"ExpertlySpeaking®"
Fall / Winter 2010 - 2011
Forensic Consulting, Technology & Animations
brought to you by DJS associates

IN THIS ISSUE

CONTACT DJS

215-659-2010
800-332-6273

Company Information
Joy S. Falk
jsf@forensicDJS.com
ext. 31

Experts/Research/Exhibits
Yaisa Q. Freeman
yqf@forensicDJS.com
ext. 17

High-Definition Survey (HDS) & Investigations
Terry W. Myers
twm@forensicDJS.com
ext. 14

Engineering Animations
Hugh Borbidge, BSME
hbb@forensicDJS.com
ext. 23

Improper Air Purification Unit Installation

Thomas J. Cocchiola, PE, CSP / Mechanical Engineer

Case Synopsis: A lodge purchased several air purification units for a large room typically used for community social events. The air purification units were assembled and shipped to the lodge with a set of instructions for installing them above a drop ceiling. Lodge members decided to install the air purification units themselves instead of hiring a subcontractor. The members removed the air purification units from their shipping cartons and proceeded to install them without reading the installation instructions. One of the members had some air conditioning and heating equipment installation experience, but the rest were inexperienced and untrained. None of the members had ever installed an air purification unit. Less than two months after the air purification units were installed, a louver fell from one of the units and struck a woman who was playing bingo.

Expert Analysis: The manufacturer's installation instructions advise users to loosen fasteners and remove louvers and air filters before lifting and installing a unit. Users are supposed to reinstall the filters and louvers, and properly tighten fasteners, to complete the installation. An evaluation of the louver and fastener design demonstrated that it was virtually impossible for a louver to separate and fall from a properly installed air purification unit. The evaluation was supported by the manufacturer's field experience which indicated that a fastener had never loosened and caused a louver to fall from an air purification unit. A review of manufacturing quality control inspection procedures confirmed the design and manufacture of the air purification unit did not cause or contribute to the accident.

Result: Engineering analysis determined that the louver fell and injured the woman because the lodge members did not properly install the air purification units in accordancewith the manufacturer's requirements. Case settled.

LASIK Patient Alleges Poor Outcome

Phillip J. Calenda, M.D. / Opthalmologist

Case Synopsis: A 28 year-old, highly nearsighted, male patient underwent LASIK Surgery. Post-operatively he had very unstable vision and subsequently developed a degenerative disorder of the eye called keratoconus. The patient alleges that his surgeon improperly valuated and/or treated him for his nearsightedness, causing him to develop permanently impaired vision.

Expert Analysis: Examination of the patient's pre-operative, operative, and post-operative medical records revealed multiple deviations from the standards of care by the patient's LASIK surgeon. Specifically, the surgeon inadequately measured the pre-operative thickness of the patient's corneas, and then treated an excessive amount of the patient's corneas, resulting in the patient developing Keratoconus, (a weakened and mis-shapen cornea), as well as poor vision.

Result: Case settled.

Failure to Label Radiographs

Michael E. Pliskin, D.D.S., Ph.D.
Dentistry

Case Synopsis: A 25 year-old male was referred to an oral surgeon for the removal of four, impacted wisdom teeth and an extra (supernumerary) wisdom tooth on the lower right side. A panoramic radiograph was taken at the general dentist's office and sent with the patient to the oral surgeon. The radiograph was not labeled right and left. The oral surgeon used the unlabeled radiograph and proceeded to extract the wisdom teeth, including the extra tooth. The oral surgeon, as a result of the unlabeled radiograph, thought that the extra tooth was on the left side of the lower jaw. After exploring this area and finding no tooth the surgeon proceeded to the right side and removed the lower right wisdom tooth as well as the extra or supernumerary tooth. Unfortunately, the surgical exploration on the left side damaged the inferior alveolar nerve that supplies the teeth, gums and lip on the lower left jaw resulting in permanent paresthesia (numbness).

Expert Analysis: Failure to appropriately label radiographs can lead to extracting or restoring the wrong tooth or teeth. The oral surgeon should never have performed the surgical procedure unless he could determine accurately which side contained the extra tooth. To make matters worse, the patient had no fillings (restorations) which could have helped the surgeon determine right from left.

