

ACTS FACTS

THE MONTHLY NEWSLETTER FROM
ARTS, CRAFTS AND THEATER SAFETY (ACTS)

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ACTS wishes you a healthy, happy 2009

BOARD of DIRECTORS: Monona Rossol, Tobi Zausner; Eric Gertner,
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23 YEAR ANNIVERSARY OF ACT FACTS

At age 23 years old, *ACTS FACTS* is still going. And if you have gotten this newsletter, you know that the subscription price is now \$25 domestic, \$28 for Canada and Mexico, and \$30 for all other countries. We are pleased that a number of people tied in multiple years at the old price.

In any case, your small subscription fee enables us to break-even on the newsletter's expenses--which is all we ask. In a sense, you enable us to keep in touch with all of you without taking resources from ACTS' other projects. And many of our articles were written in response to clippings you sent us or from comments in your calls, e-mails, and hand written notes on your renewal blanks. We think of the newsletter as a joint venture with you. Keep in touch.

ARTIST/TEACHER/ELECTRICIAN KILLED ON THE JOB

SOURCES: <http://www.ibew46.com/kat.html>, <http://www.kirotv.com/news/18027219/detail.html>

The International Brotherhood of Electrical Workers (IBEW) Local 46 carried an obituary for one of their workers on their web site for Kat Engnell who was killed at work on November 20, 2008.

Kat Engnell was an amazing woman. Originally from the South, Kat moved to Seattle after receiving her Masters Degree in Fine Arts. She bought a beautiful home in Seattle's Columbia City neighborhood, and being ready to pay some bills, she decided to become an electrician and started attending the apprenticeship program in 2000.

Kat was the most humble, hard working, serious electrician anyone ever worked with. She worked with a lot of Local 46 hands, and despite her qualities, she was laid off numerous times for being a 5' 2" woman with a couple of grey hairs. Diversity and full inclusion in the electrical industry were passions of hers. The fact that a scholarship for those seeking to become Union Trades people is being funded in her name testifies to that.

Her interests included kayaking, raising hens, collecting antiques, creating and teaching art, politics, unionism, and rocking out to hippy music. If there was a party, Kat was there having a good time. She was a fantastic mechanic, intellectual, and a bohemian all in one.

According to the IBEW, Katherina E. Engnell was working the day shift at the

....Saint Gobain glass plant. She was up on a metal platform, like a catwalk, doing lighting maintenance. It is normal to work on equipment up there while it is still 'hot', unfortunately, while Kat was changing out a 500W 120V fixture, after making sure that the ground and neutrals had both been made up, she was electrocuted and died.

COMMENT. This story is disturbing because it should not be “normal” to work on energized equipment especially when standing on a metal floor. According to the OSHA General Industry standards, 1910 subpart S, 1910.333(a)(1) says “Live parts to which an employee may be exposed shall be deenergized before the employee works on or near them....” This does not apply to circuits of 50 volts or less, but Kat was working on a live 120 volt line.

Further, 1910.333(a)(2) says “If the exposed live parts are not deenergized (i.e., for reasons of increased or additional hazards or infeasibility) other safety-related work practices shall be employed...” And 1910.335(a)(1)(i) says “Employees working in areas where there are potential electrical hazards shall be provided with, and shall use, electrical protective equipment that is appropriate for the specific parts of the body to be protected and for the work to be performed.”

This protective equipment could include insulating gloves, non-conductive work shoes, and insulated tools. The National Fire Protection Association’s electrical standard (NFPA 70E 2009 - Table 130.7(C)(9)) says that electrical equipment rated at 240 volts and below which are energized should be worked on and tested while wearing rubber insulating gloves and insulated tools. Many electricians, including those in theater, do not wear protective clothing as often as they should. And in this case, it probably would have saved a valuable and interesting life.

SUICIDE ON STAGE WAS ALMOST REAL

Sky News, <http://uk.news.yahoo.com/5/20081210/twl-actor-in-neck-slash-stage-horror-3fd0ae9.html>, 12/10/08 & www.time.com/time/world/article/0,8599,1865886,00.html

Daniel Hoevels, 30, an actor playing a role in Friedrich Schiller's *Mary Stuart* at Vienna's Burgtheater in Austria, was to end his part in the play by committing suicide with a knife. He pulled the blade over his throat and collapsed with blood pouring from his neck. But when he failed to respond to the audience's enthusiastic applause for the show's spectacular special effects, they realized something had gone very wrong.

Hoevels had used a real blade instead of a stage knife. He was taken to hospital. "If Hoevels had hit an artery or cut only slightly deeper, he would have died on stage," a doctor reportedly said.

Police investigated whether the mix-up was murderous. Officers entertained the possibility that a jealous rival may have switched the blades. However, it appears it was not foul play but a foul up. The knife had been bought at a local store and it seems that the props staff forgot to blunt the blade. "The knife even still had the price tag on it," said a police investigator.

The actor recovered after emergency treatment and even appeared on stage the next night with a bandage around his neck. Hoevels is now preparing for the title role in Goethe's *The Sorrows of Young Werther* in which he ends up shooting himself in the head. Someone should check the gun.

COMMENT. Last month we reported on a person who shot himself to death with a gun firing blanks. This month, an actor cuts his own throat. It would seem that there is room for improvement in safety procedures and training for use of stage weapons.

The Theatre Video Arts Library has these kinds of training videos and DVDs. A 40 minute presentation called FIREARM SAFETY ONSTAGE with Robert Chambers is available for \$129. There are also presentations on general safety called PLAY IT SAFE and three videos on combat for the stage and screen. Information is available at www.theatreartsvideo.com.

RESEARCHERS LINK ORGANOPHOSPHATES TO DIABETES

BNA-OSHR, 38(46), 11/20/08 p. 901

Scientists at Duke University said in a recently published study that exposure to organophosphate pesticides early in life may play a role in the increasing the incidence of obesity and diabetes. "Our results point to a lasting metabolic dysregulation as a consequence of neonatal parathion exposure," they said in a study, *Exposure of Neonatal Rats to Parathion Elicits Sex-Selective reprogramming of Metabolism and Alters the Response to a High-Fat Diet in Adulthood*.

While most of the investigation of organophosphates focuses on the chemicals' neurological effects, the compounds "obviously have other important targets that contribute to morbidity, including metabolic effects that can have a potential impact on obesity and diabetes," according to the study. The research was published in the November issue of *Environmental Health Perspectives* available at <http://www.ehponline.org/members/2008/11673/11673.pdf>

RATS GIVEN DIFFERENT DOSES. The seven-week experiment involved giving the insecticide parathion to laboratory rats during the first four days of their lives at doses of 0.1 or 0.2 milligrams per kilogram of body weight per day [mg/kg/day]. These doses fall just below and just above the threshold for detecting inhibition of the enzyme cholinesterase—which helps the nervous system to function—and creates the first signs of systemic toxicity, according to the study.

