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Is That How Much I Borrowed from the Company?

L. Erik Ringoen, CPA, CFF, AVB

Case Synopsis: One of the four principals of a company was questioned regarding the allocation of company funds. He was asked to take a leave of absence while a financial forensic investigation was conducted to determine the legitimacy of certain transactions. A third-party neutral to all of the involved parties was engaged by the company's outside counsel to provide assistance with the financial forensic investigation.

Expert Analysis: Interviews were conducted with company personnel to gain an understanding of the business operations, the control environment and assess the quality of the book and records. Documents for a period of five years were analyzed including financial statements, tax returns, trial balances, general ledger accounts, bank reconciliations and canceled checks. Documents and information related to the revenue cycle (i.e. sales, shipping, billing, inventory control, accounts receivable, cash collection), and disbursement cycle (i.e. purchase orders, invoices, receiving, payroll, accounts payable, cash disbursement) among other documents which were also reviewed. Over $4 million of cash misappropriations was identified over the five-year period and consisted of the manipulation of financial information perpetrated by the subject principal through various transactions using income, expense, asset, and liability accounts. A summary schedule was prepared listing the misappropriations by year and as well as by account description, along with underlining supporting documentation. In a meeting with counsel, the summary schedule was presented to the subject principal. He reviewed the schedule and supporting documentation and stated he did not realize the extent of what he referred to as "borrowings" from the company throughout the five-year period analyzed.

Case Result: He was subsequently terminated and removed as principal from the company.

Infotainment: NextGen Technology

Robert Kinder, Jr., BSME

As an alternative to standard AM/FM radios and in-car entertainment units, automakers offer telematic and infotainment systems such as Ford Sync, GMC IntelliLink, and Uconnect. These systems have evolved to be the hub of many vehicle functions. Some systems are capable of storing data such as GPS navigation history, cell phone information, and vehicle associated events. Navigation data can include track logs, recent destinations, and active routes. Cell phone data can be stored when connected to a vehicle via USB port, Wi-Fi, or Bluetooth. Potentially available cell phone data can range from text messages and call logs to emails and social media content. Examples of vehicle events are door openings and light activations. Events can even contain a location and timestamp. Modern forensic software and hardware tools allow for accessible data stored within infotainment and telematic systems to be downloaded.

You Can't Hide Lying Timecodes From These Eyes

Laurence Penn

It goes without saying that surveillance video can be invaluable for determining the circumstances leading up to an accident; but did you know that sometimes what you see might be misleading. There are various factors in a video file that need to be considered and verified before accepting it as an accurate scientific analysis. A couple of these attributes, which can be easily overlooked or altered during video file creation, are frame-rate and timecode.

Video files consist of a sequence of images, or "frames," which display for a certain duration and give the illusion of movement over time. Frame-rate is the speed at which a single image is recorded and played back on a screen, often-times referred to as "fps," or frames per second. Common speeds are 24fps (movies) and 29.97 or 30fps (consumer video, television). Some countries also use 25fps for broadcast video. Surveillance video systems may have the option to record at different speeds, sometimes down to one frame per second, enabling a longer recording duration, and to economize on storage space. Just because a video file says it's a certain frame-rate does not necessarily mean it was recorded in the same manner. For example, a video file may claim to be 30fps; however, when played it displays the same image consecutively two times, in which case the video is captured at 15fps.

To give clear indication of the time recorded, surveillance video will usually include a time-stamp, or timecode. Timecode is typically in the format of hours, minutes, and seconds. Often, fractions of a second, or the frames per second, aren't included in the timecode. These numbers, printed on the footage, may not be accurate due to poor equipment used by the surveillance system itself, or altered via editing software. In one situation, it was observed that surveillance video displayed 40 frames in one second, but then only 20 frames in the next. Clearly, either the timecode was incorrect or the system wasn't recording frames at a consistent frame rate. After further analysis, it was revealed that the printed timecode on the video was incorrect, and had the numbers been used for analysis, would have led to inaccurate results.