Result: Both the referring general dentist and the oral surgeon should have ensured that the panoramic radiograph was appropriately labeled right and left. The oral surgeon assumes the majority of the responsibility because he was directly responsible for the damaged nerve and resultant permanent paresthesia.

DJS Associates, Inc.

Bringing Together
Expertise, Technology, Client Service,
Experience and Education

To Better Serve Our Clients
On All Their Case and Educational Needs.

Joy S. Falk, Vice President
Communications and Marketing

Hotel Assault: Licensor-Licensee Duties & Responsibilities

R. Britton Colbert, CHA / Hotel Operations

Case Synopsis: An assault occurred in the parking structure of a 450-room major chain-affiliated hotel. Plaintiff's counsel retained a hotel franchise expert to focus on the duties and responsibilities of the hotel licensor and the licensee regarding safety and security, specifically for the subject hotel, as well as the broad responsibilities of both the licensor and the licensee.

Expert Analysis: Evaluation of the discovery established the following facts: **(a)** the licensing company had organized a separate license operating division to help the licensees meet the duties and obligations established by the licensor; **(b)** the hotel security level was poorly staffed and organized, several CCTV monitors were inoperative, and the director of security exhibited ineffective direction and control; **(c)** unauthorized persons had been on the property, but not challenged by hotel security or hotel employees; **(d)** security directives from the licensor were inconsistently executed.

It was clearly established that the licensor exhibited substantial and material operating control over the security activities at the subject licensed hotel through the executed license agreement requiring the licensee to, at all times, adhere to the operating standards, as well as, numerous system directives, memorandums and other correspondence regarding safety and security. Licensor control was clearly established through the executed license agreement and the dedicated separate licensee organizational structure.

Result: Had the safety and security standards been properly executed, as well as the many safety-related directives from the licensor to all licensees, more likely than not the assault would have been avoided. Case Settled

To Drain Or Not To Drain

Johann F. Szautner, PE, PLS / Civil Engineer

The Problem: Land Development and Highway Construction Projects affect the hydrologic characteristics of any watershed by typically increasing the amount of impervious area and decreasing the time it takes for water to accumulate into concentrated flow. The cumulative effect of alteration of these two hydrologic parameters will increase the flow's volume as well as its peak rate. The magnitude of these increases, if left unchecked, can result in property damage and personal injury. Typical complaints of land owners and highway users are chiefly summarized as follows: **(1)** a diversion of flow from one watershed to another; **(2)** an inadequate collection of surface waters; **(3)** an increased volume of the flow; **(4)** an increased peak rate of the flow; **(5)** the flow obstruction resulting in flooding; **(6)** the erosion and sedimentation; and **(7)** the alteration of the groundwater flow.

With ever increasing development and highway construction, one quickly can understand that the associated increase of complaints will mount in a non-linear correlation. The British humorist, Dave Mitchell, strays not far from reality when he says "There are too many drainage problems, and we don't have enough courts and lawyers to deal with this issue."

The Analysis: It is important for the expert to complete a thorough fact finding analysis and not to accept anyone's preconceived conclusions. It is also not uncommon to find significant discrepancies between design predicted outcomes and field experienced outcomes. Designers need to estimate future development patterns, densities and stormwater management practices; however, these can and often will evolve differently from what was estimated.

Read More Case Studies Online at www.forensicDJS.com

The following gathering of evidence is recommended for a fact-finding analysis: **(1)** mapping documents, including the boundary and topographic surveys, aerial photographs as well as construction surveys, including subsurface explorations; **(2)** hydrologic and hydraulic design computations, including applicable design manuals and regulations issued by governmental approval jurisdictions in effect at the time of design approval; **(3)** documentation pertaining to the maintenance of stormwater management facilities and systems; **(4)** perform a field view as well as take measurements and photographs as required to substantiate your findings; **(5)** documentation pertaining to claim of damages; **(6)** a thorough analysis of all the gathered facts in order to identify the root cause of the drainage issue leading to the claim; and **(7)** specify feasible remedies.