MALE FEMALE REACTIONS DIFFERED. After reaching adulthood, the rats were given either standard lab food or switched to a high-fat diet, the study said. Male rats on a normal diet and the lower dose of parathion gained weight and showed signs of a prediabetic state, including elevated glucose levels and impaired ability to break down fat. At the higher dose, they lost weight and exhibited further metabolic defects, the study said.

Female rats on the normal diet seemed more susceptible to metabolic problems and lost weight at both doses of parathion. However, on a high-fat diet, females given the 0.1 mg/kg/day dose of pesticide increased their weight by nearly 30 percent by the end of the study, compared to a 10 percent gain for male rats, according to the research paper.

DISCUSSION. Researchers noted that the action of organophosphates on metabolism has been overlooked until now. Their research showed that neonatal low-dose parathion exposure disrupts a body's ability to regulate glucose and fat "in a persistent and sex-selective manner." More over is was noted that it is likely that different organophosphates may have very different effects on metabolism which makes it difficult to find out what this class of chemicals can do to the human body.

ACTS would remind readers that there are roughly 100,000 chemicals used in commerce of which about 900 have been tested for cancer and about 300 assessed for reproductive effects. None of these chemicals (except the ones in this study) have been studied for metabolic effects after low level exposure early in life. There are probably 100,000 surprises out there for us. We are really clueless about this swamp of chemicals through which we slog.

BALLERINAS' HAIRSPRAY TRIGGERS THEATER EVACUATION

New Zealand Herald, www.nzherald.co.nz/nz/news.com, 12/9/08

About 1500 people were evacuated from the Regent theatre at Palmerston North, New Zealand during a Maureen Ax School of the Dance's performance of *Sleeping Beauty* when a cloud of hairspray set off a backstage smoke alarm. A Fire Service senior station officer was quoted saying: "If you stand in a room with 20 girls in tutus spraying hairspray around and you open the door and a big cloud of hairspray vapour goes out, it can set off smoke alarms." Anyone who doubts that dancers' exposure to hairspray chemical mists is excessive should take note.

CONTINENTAL WOODCRAFT CITED FOR GUARDING VIOLATIONS

BNA-OSHR, 38(48), 12/4/08, p. 944

The employer is contesting an Occupational Safety and Health (OSHA) serious citation and a \$9,325 penalty of the alleged violation of eleven items, including: failure to guard circular hand-fed crosscut table saws with an automatically adjusting hood which completely enclosed the portion of the saw above the table and above the material being cut (1910.213(d)(1)); failure to ensure that nonworking portions of the blade of bandsaws were enclosed or guarded (1910.213(i)(1)); and failure to ensure grounded conductors were attached to terminals or lead so as to reverse designated polarity (1910.304(a)(2)).

The employer is also contesting an other-than-serious citation without penalty for the alleged failure to ensure Appendix "D" of the standard was provided to employees using respirators on a voluntary basis (1910.134(c)(2)); and failure to ensure that portable fire extinguishers were visually inspected at least monthly (1910.157(e)(2)).

COMMENT. These guarding and electrical violations and the failure to provide Appendix D to workers voluntarily wearing respirators are common violations I see in school and college shops. And now, failure to provide Appendix D may be cited on a per employee basis—see next article.

OSHA PPE RULE OUT AT LAST

73 FR 75568-75589, December 12, 2008

OSHA has clarified their personal protective equipment (PPE) rules by amending several standards to include identical wording. The new wording makes it repetitively clear that employers must provide respirators and other protective equipment to every employee along with the training to use PPE properly. Employers can be cited for failure to provide PPE and/or the training on a per employee basis. According to the new rules, each employee that is not provided with PPE and/or training "may be considered a separate violation subject to a separate penalty."

Except for certain types of footwear and clothing, the PPE must be provided free to employees. The training must be on paid time. The requirements apply to all workers including part time and short-term hires. Schools, theaters, shops, film production companies, and many other art and entertainment businesses need to budget for equipment and training. Schools could avoid some of these costs by searching for art and theater materials that do not require respiratory protection such as water-based paints, ferric chloride etches, cadmium- and lead-free glazes and solders.

ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many technical, health, art, and theater publications. ACTS' financial support is primarily earned income from industrial hygiene services, lectures, and courses. Other income is from sale of publications and unsolicited donations from individuals and foundations. ACTS takes no money from industry or any party having a financial interest in our opinions about art products.

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PERFORMER DIES IN FALL DURING CHURCH CHRISTMAL PLAY

SOURCES: *Cincinnati Enquirer*, Life Style section 12/16/08 & front page 12/19/08 & numerous TV and newspaper article from 12/17 to 12/21/08.

Keri Shyrock,* a graduate of Bowling Green State University who was working on a master's degree in education at Xavier University in Cincinnati, volunteered to play a part in a Christmas show. The show, called *Awaited*, was being held at the Crossroads nondenominational mega-church in Oakley, Ohio, near Cincinnati. On opening night, December 17th, 23-year-old Keri Shyrock and two other performers were making an ascent on ropes in a symbolic portrayal of the journey of three wise men to Bethlehem. Suddenly, Shyrock slipped from her rope and fell headfirst 20 to 25 feet to the concrete floor. She died almost instantly.

THE CAUSE. The Cincinnati police completed their investigation in about a day. They concluded the fall was the result of a harness failure, but provided no details about the failure. The Hamilton County Coroner's Office investigated the cause of death, but did not address the reason she fell. And since Shyrock was a volunteer, Dick Gilgrist, area director of the Occupational Safety and Health Administration concluded they had no jurisdiction to investigate. Gilgrist said, "I equate it to someone going to one of these rock climbing walls and falling; it's totally a civil matter."

Trying to find information about the harness and the direct cause of this accident was frustrating. Only bits of information were scattered in many articles about the tragedy. For example, Natalie Hastings, a spokeswoman for the church said, "I know the performers wore some kind of harness and they got some professional training especially to do this." Others were quoted saying that the harness was a rock climbing harness instead of a performer's flying harness. Still others thought that part of Keri's costume was caught in the carabiner that attached her to the steel cable.

ATTITUDE. The general attitude about safety at the church is also unknown. But a clue might be found in a *Cincinnati Enquirer* Life Styles profile of Brian Tome, the Pastor of the 10,000-member church. He was portrayed as a Harley-riding, multi-task-loving, beer drinking, and occasional cigar-smoking risk-taker. For example, the article said he doesn't wear a helmet when he rides his Harley and doesn't worry about it. This profile was published only one day before Shyrock's accident.

In a statement made after the accident, the Pastor said he was concentrating his efforts on comforting Keri's parents. In fact, Keri's parents reportedly asked the church not to cancel the show. It would appear that they do not hold the church responsible for the accident.

COMMENT. If Shyrock was a paid performer or if her parents pursued this as a legal matter, the details of the cause of her accident would be investigated and the information could be used to prevent other accidents. As it stands, we will probably never know why this happened.

* Note that most of the articles spelled Keri's name, "Shryock." However, it appears that her name was commonly misspelled and should be Shyrock.

