSR 396.2 (c) (d) and the company neglected to do a background investigation into his employment history as required by FMCSR 391.23. Employment records indicated that he was used on occasion as an over-the-road tractor-trailer driver. Records also revealed that the driver performed a pre-trip inspection earlier that day and found a defective air pressure gauge. The driver took the truck to the shop for repairs. That shop noted that it was okay to drive as long as the air compressor was working.

Result: Case settled.

### Fax Back Request Form 215-659-7156

To receive any of the following curricula vitae from **DJS Associates, Inc.**, please check the appropriate box(es):

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Buddy Borbidge, BSME         | <input type="checkbox"/> Harris S. Gross, P.E. | <input type="checkbox"/> Steven M. Schorr, PE          |
| <input type="checkbox"/> Thomas J. Cocchiola, PE, CSP | <input type="checkbox"/> Daniel M. Honig, P.E. | <input type="checkbox"/> John E. Tesoriero, P.E., P.P. |
| <input type="checkbox"/> R. Britton Colbert, CHA      | <input type="checkbox"/> R. Scott King, BSME   | <input type="checkbox"/> Ronald E. Tomasetti, CDS      |
| <input type="checkbox"/> Robert Goldman, M.D.         | <input type="checkbox"/> Jon J. Pina, MS, CSP  | <input type="checkbox"/> Nancy L. Wenocur, Paralegal   |

To receive information on any of our seminars, please check the appropriate box(es).

- |   |   |
|---|---|
| <input type="checkbox"/> High-Definition Surveying Laser Scanning Technology. . . | <input type="checkbox"/> Expanding Role of the Paralegal. . .         |
| <input type="checkbox"/> Roof Failures, Foundations, Structural Defects. . .      | <input type="checkbox"/> Pedestrian Knockdowns, Who's the Driver. . . |
| <input type="checkbox"/> Vehicle Defects, Automotive Claims and CDR. . .          | <input type="checkbox"/> Motor Carrier Accidents/The Big Rigs. . .    |
| <input type="checkbox"/> Seminar Topic List. . .                                  |   |

To receive information on any of our divisions/services, please check the appropriate box(es):

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Forensic Engineering Services                             | <input type="checkbox"/> Expert Network  | <input type="checkbox"/> Multi-Media Exhibit Systems |
| <input type="checkbox"/> Tractor-Trailer Investigations                            | <input type="checkbox"/> Sigma Animation | <input type="checkbox"/> Automotive Investigations   |
| <input type="checkbox"/> High-Definition-Surveying (HDS) Laser Scanning Technology |  |  |

### Information on Forensic Storage & Technolgy Center

Name: \_\_\_\_\_ Firm Name: \_\_\_\_\_

Address: \_\_\_\_\_ City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Would you like the information faxed, mailed or emailed? \_\_\_\_\_

**Contact with High Voltage Line**  
**Jon J. Pina, MS, CSP, Safety, Health, and Environmental Expert**

**Case Synopsis:** Plaintiff, an employee of a residential contractor, was seriously injured from electrical shock when he contacted an overhead 7,200 volt electrical line while handling the rigging cable from a hydraulic boom crane operated by another contractor. The crane had raised its boom above the foundation, rigged with 4 short wire cables from its hook down to 2 spreader beams with a longer cables attached for lifting the 2 sections of a modular home. The 2 longest cables were to be wrapped underneath the modular home section, which was on a trailer, and connected to the other 2 shorter cables to complete the rig to “pick” the load. The plaintiff, working from the ground without any protective apparel, grabbed both long cables and whipped them to prepare to rig the modular home section. The whipping action caused both of the cables to contact the overhead electrical line which severely shocked the plaintiff.

**Expert Analysis:** Although there were some conflicting testimonies, evidence pointed to the plaintiff’s own actions that caused him to strike the power line by holding and moving the cables in his hands. The task was performed in the following manner:

1. Plaintiff worked alone and did not take time to assess the hazard of whipping the cables into the power line accidentally. He had rigged many times before so he knew of the whipping nature of the wire cables.
2. Plaintiff’s employer should have provided training on performing tasks as such. The general contractor should have conducted toolbox meetings and a Job Safety Analysis (JSA) for such tasks as rigging near power lines.
3. Plaintiff should have questioned his supervisor as to the status of the electrical power line. It was not de-energized and he should have refused to whip the cables in the manner that he did.
4. Plaintiff did not wait or ask spectators to “spot” him as he handled the cables to position them to rig the house section in preparation to lift it.
5. There was no record or mention of him asking for personnel protective equipment (PPE) such as non conductive clothing, boots and gloves for arc protection.
6. Plaintiff’s employer should have provided the appropriate PPE and training on how to use it. Although PPE is the lowest form of worker protection and last resort, it would have helped protect the plaintiff.
7. The general contractor did not coordinate the activities of the contractors, assumed the task of lifting the modular home could be done safely without de-energizing the lines, and did not supervise that particular task.
8. Power company failed to check the location of the proposed construction, its possible effect on company equipment and any protective measures that may be taken as stated in their company’s Practices and Standards Manual.