The Laws: Without getting into the nitty-gritty details of federal, state and local laws, as an engineer it is my understanding that under the reasonable use rule, each property owner can legally make reasonable use of his land, even though the flow of surface waters is altered and thereby causes some harm to others. However, liability attaches when this harmful interference with flows of water is "unreasonable." Unreasonableness is determined by the following typical balancing test: **(1)** Was there reasonable necessity of the property owner to alter the drainage in order to make use of this land? **(2)** Was the alteration done in a reasonable manner? **(3)** Does the utility of the property owner's conduct reasonably outweigh the gravity of harm to others?

Seminar Programs

Go to **www.forensicDJS.com** for more information on our seminars, and to review a listing of seminar topics.

- **Keeping Up With Technology: High-Definition Survey, GPS Systems, Electronic Control Modules (BlackBox) and Finite Element Analysis**
- **Expanding Role of the Paralegal / Legal Assistant in the Forensic Field: Working with the Expert**
- **Seeing is Believing: Presenting Your Case in 3D**
- **Product Defect and Safety Issues: A Mechanical Approach to Understanding the Issues**
- **Premise Liability: Engineering Investigation and Analysis**
- **Aquatic Cases: From Beaches to Pools, Lifeguards to Signage: What You Need to Know for Trial.**

Forklift Accident: Perception/Reaction

Stanley D. Pulz, PE, CSP / Human Factors

Case Synopsis: Plaintiff was working as an operations technician. He worked the 4:00 a.m. – 12:30 p.m. shift. At approximately 9:00 a.m. the plaintiff was about to take his break. He walked off a short platform, descended a two step stair system, began to walk to his left just past a stack of corrugated cardboard (which was stacked upon roller conveyors to his left) and then was struck by a five-ton electric forklift driven by his co-worker.

Expert Analysis: A human factors and safety analysis included a review of all relevant depositions and other discovery documents, reports, training records, photographs, etc. In addition, a site visit was performed and a review of relevant research materials, codes, and standards related to perception in applied settings was conducted to determine if the layout of the work area limited the ability of the plaintiff to see and safely respond to the presence of the forklift crossing his walking path. The plaintiff's ability for visual and auditory recognition of the subject forklift prior to and after descending a small flight of steps and beginning to walk to the left, as described in recorded testimony, was influenced by a number of factors related to both visual and auditory cues in the environment: **(1)** The position and height of the corrugated cardboard located between the plaintiff and the subject forklift moving toward him from the left as he was just stepping past the stored corrugated cardboard prevented the plaintiff's visual perception and recognition of the subject forklift. This condition also prevented the forklift driver from seeing the plaintiff. **(2)** The lack of auditory stimuli located within the accident location area due to the noise created by the operation of the plant machinery that was louder than and in combination with the subject forklift motor (which required the plaintiff and other people within that area to wear hearing protection). **(3)** Although there was no testimony that the plaintiff saw the convex ceiling mirror, the mirror, which was located 15 to 18 feet away from the subject stair system, would not have provided useful information to the plaintiff because of its distorting effects regarding size and distance perception. These factors prevented the plaintiff from perceiving and recognizing the subject forklift and prevented the forklift operator from perceiving and recognizing the plaintiff. These factors were outside the control of the plaintiff or the forklift operator.

Result: Analysis of the environmental, individual, and physical factors above indicate the adverse physical and environmental conditions were significant factors of the accident event. Case settled.

Three Significant Shallow Water Blackout Cases Settle

Tom Griffiths, Ed.D. / Aquatic Safety

During early 2010, three separate but similar Shallow Water Blackout (SWB) cases settled in Arizona, Massachusetts, and North Carolina. One involved a physician, one involved an adventure sports enthusiast and one involved a competitive swimmer. All victims were male and all three incidents resulted in death.

Shallow water blackouts can result in drowning due to unconsciousness; however, some result in sudden cardiac arrest due to underlying medical maladies. In all three cases, there was evidence to suggest medical irregularities precipitated the deaths: two victims possessed the abnormal EKG called Long Q-T that is notorious for causing sudden death to swimmers in the water, while the other victim had several medical complications including blocked arteries. In all three cases the victims were holding their breath in the water for extended periods of time and/or distance. Lifeguards were on duty in two cases, while pool attendants without lifeguard certification were stationed on the pool deck in the third case. In each case, the lifeguards/attendants had difficulty determining if the victim was in distress because all three victims were excellent swimmers.