CPSC'S LEAD & PHTHALATE LAWS AMENDED

SOURCES: 73 FR 77492-77493; Dec 19, 2008, BNA-OSHR 36(41), 10/20/08, pp. 1037-1044;

http://www.washingtonpost.com/wp-dyn/content/article/2008/09/24/AR2008092403344_pf.html; & CPSC Press

Release #09-086, January 8, 2009

LEAD. The passage on August 14, 2008, of the Consumer Product Safety Improvement Act (CPSIA) forced the US Consumer Product Safety Commission (CPSC) to amend its regulations concerning the ban of lead-containing paint and certain consumer products bearing lead-containing paint effective as of August 14, 2009. Under the current regulations, 16 CFR 1303.1 defines as “banned hazardous products” certain products, toys and other articles intended for use by children and certain furniture articles on which the paint contains lead in excess of 0.06 percent of the weight (or 600 parts per million - ppm) of the total nonvolatile content of the paint or the weight of the dried paint film. But now, section 191(f)(1) of CPSIA mandates a reduction in the lead limits in paint on the following schedule:

on February 10, 2009	the limit is	600 ppm (0.06 % - calculated as weight % of lead)
on August 14, 2009	the limit is	300 ppm (~0.03 %)
on August 14, 2011	the limit is	100 ppm (0.009 %)

These levels apply to the date products are sold, not the date they were manufactured. So products made before these periods are retroactively subjected to the various limits.

PHTHALATES*. As of February 10, 2009, it will also be unlawful for any person to manufacture for sale, distribute in commerce, or import, any children’s toys or childcare articles that contain the phthalates called DEHP, DBP, or BBP* at levels higher than 0.1 percent. The legislation further bans from any children’s toy that can be put in a child’s mouth or childcare articles the phthalates called DINP, DIDP, and DNOP* at levels higher than 0.1 percent.

This should not be a problem for most artists and craftspeople since they rarely use phthalate-containing plastics. However, the polymer clays (e.g., Fimo, Sculpey, etc.) which may contain from 3 % to 14 % phthalates should be labeled “keep out of reach of children” if they contain any of these phthalates. Some elementary schools use polymer clays in art projects.

TESTING. The legislation requires that every manufacturer of a product subject to a CPSC rule provide a “General Conformity Certificate” to certify, based on unit testing or a reasonable testing program, that the product complies. Included in the testing requirement are children’s products including cribs and pacifiers, small parts on wooden or metal toys and dolls, metal jewelry, baby bouncers, walkers and jumpers.

The testing certificate must be in English, list the name, address and phone number of the manufacturer, importer, and/or private labeler and any third party testing facility, list the date and place of manufacture and date and place of testing, list the contact information of the record keeper, and list each applicable rule, standard, and ban. These certificates must accompany the product through the distribution chain from source to retailers.

PENALTIES. The Act imposes or increases both fines and jail time penalties and mandates coordination with the CPSC when effecting a manufacturer’s product recall. The law increases civil penalties for failure to report possible product hazards to the CPSC in a timely manner from \$5000 per violation with a cap of \$1,825,000 to \$100,000 per violation with a cap of \$15 million.

ENFORCEMENT. The law allows states to set standards that are even stricter such as those in California and Illinois. In addition, the law has an unusual mechanism that “deputizes” individual state attorneys general by granting them authority to sue in federal court under CPSC jurisdiction, subject to intervention by the CPSC itself. While ACTS can only speculate on whether states will exercise this option, we can surmise that states could actually support their enforcement activities with fines and settlements similar to the way Proposition 65 fines support California’s enforcement.

Enforcement will proceed even though the outgoing Bush Administration blocked the CPSIA provisions funding a much larger staff and enforcement activities. It does not cost the CPSC anything to institute the new limits on lead and the phthalates.

RESALE & USED PRODUCTS. Provisions for resale outlets are so important, I have quoted the CPSC’s press release and underlined vital information:

The new safety law does not require resellers to test children's products in inventory for compliance with the lead limit before they are sold. However, resellers cannot sell children's products that exceed the lead limit and therefore should avoid products that are likely to have lead content, unless they have testing or other information to indicate the products being sold have less than the new limit. Those resellers that do sell products in violation of the new limits could face civil and/or criminal penalties.

When the CPSIA was signed into law on August 14, 2008, it became unlawful to sell recalled products. All resellers should check the CPSC Web site (www.cpsc.gov) for information on recalled products before taking into inventory or selling a product. The selling of recalled products also could carry civil and/or criminal penalties.

Recycling and resale groups must check the recall status of all items they accept and they must not accept children’s items without evidence that the lead and phthalate limits have been met.

ARTISTS & CRAFTSPEOPLE. The law affects all makers of children’s articles including artists and craftspeople. Unless these individual small manufacturers can afford to test their products, they would do well to avoid the children’s market.

* Phthalates are added to plastics to make them pliable. DEHP=di-2-ethylhexyl phthalate, DBP=dibutyl phthalate, BBP=benzyl butyl phthalate, DINP=diisononyl phthalate, DIDP=diisodecyl phthalate, DNOP=di-n-octyl phthalate. California also regulates DnHP=di-n-hexyl phthalate. Other untested phthalates may legally be used in children’s products, but ACTS thinks the whole class should be eliminated.

2 ART STUDENTS FACE FELONY CHARGES IN GRAFFITI SPREE

SOURCE: *Pittsburgh Post Gazette*, by Dennis B. Roddy, 12/14/08

Two students at the Art Institute of Pittsburgh are facing felony charges in connection with what police describe as a year-long graffiti spree that caused more than \$94,000 in damage. According to a detective’s account, the felony charges followed the graffiti equivalent of leaving a business card at the scene of a burglary. The detective said the spray-painted graffiti designs were signed with their tag names which were in a city vandalism data base. The clincher came when the two students shoplifted an etching pen and one of them drew his graffiti tag on the shelf in the store they robbed!

The students, who were identified as Bryan Stafford and Terrell M. Crawford, both 19, were being held in the Allegheny County Jail on both shop lifting and vandalism charges. Pittsburgh hopes these tough consequences will deter others and has been cracking down on graffiti vandals over the past year. In July, Daniel Montano, another graffitiist, was sentenced to 2½ to 5 years in state prison after pleading guilty to 79 counts of criminal vandalism.

COMMENT. Some people consider these young men “artists.” But these artists force us to look at their “art” and to pay for the damage it causes. Every day I leave my building though a glass door that was tagged permanently with glass etch the night after it was installed. Our roof, walls, and halls have been tagged and repainted repeatedly at the Co-op’s expense. Go get ‘em Pittsburgh.