**Result:** Expert concluded the crane operator did his job in a safe manner since it was not the boom that struck the high voltage line. It was the plaintiff’s decision to perform the task in an unsafe manner resulting in his injury. Case settled prior to trial.

New Updated Seminars:

High-Definition Surveying Laser Scanning Technology:  
**Cutting-edge technology for case investigation through presentation**

Roof Failures, Foundations, Structural Defects: **Building your case with the expert**

Vehicle Defects, Automotive Claims and CDR (Black Box) Technology:  
**Key points from the expert**

The Expanding Role of the Paralegal in the Field of Forensics: **Working with the expert**

Pedestrian Knockdowns, Who's the Driver, Low-Speed Impacts and More:  
**A potpourri of case studies from Steven M. Schorr, PE**

Motor Carrier Accidents/The Big Rigs:  
**Steering your case with the tractor trailer and accident reconstruction expert**



## **FORENSIC STORAGE & TECHNOLOGY CENTER**

AN INDEPENDENT STORAGE, INSPECTION & CONFERENCE FACILITY  
[forensicstoragecenter.com](http://forensicstoragecenter.com)

### **Innovative and Ground-Breaking**

#### **FORENSIC EVIDENCE STORAGE:**

**Secure climate-controlled indoor facility**  
**10,000 square feet**  
**24-hour surveillance**  
**Evidence photographed upon receipt**  
**Items shrink wrapped for protection**  
**Affordable storage rates**

#### **INSPECTIONS:**

**Vehicle lifts**  
**Heavy trucks/buses/all passenger vehicles**  
**Vehicle diagnostics**  
**ECM "black box" download capabilities**  
**HDS laser scanning capabilities**  
**Fully stocked tools**  
**Well-lit spacious climate controlled work area**

#### **CONFERENCE CENTER:**

**Large modern conference area**  
**Private meeting rooms**  
**Internet access**  
**Large screen monitors**  
**Aerial viewing platform**

**Storage Space Available for all Types of Evidence**  
**Pick-Up/Towing Services Available**

**contact: John McShane: 215.322.1375**  
**email: [info@forensicstoragecenter.com](mailto:info@forensicstoragecenter.com)**

**DJS Associates, Inc.**

1603 Old York Road  
Abington, PA 19001

**First-Class Mail**  
**U.S. Postage Paid**  
**Abington PA**  
**Permit No. 321**

ADDRESS SERVICE REQUESTED

Send us the address  
or business card of  
anyone you think might  
enjoy receiving  
**"Expertly Speaking®"**

**Structural Failure of 30 Year Old Barn, Daniel M. Honig, P.E.**

Case Synopsis: Case involved an approximately 30-year-old barn structure, approximately 80 feet by 240 feet long, by 34 feet high. The main structural components consisted of rolled, three-hinge arches on a repetitive base space at 4 feet o.c. with multiple laminations per section. Within 5 years, delaminations were observed and brought to the attention of the pre-engineered building component manufacturer. Multiple attempts were made to address the problem, but ultimately, the building partially collapsed due to the delamination.

Expert Analysis: An engineering review of the method and location of the structural failure and the attempted previous repairs was conducted. An adhesive problem was suspected. Five samples were taken and subsequently sent to a materials testing lab for analysis of the adhesive glue used in the fabrication. The adhesive glue was not resistant to a combination of heat and moisture and deteriorated over time, which caused the delamination and structural failure

Results: Satisfactory resolution of liability.

**"Look That Up In Your Funk and Wagnalls" Nancy L. Wenocur**

For those of you old enough to remember that classic line from the television show Laugh-In, old enough to remember a 30-volume hardbound encyclopedia set in your house, and/or old enough to have survived a sequestered life in a college or law school library, you also know the value of authoritative research sources.

**Forensic Engineering Services and Expert Network, divisions of DJS Associates, Inc.** have access to multi-disciplinary reference sources to assist you with your case needs including engineering specifications; roadway & design guidelines; commercial driver regulations and requirements; detailed vehicle data. When the vehicle hit the pole was it due to driver error, geometry of the roadway, location of the obstacle? Was the parked tractor-trailer on the side of the road properly fitted with the appropriate retro-reflective devices, were the proper warning devices put out within the proper time constraints? Did the car stop at the proper location at the intersection or was the pedestrian on the wrong side of the road? Each case scenario requires knowledge of different disciplines and resources. Think of DJS as your personalized encyclopedia...and we don't require room on your shelves.

For More Information:  
**Call: 800-332-6273 or 215-659-2010**  
**Joy S. Falk, Director**  
Forensic Engineering Services  
Expert Network  
Multi-Media Exhibit Systems  
Laser Scanning Technology  
Sigma Animation

*This newsletter is provided for general information. Authors and publishers are not rendering professional or legal advice or opinions on specific facts or matters. DJS Associates, Inc. assumes no liability whatsoever in connection with the use of the contents of this publication.*