Just because you have evidence on video, don't jump to conclusions just yet; it could be relaying inaccuracies about frame-rate or timestamp. A review of potential technical flaws, by a specialist, should be considered and is highly recommended

The Telescopic Boom

John Yannaccone, PE

Case Synopsis: A business owner rented a telescopic boom lift to remove and replace a sign on the front of his building. The rental company delivered the lift to the business and instructed the owner the lift was capable of operating with two occupants and should only be operated on level ground. The owner also received some basic instructions on starting and operating the lift controls. The business owner, and his friend, went up in the telescopic boom lift to remove the illuminated sign mounted on the front of his building. As they unbolted the sign from the building, they positioned the lift up so the bottom of the sign sat on the top platform rail. Their intent was to support the sign on the lift and then lower it to the ground. When they removed the last bolt holding the sign to the building, the lift tipped over causing the platform with the sign and two occupants to fall to the ground. Both occupants were injured due to the fall and the sign landing on top of them.

Expert Analysis: Telescopic boom lifts are capable of supporting a limited load before tipping. The allowable load varies depending on both the extension as well as angle of the boom. The subject lift could be operated at full extension with a platform load up to 500 pounds. The two occupants on the platform had a combined weight of approximately 440 pounds and approximately 20 pounds of tools. They should have been able to safely operate the lift over its full range. However, when they unbolted the 380 pound sign from the building, the weight of the sign transferred to the platform and put the lift in an unstable condition, resulting in the lift tipping over. The occupants of the platform were not using any type of fall protection devices, yet still remained contained within the confines of the platform rails as the lift tipped over. Their injuries were related to the impact of the lift platform on the ground, as well as being struck by the sign when the platform struck the ground.

Result: Since the operating instructions and the placards in the platform clearly explained the need to consider all loads placed on the platform, and not just the occupant loads, no action was pursued against the manufacturer.

Is The Water Quality Where You Swim Safe?

Robert Nuzzi, Ph.D.

As pointed out by Tom Griffiths in the 2Spring/Summer 2017 issue, (www.forensicDJS.com), swimming in the absence of well-trained personnel can be fatal. There was no indication of where the facility in question was located, but, in most areas, poolside surveillance personnel at public facilities must be trained and certified as lifeguards, which includes certification in CPR. What was described (insufficient training, secondary pool duties) would be considered serious violations of the health code and would not require insurance company recommendations for action to be taken as liability would accrue from lack of regulatory compliance. Drowning, while the most visible and ultimate tragedy, is not the most common or identified problem. Water quality issues resulting in illness and death, though not always recognized, are far more pervasive.

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A case in point is the occurrence of legionellosis on a cruise ship that resulted in several deaths. By reviewing the water chemistry data required to be collected by the ship's crew and the physical plant (pumps, filters, etc.), non-compliance for both was well documented. This resulted in verdicts against the cruise line and the designers of the system.

Other illnesses related to water quality have also been documented at swimming facilities including the serious Pontiac fever and pseudomonas pneumonia, and the less serious, self-limiting pseudomonas folliculitis, and ear infections.

Because water quality is so vital, many jurisdictions require pools/spas to be overseen by personnel certified as pool operators who have been trained in the maintenance of safe, healthy water, and who can take steps to avoid problems, recognize when corrective action is needed, and institute such action. As is usually the case, detailed, accurate, and truthful records (falsified records are fairly easy to recognize) of the water quality and actions taken go a long way in preventing liability problems.

Got Nitrogen?

R. Scott King, BSME

Most everyone knows proper tire inflation helps improve tire life, fuel economy, and vehicle handling. Temperature variations notwithstanding, it's likely intuitive that tires generally lose air pressure rather than gain it. Indeed, the National Highway Traffic Safety Administration estimates tire pressure can reduce by up to 5% per month. So where does the pressure go?

Under normal atmospheric conditions, a fully and properly inflated tire represents a pressure difference between it and its surrounding. With higher pressure inside the tire than outside, the air within the tire is literally forced out through microscopic pores in the rubber tire compound. Perhaps one theoretical means of slowing pressure loss would be to eliminate the escape path that the air molecules pass through, or at least make those paths smaller so the air molecule can't fit through them. Unfortunately, the micro-structure of rubber compounds is relatively fixed. But what if tires could be inflated with a gas other than air; something with a larger molecule that can't squeeze through the rubber's porous micro-structure?

Got Nitrogen?

A molecule of nitrogen is indeed larger than a molecule of air, which means that tires remain inflated longer. However, a molecule of nitrogen is also more expensive than a molecule of air, with some shops charging $5.00 or more per tire. Therefore, while the rationale behind the use of nitrogen is valid, whether nitrogen's benefits balance its costs is worth consideration. Perhaps some drivers check their tires only when they appear low on pressure, which is not a reliable indicator, while others may wait until their dashboard Tire Pressure Warning Lamps illuminate. And it's probably universal that all drivers grumble when it comes time to add air to their tires. Finding yourself in either category may mean nitrogen is right for you.