SHOP TEACHER BURNED IN PARTS WASHER ACCIDENT

http://www2.worksafebc.com/i/posters/2008/ha2008-24_washer.html

<http://www.ccohs.ca/newsletters/hsreport/issues/2009/01/ezone.html#hazardalert>

A British Columbia shop teacher was cleaning a lawn mower part in a mechanical parts washer. The parts washer was designed for a water-based cleaning solution, but had been filled with a petroleum-based combustible solvent instead. A plugged drain in the washer resulted in a low level of solvent in the reservoir, which allowed the immersion heating element to become exposed. The solvent burst into flames, causing an explosion. The teacher used a chemical extinguisher to smother the burning solvent, but his shirt caught fire and he sustained first-degree burns.

COMMENT. I often recommend recirculating parts washers for cleaning paint brushes, printmaking plates, and the like. Good water-based washer fluids have been available since California banned solvent parts washing some years ago. These water-based solutions contain some solvents, but they will not catch fire. And they don’t need as much ventilation as solvent-based fluids.

SIX FOUNDRY WORKERS INJURED IN EXPLOSION

Boston Globe, 1/13/09

Dozens of workers at a Braintree, Massachusetts, foundry scrambled for the exits on January 12th after an explosion blew out most of the building’s windows, started a fire, and filled the air smoke and dust. Six workers suffered minor injuries, most of them respiratory, according to authorities.

The accident occurred when molten metal was being poured from the furnace into a ladle and some of the metal splashed into cold water in a nearby holding tank. Fire fighters had to be careful not to put water on the roof directly above the blast area because it could trickle down into the molten metal and trigger another explosion.

COMMENT. The combination of molten metal and water is a well-known explosion-hazard. And yet, I have witnessed occasions when it has been difficult to convince local building authorities not to require a fire suppression sprinkler head near a sculpture foundry furnace.

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many technical, health, art, and theater publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce; Staff: John Fairlie, OES.

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OSHA v. ATLANTA BALLET CONTESTED CITATION SETTLED

Sources: US Occupational Safety and Health Review Commission, Region IV, Secretary of Labor v. Atlanta Ballet, Inc., OSHRC Docket No. 08-0817, Inspection No. 310957295, Stipulation of Settlement and Joint Motion for Approval, signed 2/6/09; *ESTA Newsletter*, Vol 13, No. 3; & *The Atlanta Journal- Constitution*, 2/06/09.

In 2007, the Occupational Safety & Health Administration became interested in an accident at the the Fox Theater in which a 17-year-old volunteer dancer in a production of the *Nutcracker* fell 12 feet into the orchestra pit sustaining serious spinal injuries. OSHA cannot pursue the dancer's accident because she was not an employee, but observation of a subsequent production showed that professional employed dancers were coming closer than 6 feet to the edge of the stage in violation of fall protection rules. OSHA cited the Ballet for failure to protect their dancers.

OSHA cited the Ballet and assigned a \$3500 fine which they contested. On February 6, 2009, OSHA withdrew the fine pending compliance with a settlement stipulating that the Ballet will:

(a) include the following language in its Dancer's Handbook, under the title "Rehearsals/Safety Measures": "One of the most important aspects to being a professional dancer is to be aware of where you are on the stage, which serves as a safety measure. Prior to moving onto the stage dancers will rehearse for weeks, sometimes months in large productions, with regards to their spacing and responsibilities on the stage. The floors in the studio will be marked with tape or other marks that correlate to the lights at the stage's edge. Dancers will be well versed in center and quarter marks and where they need to be at any given time in the choreography and musical cues. Dancers will also be taught what wing to align with and where the boundaries are with regards to the downstage edge of the stage and where the upstage drop will be placed. Dancers will be required to work in costumes if they are different from normal dance attire."

(b) Investigate the feasibility of adding to the number of LED lights currently utilized at the edge of the stage during the performance of the "Nutcracker" at the Fox Theater, in Atlanta, Georgia.

OSHA gave the Ballet 30 days from Feb 6 to provide a revised Dancers Handbook and to report on the inquiry to use additional LED lights at the edge of the Fox Theater. The Ballet's report must include the names of all persons who investigated the feasibility of the use of additional LED lights.

ESTA RESPONDS. This case was watched intensely by the theater community because of the absence of specific guidance by OSHA on this issue. OSHA has said that a guard rail at the lips of stages is not practical, but that the fall protection regulations nevertheless apply.* The Entertainment Services and Technology Associations, a standard setting group, addressed this issue in their February newsletter. ESTA advised theaters to do "what ever works!" The article explained:

The hazard presented by an open orchestra pit is obvious. We've all either seen someone fall into the pit, or heard stories—and never is the story one where the fall was anything less than

crippling and expensive. An employer has a legal responsibility to do something to make such an occurrence impossible or at least highly unlikely, and would be wise to document the steps taken to reduce this obvious risk, both to show due diligence and to help assure the risk-mitigating steps will be done as planned.

Some people have successfully argued that the training of the performers and careful blocking by the director or choreographer to keep the performers a safe distance from the edge (a situation analogous to leading edge work in construction) constitute fall protection. However, that doesn't always satisfy the local inspector, particularly if this is the fall protection plan and he's reviewing it because someone fell into the pit. In any case, if this is the plan, there needs to be some other means to keep people out of the pit while the performers are rehearsing. If they are rehearsing, they are not yet trained, so their training will not protect them. Certainly, careful blocking and rehearsal won't work as the fall protection plan for workers loading in or striking a show.

If training and blocking are not effective protective measures, what's left? Guardrails, harnesses and lanyards, nets, giving up 6 feet of down stage area, or something else—anything that works.

Nets are not the only solution, but they have been used in some venues successfully. They require no special training, they don't block the audience's view, and they don't block the sound from the orchestra. Nets also keep dropped hand props from rolling into the pit and hitting a musician. That's probably less injurious than a performer going over the edge but a hand prop landing on a musician stops the show just as effectively.

ACTS' POSITION. The Atlanta decision, the ESTA newsletter, and a slew of pitfall lawsuits we have reported in *ACTS FACTS*, all dictate that every theater company **MUST** have a written fall protection program to address the edge of the stage in a formal way. Nets are the most fool-proof solution. OSHA-compliant and fire-proof nets can be provided by companies such as InCord.**

LED wire along the front of the stage that is hidden from the audience view but clear for performers to see is another partial solution. LED positioning lights on curtain legs or certain scenery elements can also be helpful in helping dancers and actors orient themselves—especially during black outs.

California requires temporary rails during rehearsals when falls from sets are possible. And ACTS recommends temporary rails at the lips of all stages to be set in place during those times when the stage is not in use for performance, during most rehearsals, and whenever untrained people access the stage such as tour visitors, docents, and maintenance workers. These rails must be OSHA-compliant, that is, must be 42 inches high with a mid rail or chain and be able to withstand 200 pounds of force on the top rail in all directions.

The Atlanta Ballet also agreed to rehearse in costumes if these costumes “are different from normal dance attire.” This provision addresses the fact that the young high school student dancer who fell into the pit was wearing a vision-restricting panda-head costume. All theater companies must be on notice that the next time a performer wearing such a costume falls into the pit you can be sure the amount of time they rehearsed in that costume and the details of the company's written fall protection program will be at issue. Business as usual is over.