These cases illustrate just how serious prolonged underwater swimming and extended breath-holding can be. Fortunately, preventing these sudden deaths is easy. All prolonged underwater swimming that is competitive, repetive and includes hyperventilation should be banned in swimming pools. Extended breath-holding in swimming pools is dangerous and should not be allowed or condoned under any circumstance.

Child Enters Road from Between Parked Cars… Was He Avoidable?

Steven M. Schorr, PE / Collision Reconstruction Engineer

Case Synopsis: A passenger van was northbound (NB) on a two-direction city street with parking on both sides. A westbound (WB) child pedestrian enters the NB side of the roadway from between parked vehicles [from the van operator's right]. The ability of the van operator to avoid the collision is, in part, a function of how long the child is visible as a hazard about to enter, and entering the roadway. Physical evidence included clothing fibers in the left front headlight housing, "cleaned" areas of the bumper below the left front headlight, and debris indicating that the child was run over by the left front tire. Short tire marks defined the location of the van on the roadway as the operator locked his tires while braking.

Expert Analysis: Utilizing the data, it was determined that the child had traveled approximately 12 feet from the parked vehicles to the point of impact. Testimony established that the child was looking behind him [to the east, the direction he was coming from], calling for his friends to follow him as he walked into the roadway. Based on a typical walking speed for a 7 year-old male child [approximately 4 feet per second], the child was on the roadway, beyond the obstructions created by the parked vehicles, for approximately 3 seconds [12 feet/4 feet per second]. The van operator testified he was traveling 15 miles per hour [22 feet per second]. There was no physical evidence or other data to contradict this testimony. At 15 miles per hour, the van was approximately 66 feet [3 seconds x 22 feet per second] from the point of impact when the child became visible as a hazard.

Result: Since the van could be stopped completely [i.e. perception, reaction and braking] in less than 50 feet, the data established that the child was avoidable had the van operator seen him enter the roadway. It must be noted that if the child had run into the roadway, he would have been visible as a hazard for as little as approximately 1 second. In that case the van operator, even if he observed the child as he entered from between the parked vehicles, would not have been able to avoid the collision.

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

ADDRESS SERVICE REQUESTED

1603 Old York Road
Abington, PA 19001

associates
SRA

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

DJS associates

Fax Back Request Form

to Joy S. Falk, VP Communications and Marketing

at fax # 215-659-7156

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

- ☐ Steven M. Schorr, PE
- ☐ Tom Griffiths, Ed.D.
- ☐ R. Britton Colbert, CHA
- ☐ Michael E. Pliskin, D.D.S, Ph.D.
- ☐ Thomas J. Cocchiola, PE, CSP
- ☐ Phillip J. Calenda, M.D.
- ☐ Stanley D. Pulz, PE, CSP
- ☐ Johann F. Szautner, PE, PLS

☐ Request to receive the curriculum vitae for one of our consultants in a specific area of expertise:

Please state the area(s) of expertise: _____

_____

_____

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

- ☐ Forensic Consulting & Investigations
- ☐ High-Definition Survey (HDS)
- ☐ 24-Hour Emergency Response
- ☐ Educational Programs
- ☐ Expert Network Services
- ☐ 3D Animations
- ☐ Event Data Recorder Download/Analysis
- ☐ Forensic Storage & Technology Center

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

- ☐ Keeping Up With Technology…
- ☐ Expanding Role of the Paralega…
- ☐ Seeing is Believing…
- ☐ Product Defect and Safety Issues…
- ☐ Premise Liability: Engineering...
- ☐ Aquatic Cases: From Beaches…
- ☐ Seminar Topic List for available presentations at your location or ours

Name: _____

Firm Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Fax: _____

E-mail: _____

How would you prefer to receive the information? ☐ **fax** ☐ **mail** ☐ **e-mail**

Additional Case Study on Reverse Side