Look! Up in the Sky! Bird? Plane? Drone!

Steven M. Schorr, PE

Unmanned aircraft such as drones are the next level of data collection. A drone can be flown by pre-programmed flight paths, utilizing GPS data and onboard computers, or by a pilot who is on the ground via a simple line-of-sight approach. Drones frequently carry cameras, video cameras, and/or 3D laser scanners into areas not accessible by terrestrial equipment.

The ability of drones to fly over an incident area and/or collect data from otherwise inaccessible areas due to their position or height is unprecedented. When used for professional purposes, ***current Federal regulations require training and proficiency in FAA safety, communication, clearances, and weather***, similar to pilot flight training. ***Data collected by a drone can be converted to accurate 3D data utilizing the proper software.***

However, care must be taken when using drone data in that there can be a substantial difference in the accuracy of 3D models depending on the processing software capabilities. As with all other forms of data collection, there are cross-checks that should be performed to monitor the accuracy of any data and any product created from the data.

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Negligent Entrustment

Berton Grayson

When the accident rate for a very large west coast truck fleet started to rise, action was taken. They learned that better than 80% of all accidents were due to driver error. They hired an outside company to review all driver records before hire, and every six months thereafter. They formed a fleet safety committee to review all accidents whether at fault or not. Additionally, they got monthly reports from the firm doing the MVR checks. Within six months, the picture changed and the accident rate improved.

But they made a critical series of mistakes which cost them multiple millions. A driver received three speeding tickets in 90 days, and this was brought to the committee. The committee notified the driver that he could no longer operate the company pick-up truck. He responded by saying that he would buy his own truck so the company would be able to keep him in his position. This exchange took place on a Thursday, and it was agreed that he would obtain his own vehicle over the weekend and turn in the company unit on the following Monday.

Monday came and went, and no one checked to see if the driver turned in his vehicle. The driver thought the company changed its mind, so he didn't buy his own truck and continued to drive the company truck. A week later disaster strikes. While driving the company truck, he struck another vehicle and caused serious damage to the other driver. She is paralyzed for life.

This lapse in follow through was a major issue. At the deposition, the fleet manager said he couldn't be expected to follow up on every driver when the fleet was so large. Through discovery, there were also copies of letters sent to the driver from the fleet safety committee instructing him to turn in the company truck. A quick settlement was reached shortly after the deposition.

Here are the things that they should have done. The driver should have been barred from driving the minute they reviewed his record. Agreeing to let him keep the truck for a few days and assuming he would turn it in was yet another error. The company should have notified him that his truck is to be turned in immediately, and then follow up to make sure that the truck was in fact turned in. Furthermore, they completely missed the idea that if he would have turned in the unit and driven his own truck, the company would still be liable. The company formed a committee to protect themselves, yet failed to follow the most basic of rules.

"Incidental Contact" At Rink

Alan Caskey, Ph.D.

Case Synopsis: A grandmother was assisting her granddaughter during a friend's birthday party at a local roller skating indoor rink. Near the end of the all-skate period, pre-teen roller hockey players were allowed to skate. The roller hockey players were dressed in their uniforms, padding, and helmets to warm up for a roller hockey game in the next scheduled skate period. Pre-teen hockey players were allowed to skate if they kept the same pace set by the guards and did not skate backward during a general forward all-skate period. During the skate period, the plaintiff was injured by one of the hockey players.

Expert Analysis: The Roller Skating Rink Operators Association of America (RSROA) has established standards for safe roller skating rink operations. The RSROA's standard for rink operations calls for a skate guard to be present on the floor to supervise the skaters. In this incident, the skate guard assigned to the rink at the time of the impact injury was off the skating floor in a separate party room.

The RSROA has sponsored "Incidental Contact" liability immunity for roller skating rinks in some states. "Incidental Contact" generally means skaters skating in the same direction at relatively the same speed either both forward skating or backward skating and not intentionally impacting another skater. The arguement made here was that pre-teen roller hockey players are trained to skate "full out" when in uniform. Based on that arguement being accepted, more likely than not, the incident would survive a "Incidental Contact" summary judgement motion.

Case Result: Case settled.

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