* OSHA letter of interpretation, January 28, 1997, http://www.osha-slc.gov/OshDoc/Interp_data/119970128.html

** InCord, 226 Upton Road, Colchester Ct 06415, 860-537-1414, www.InCord.com.

Note: I was a paid expert for the Department of Labor, OSHA in this case.

DECISION AGAINST VANDERBILT TALC UPHELD

Com. of KT Court of Appeals, No. 2007-CA-002103-MR, 2/6/09

In a decision rendered February 6, 2009, the Commonwealth of Kentucky, Court of Appeals, affirmed the \$4,909,000 judgement awarded to Johnny Franklin as the administrator of the estate of Flora Franklin for her death cause by exposure to asbestos. Flora Franklin was exposed to asbestos from the clothes Mr. Franklin wore during his work at General Electric and during her own employment when she was exposed to RT Vanderbilt talc at Florida Tile from 1968 to 1973 and General Electric Plastic where she worked from 1973 to 1999. The jury assessed damages of \$5,200,000, allocated 70% of the fault to Vanderbilt, and awarded \$450,000 in punitive damages against Vanderbilt. *ACTS FACTS* covered this trial in May 2008. And now the award is affirmed.

ACTS' POSITION ON SAFETY INCENTIVE PROGRAMS

BNA-OSHR, 39(5), 1/29/09, p. 76

After years of looking at programs which provide rewards for employers or employees who have low accident rates, we have decided that these programs are too often detrimental. For example, on January 22, Stone & Webster Construction, a contractor to the Tennessee Valley Authority, paid \$6.2M to settle charges it falsified safety records with the US Attorney for the Eastern District of Tennessee. S&W failed to maintain required safety logs and gave false information about employee injuries in order to receive pay under its contract that was tied to employee safety goals. S&W admitted no wrong-doing claiming they were unaware their records were in error.

This is one of hundreds of similar stories we have seen over the years. Safety incentives provide motives for both workers and employers to cover up accidents. Yet many state bidding procedures require these low accident rates. A better way to check a company's compliance with safety regulations would be to inspect their OSHA 300 accident logs, safety training records (dates, list of attendees, tests, etc.) for all applicable types of worker training (forklift, ladder, hazcom, etc.), and review the qualifications of the training staff and program managers. Any safety professional should be able to evaluate these records easily. And forging this massive amount of paperwork would be as daunting as actually carrying out the training.

OSHA-CERTIFIED TRAINER SELLS TRAINING CERTIFICATES

Daily News, Greg B. Smith, 2/3/08

Until his arrest last fall, Larry Fontanez was a certified trainer, approved by the U.S. Occupational Safety & Health Administration to teach 10- and 30-hour construction safety classes. The classes became extremely popular after New York City passed a law requiring all hardhats working in buildings that are more than 15 stories high to take at least the 10-hour course by July.

Early last year, a School Construction Authority investigator posed as a worker began looking for fake cards. It didn't take long for him to find Naveed Khaliq, an estimator for a major New York contractor, Plaza Construction, prosecutors say. Khaliq offered to sell OSHA 30 cards for \$250 - a steep discount from the \$500 charge to take the actual class. The cards were signed by Fontanez.

In addition, the *Daily News* exposed a safety class held in a Bronx bar that promised 10 hours of intensive training. It lasted just over two hours and didn't cover most of the required subjects.

COMMENT. The incentive to buy phony training cards is especially strong for workers who don't read well due to a faulty education or language barriers. Yet untrained workers make construction sites hazardous. Authorities should randomly monitor a small percentage of training sessions to ensure quality. And perhaps, the test should be administered by someone other than the instructor.

CHEMICAL CLUES TO THE STRADIVARIUS SOUND

C&EN, 2/2/09, p. 29 & PloS One, DOI:10.1371/journal.pone.0004245)

Scientists have long puzzled over why violins and cellos made by the 18th century masters Antonios Stradivari and Joseph Guarneri del Gesu of Cremona, Italy, sound so superior to other instruments. Various theories claim it's the wood, the varnish or the glue. But Joseph Nagyvary, a biochemistry professor emeritus at Texas A&M University and violin maker, argued for decades that chemical treatments used to protect the wood from worms and fungus are the real source of the famed sound.

Now, Nagyvary and two of his Texas A&M colleagues have evidence to support that argument. The three scientists used electron imaging, X-ray methods, and other techniques to examine samples from four instruments made by Stradivari and Guarneri, as well as instruments made during the same period in other parts of Europe. Their research determined that the Cremonese instruments "showed the unmistakable signs of chemical treatments in the form of chemicals which are not present in natural woods." The chemicals identified include borax, barium sulfate, calcium fluoride and zirconium silicate. The three colleagues suggest that untreated, natural wood probably is not the material for violin makers to use when trying to duplicate the Cremona sound.

CELLO DISEASE A HOAX

<http://www.the-scientist.com/news/display/55383/> [Published 28th January 2009 03:46 PM GMT]

Over 30 years ago, Elaine Murphy, then a professor at Guy's and St Thomas' Hospital in London, read an article in the British Medical Journal (BMJ) describing cases of "guitar nipple," a skin condition seen in three young girls learning to play classical guitar. Thinking this was a funny hoax, Dr. Murphy wrote a letter to the Journal which was also signed by her husband John. In part, the letter read, "I did once come across a case of 'cello scrotum' caused by irritation from the body of the cello. The patient in question was a professional musician and played in rehearsal, practice, or concert for several hours each day." To the pair's surprise, the letter was accepted by the BMJ and published in the Journal's May 11, 1974 issue.

Over the years, "cello scrotum" has been mentioned in the literature along with "cellist's chest" and "cello knee," conditions that really do exist. Then in the January 2009 BMJ, Murphy and her husband wrote, "Perhaps after 34 years it's time for us to confess that we invented cello scrotum." They explained that they had assumed that "[a]nyone who has ever watched a cello being played would realise the physical impossibility of our claim."

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many technical, health, art, and theater publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce; Staff: John Fairlie, OES.

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MUSEUM WORKER v. SMITHSONIAN: ASBESTOS AT ISSUE

<http://www.washingtonpost.com/wp-dyn/content/article/2009/03/14/AR2009031402177.html>; *Washington Post*, James V. Grimaldi & Jacqueline Trescott, 3-15-01; A01 & C01; KEM, Inc., J. Brent Kynoch, President, 12-2-08; BNA-OSHR, 39(13), p. 241, 3-26-09

ASBESTOS awareness training is required by the Occupational Safety and Health Administration (OSHA) for all workers in buildings where asbestos exists—even when it is contained and considered safe! Training is required because the asbestos may be disturbed by maintenance work or accidents. This training has been required since 1995, but the first recorded training at the Smithsonian's Air and Space Museum (ASM) occurred about a year ago--March, 2008. At this training Richard Pullman first heard that there was asbestos in the museum walls.

Pullman is a 53-year-old lighting specialist who has worked in the building for 27 years. He frequently cuts into walls to install and update ASM lighting effects. Within weeks, Pullman gathered internal documents and filed two federal workplace safety complaints. And because he'd been experiencing shortness of breath, he went to see a lung doctor, who diagnosed asbestosis, a lung disease linked to asbestos fibers in the lung.

ASM officials acknowledged the presence of asbestos but said their tests showed there was nothing harmful in the air. The US Department of Labor's workers' compensation denied one of Pullman's complaints in January of 2008 and the other in September, 2009. The report said that asbestos could have been disturbed in the walls but concluded that "there is no medical evidence that provides a diagnosis which could be connected to the event." Yet one of Pullman's doctors, Michael Harbut, a Wayne State University physician who co-wrote the American Thoracic Society's criteria for diagnosing asbestosis, told the *Washington Post* that the facts of Pullman's case lend support to his claim that his diagnosis is work-related. Pullman is appealing the denial.

In October, a month after the denial of this claim, Pullman spent thousands of dollars to hire J. Brent Kynoch, an environmental engineer, to secretly collect and test samples of the dust behind walls and in false ceilings that accumulated from years of cutting into walls without dust control. Kynoch reported that his results showed that asbestos had been mishandled over the years and had "likely resulted in exposures to workers and the public."

OSHA also has not been very helpful. Pullman contacted OSHA shortly after he learned of the asbestos. OSHA met with Pullman's supervisor and others at the museum and sent a letter to Pullman saying the problems "had already been addressed by your employer" and that they did not violate OSHA standards. But Pullman persisted and in July, OSHA cited the Museum. That's also when Pullman says his relationship with his bosses soured. He was assigned a new supervisor and he contended that he was effectively demoted.

Pullman's accounts of the various interactions with supervisors, the safety officer and fellow employees over the following months are in a whistleblowing complaint Pullman filed with the Labor Department. This complaint was also dismissed and Pullman's attorneys have appealed.

MUSEUM STAFF RESPONDS. ASM managers admitted to knowing for 17 years that the walls at the ASM contained asbestos, but Smithsonian spokeswoman, Linda St. Thomas says that this information was not passed along to Pullman and about 20 other production workers due to “many staff changes and organizational changes.” She claims other museum workers were provided with “asbestos awareness” training in 1992 when they first found the problem. Its hard to know what this training covered since asbestos awareness training was not required by OSHA until 1995 and there reportedly are no records of this 1992 training.

Regarding testing, Smithsonian industrial hygienist, Gary Urban, says his tests indicate no problems with the air. But air tests only reflect what dust is being stirred up at the time of the tests. A Smithsonian lawyer said in a letter to Pullman’s attorney that the samples of deposited dust tested by Kynoch were “wrongly acquired” and that there was no proof the dust ever harmed anyone—that is was airborne. And St. Thomas says “We cannot consider the report from a firm hired by an employee to be credible.” This is presumably because the firm would have a conflict of interest. (Perhaps employees should not consider reports from firms hired by employers or reports by industrial hygienists on the employer’s staff to be credible for the same reason.)

As for worker notification, Claude Russell, the now-retired health and safety coordinator who was asked to set up the original March 2008 asbestos awareness class, said he and administrators had known about the asbestos for years, but “it wasn’t my job to tell anybody about anything. There were people above me who were supposed to share that information.” One has to wonder who was supposed to be insuring that everyone was properly trained if it was not the safety coordinator.

CONGRESSIONAL ACTION. House Administration Committee Chairman Robert A. Brady (D-Pa) said he will hold a hearing in April to investigate “dangerous workplace conditions” and the Smithsonian based on the *Washington Post*’s article. Hopefully, this hearing will sort things out.

COMMENT. ACTS thinks this story is only unique because of the tenacity and resourcefulness of Richard Pullman. We hear dozens of similar stories from workers in museums, universities, and theaters. We think the answer is asbestos awareness training for every young worker before they enter the workforce. This could be done through trade schools, high schools, universities, and unions. The training only takes a an hour or two and everyone should have it.

Every worker should know that all buildings built before 1980 should be suspected of having asbestos elements such as pipe insulation, dry wall and spackling products, vinyl tile, and the like. All older public buildings are required to have an asbestos management plan that is available to workers. Failure of an employer in an old building to discuss this plan with you should be your first red flag. Seeing workers disturb ceiling tiles or cut into walls without testing first should be another.

We rarely recommend hiring your own asbestos testing firm as Pullman did since it is very expensive and not technically legal to do on your employer’s premises. But you may want to take a few samples of dust or building material scraps on your own and have them tested. Do this without stirring up dust, have someone you trust with you as a witness, and take a picture of the location. There are many labs that will test your samples. The test results obtained may not stand up in court as evidence, but they will tell you if your fears are grounded or not.

Another course of action is to join a union and get them interested in providing their own experts to do this for you. As worker representatives, union safety officers often may test legally.

BAD EGG TEMPERA IDEA WINS PRIZE

http://www.gazettetimes.com/articles/2009/03/09/news/community/7loc03_atourbest.txt,

http://www.cdc.gov/NCIDOD/DBMD/DISEASEINFO/salment_g.htm,

http://www.fsis.usda.gov/Factsheets/Focus_On_Shell_Eggs/index.asp.

Erica Dorondo, a member of the First Alternative Co-op's grocery team in Albany, New York, received the MacGyver Award. The MacGyver award is given out quarterly to Co-op Employees whose inventive and ingenious activities merit recognition.

THE PROJECT. Erica makes egg tempera paint using damaged eggs from the grocery cooler. When the yolks are separated from the whites and mixed with pigments, the result is an archival quality paint that brightens in sunlight and is one of the oldest forms of paint. Erica claims this project is nontoxic. She has used this paint to teach children at Oakgrove Elementary in Albany.

DRAW BACKS. There are two major concerns with this project:

1. There are precious few archival art pigments that can be considered nontoxic and especially if they are in powdered form. Children should never work with archival adult paints or pigments.
2. Eggs can be contaminated with salmonella bacteria.

SALMONELLA. Egg-associated salmonellosis is an important public health problem. While most people may have only mild diarrhea and fever from salmonella, the elderly, infants, children, and those with impaired immune systems may have a more severe illness.

Most types of Salmonella live in the intestinal tracts of animals and birds and are transmitted to humans by contaminated foods. Stringent procedures for cleaning and inspecting eggs have made salmonellosis caused by external fecal contamination of egg shells extremely rare if the eggs are not cracked. But beginning in about 1980, a bacterium, Salmonella enteritidis began silently infecting the ovaries of healthy appearing hens and contaminating the eggs before the shells are formed. Today this organisms can be inside perfect Grade A eggs. The bacteria can be all through the egg, but is usually in the yolk--the part of the egg used in egg tempera painting.

REDUCING RISK. The US Department of Agriculture (USDA) suggests several ways to reduce the risk of exposure. Three of these methods are precluded in the egg tempura project: 1) keeping eggs refrigerated, 2) never letting eggs be warm for more than 2 hours, and 3) discarding cracked or dirty eggs. Instead, this project takes the broken eggs that are most likely to be salmonella-infected and lets them be used raw at room temperature which will encourage the bacteria to grow.

COMMENT. Children should never come in contact with archival artists pigments, especially in powdered form. And although the children are not eating the eggs used in this project, the USDA warns that even blowing out eggs for making Ukranian Easter Eggs carries risk. So the hand-to-mouth contact that is common in young children makes this project unsuitable. Only older children should participate if: 1) they can understand the potential hazards from bacteria, 2) can be trusted to keep their hands away from their mouths, 3) will clean up scrupulously after the class, and 4) if the "pigments" in the project are actually children's tempera paint pigments rather than potentially toxic archival adult pigments.

E-CIGARETTE DRAWS FIRE

SOURCE: google e-cigarette; www.farseegroup.com/ProductShow.asp?ID=129 & www.smoke51.com

The American Lung Association wants them banned, Senator Frank Lautenberg (D-NJ) asked FDA to ban them, and the anti-smoking group ASH pointed out they are made in China. What are they? They are the new electric cigarettes. I've been puffing on one this week. It looks and tastes like a cigarette even though I was using the "no nicotine" cartridges. And someone right next to the "e-smoker" will not detect an odor—unless you order the menthol, coffee, chocolate, or vanilla varieties.

The product's literature indicates they rely on water, propylene glycol and glycerol (glycerin) for the smoke. These are the same chemicals used in some theatrical smoke machines. In my opinion (based on my chemist's nose) that the glycol/glycerin smoke is created with enough heat to create some toxic decomposition products. And the smoke contains additional chemicals added to the cartridge to mimic the odor and taste of cigarettes. Here's a full list from the Farsee® manufacturer:

- * Tobacco oils (a total of less than <20% Virginia, Burley, and Oriental tobaccos)
- * Nicotine from tobacco – from 0 - 3% depending on if it is delivering 0, 4, 6, or 8 milligrams
- * Smoke-producing mixture of: Water <20%; Propylene glycol >50%; Glycerol <10%
- * 4-(2,6,6-trimethylcyclohex-2-butene-4-one) <5%
- * Many chemicals at <1-2% including: 2,3,5-trimethylpyrazine; 2,3-dimethylpyrazine; 2,5-dimethyl-pyrazine; 2-ethylpyrazine; 2-acetylpyrazine; beta ionone; linalool (citrus odor); menthol (for the menthol variety); methyl butyric acid; rose oil; vanilla extract (for the vanilla cigs); octalactone and undecalactone.

So that's what I've been smoking. What one does for science! I'm sure they are not good for me. There are many small amounts of chemicals, some approved for food use, some of varying toxicity and many with unknown long term hazards. But before we hurl these e-cigs on the ash heap of bad ideas, we should consider using this invention for stage smoking.

I'm sending this article to the Entertainment Services Technology Association (ESTA) and to several of the manufacturers. ESTA sets exposure standards for glycol and glycerin theatrical fog. And if the manufacturer would make cartridges containing only water, propylene glycol and glycerine, then merely measuring the exposure to glycol, glycerin and a very small amount of their decomposition products would enable a toxicologist make a risk assessment. If the actor does not inhale, this also will reduce risk. Two things are already clear: 1) even in their present state they are not as hazardous as real smoking, and 2) the amount of glycol smoke is too small to be a threat to others on stage.

ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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BUFFALO NEWS CITED BY OSHA FOR DEATH OF REPORTER

Buffalo News, www.bafalonews.com/cityregion/story/631148.html &
www.baffalonews.com/cityregion/buffaloerie/story/493178.html

In April, 2009, Occupational Safety and Health Administration (OSHA) inspectors recommended fining the *Buffalo News* \$31,500 for a fall that resulted in the death of one of their reporters last year. Tom Borrelli, 51, was paralyzed from the neck down after the fall, and he died of his injuries on November 20, 2008. The fall occurred from the stairs to the press box at All High Stadium in Buffalo. This stadium was built in 1926 and completely renovated in 2006. Plans to correct the problems with the stairs and the trapdoor above the stairs, however, were dropped.

Arthur J. Dube, regional director of OSHA's Buffalo office said that for years: "Reporters were exposed to the hazards of falls and head injuries whenever they used the press box." Further he said "The newspaper was aware of these conditions. [It] should have prevented the reporters from using the stairs and the press box until they were corrected. That's my opinion."

THE ACCIDENT SITE. The press box at All High Stadium is located on the roof of the stadium. To get there, reporters and others have to climb 13 steep metal stairs, prop open a heavy hatch and then walk across an unprotected walkway on the stadium roof to the press box. Borrelli apparently hit his head at the top of the stairs and tumbled down them. OSHA inspected the stadium on November 20 and found 5 serious violations:

1. Fixed stairways were less than 22 inches wide
2. Fixed stairs were installed at an angle to the horizontal greater than 50 degrees
3. Stair railings and handrails were not installed according to the regulation; instead, there was a single pipe-rail 26 inches above the stair tread.
4. Fixed stairs did not have at least 7 feet of vertical clearance between the stair treads and the overhead obstructions.
5. A side-hinged door was not used at the top of the stairs; instead there was a hatchway.

The maximum fine for each violation is \$7000. Dube recommended a fine of \$6,300 for each or \$31,500 for all five violations. OSHA does not require the News to repair the stairs. The citation said the violation was already corrected. This was done by taping off the location so people could not use it. However, the stairs at All High remain as they were the day Borrelli fell. The school system reopened them and the press box for the Harvard Cup playoff semifinals November 15.

RESPONSES. I monitor a forum called www.SafetyNewsAlert.com and have rarely heard such vituperation. Most responders called for OSHA's head on a plate and some saw this as part of a vast leftist conspiracy. Yet the decision appears to me to be fair. OSHA cannot cite the school, only the

employer. And employers of people who work on location, whether newspapers, film companies, or construction companies, must provide basic training for their workers so they can recognize and avoid safety hazards. Even reporters going into dangerous territories such as Iraq receive training in recognizing explosive devices, how to comply with local customs, avoid local diseases, etc.

The fact that this hazardous condition at the school was well known to the reporters and to employers at the paper for years should have resulting in some kind of action on the part of employers. And unless some action is taken now, Borelli's death could only be the first at this school. Borelli's family and/or paper might consider suing the school and it's administrators who are also at fault.

UK FIRM CHARGED IN DEATH -- DIRECTOR COULD GET LIFE

BBC NEWS, http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/england/gloucestershire/8014676.stm

In the first prosecution under Britain's Corporate Manslaughter Act of 2007, the director of Cotswold Geotechnical Holdings has been charged with gross negligence in the September 2008 death of a junior geologist, who was killed when a pit collapsed on him while he was taking a soil sample. The British Broadcasting Company reported that Director Peter Eaton could be jailed for life if convicted. And the fine that can be imposed on the company is unlimited in amount by the Act.

'DUTY OF CARE.' The 2007 UK's Corporate Manslaughter Act was passed to make it easier to bring companies to justice over the death of employees. According to a spokeswoman from the Special Crime Division, an organization is guilty of corporate manslaughter if the way in which its activities were managed or organized causes a death. This amounts to a gross breach of a duty of care to the person who died. And to satisfy the law, a substantial part of the breach must be in the way activities were organized by senior management.

In essence, the legislation makes it clear to all businesses - they must ensure they are properly managing health and safety at all levels and that all applicable legislation and guidance is followed.

COMMENT. Why does ACTS find relevant to our work this UK law for Corporate Manslaughter and the death of a young worker in a trench cave it?

1. We think a similar rule should be tried in the US. ACTS knows of many universities, theaters, and film companies whose upper levels of management are not involved or even aware of the OSHA regulations. Their budgets do not provide for basic worker training, personal protective equipment, and the like. Clearly, it is senior management and the organization of these institutions and companies that are faulty. And these elements are the exact focus of the UK Act.

Democrats introduced a bill to stiffen OSHA penalties in the US which recently failed. They have introduced another stronger bill. I wish them well. Without penalties, it is just business as usual.

2. I have worried for years about archeologists, geologists, and fossil hunters who sometimes work in trenches. The OSHA excavation regulations that are similar to those in the UK. Our regulations apply to digging any trench, cavity or hole in the ground that is more than 5 feet deep. Usually a trench of more than 5 feet deep must be shored up and braced, or the sides must be dug at specific angles or in steps to preclude cave ins. Yet I have seen educational films, even on PBS, in which trenches are clearly not in compliance and workers and scientists are climbing in. OSHA requires someone trained in soil characteristics, sanitation, OSHA regulations, and other disciplines to oversee the activity. This person also must have the authority to take prompt corrective actions.

CDC FIGURES ON ADULT LEAD LEVELS (2005-2007) PUBLISHED

SOURCE: Morbidity & Mortality Weekly Report, 58(14), April 17, 2009, pp. 365-369

The most recent figures on blood lead level (BLL) surveillance of adults in the 38 states that report to the Centers for Disease Control and Prevention were made available this April. While overall blood lead levels have dropped since 1994, the recent figures show the national estimated rate or adults with BLLs of 25 micrograms per deciliter ($\mu\text{g}/\text{dL}$) or higher per 100,000 people, showed a 3% increase from 7.2 in 2005 to 7.4 in 2006 and 2007.

It is important to remember when looking at these data that only those people who actually go to the doctor and get a blood lead test are covered. Many people have high BLLs and never seek care. And only 38 states report, so the estimates may be low.

OCCUPATIONAL EXPOSURES. The industry sectors with the highest numbers of lead-exposed workers were manufacturing of storage batteries, mining of lead and zinc ores, and painting and paper hanging. However, roughly half of the adults documented to have BLLs of 25 $\mu\text{g}/\text{dL}$ or 40 $\mu\text{g}/\text{dL}$ were from types of work that were not identified. So we will not know how many may have worked in college art programs, professional studios, or on film locations. But I personally know of a few cases that would fall into these categories and would liked to have had this data.

NON-OCCUPATIONAL EXPOSURES. The most common nonoccupational exposures were shooting firearms; remodeling, renovating or painting; retained bullets (gunshot wounds); and eating food containing lead.. But it is their surveillance of lesser sources that is particularly interesting.

Ingesting alternative and complementary medicines:

2005 - 15 reported cases with BLLs of $\geq 25 \mu\text{g}/\text{dL}$ with 7 of those having BLLs of $\geq 40 \mu\text{g}/\text{dL}$

2006 - 22 reported cases with BLLs of $\geq 25 \mu\text{g}/\text{dL}$ with 9 of those having BLLs of $\geq 40 \mu\text{g}/\text{dL}$

2007 - 16 reported cases with BLLs of $\geq 25 \mu\text{g}/\text{dL}$ with 6 of those having BLLs of $\geq 40 \mu\text{g}/\text{dL}$

Stained glass: Four stained glass hobbyists were reported in 2005, but none in 2006 and 2007.

Ceramics: There were also no reported cases of high BLLs from ceramics in 2005 and 2006, but in 2007, 5 cases were reported with BLLs of $\geq 25 \mu\text{g}/\text{dL}$ with 2 of those having BLLs of $\geq 40 \mu\text{g}/\text{dL}$.

While this, again, only represents reported cases, it is clear that taking alternative medicines or working with stained glass and ceramics can be hazardous. People must investigate unregulated medicinals and practice precautions when working with lead in any form.

All of this takes on greater significance in the light of the new research that shows adults have adverse health effects at levels much lower than the reportable 25 $\mu\text{g}/\text{dL}$. The CDC references the guidelines of the Association of Occupational and Environmental Clinics (AOEC) in their adult lead report. The AOEC guidelines recommend intervention when an adult's BLL is $\geq 5 \mu\text{g}/\text{dL}$ by providing follow-up blood tests and education about the potential health effects seen in recent studies that are associated with these lower blood lead levels.

ACTS has recommended for years that adults with BLLs above the average level for unexposed adults in the US, which is about 2 $\mu\text{g}/\text{dL}$, look for sources in their environments and try to reduce them as a precautionary measure. The same advice is even more important for children since recent studies show there is no level of lead that does not have adverse effects on them.

THE NEW CPSC RULES ON LEAD AND PHTHALATES

SOURCE: Notice of Availability of Draft Guidance Regarding Which Children's Products are subject to the Requirements of CPSIA Section 108; ... February 12, 2009, CPSC staff

In the February issue of ACTS FACTS, we covered the new Consumer Product Safety Improvement Act (CPSIA) which effectively forces the Consumer Product Safety Commission (CPSC) to set more protective levels of lead and six phthalates in children's toys and articles. We want to make it clear that this law does not directly affect the levels of lead or phthalates in art and craft materials!

ARE ART & CRAFTS USERS IMPACTED? One might assume that the new laws would affect products like ceramic glazes or paints that contain lead or the polymer clay products that contain phthalates since these may be used by children—which the CPSC defines as age 12 or younger. But this is not the case because the CPSIA rules apply only to children's "articles and toys."

The CPSC staff's draft guidance document says they "looked into the definition of 'toy' in the ASTM F963-07 toy safety standard for guidance." The CPSIA incorporates ASTM F963 (except in instances in which there is a conflict with the CPSIA) and this standard excludes certain articles from the definition of toy. Excluded are: bicycles; tricycles; sling shots and sharp pointed darts; play-ground equipment; non-powder guns, kites; sporting goods, camping goods, athletic equipment, musical instruments and furniture (except for toy versions of these); powered models of aircraft, rockets, boats and land vehicles; and art materials, model kits, and hobby items in which the finished product is not primarily of play value.

Art and craft products are exempt because they are regulated under the Labeling of Hazardous Art Materials Act. This law requires the manufacturer to hire a toxicologist to review the formula of a product and determine what he/she considers to be proper labeling for safe use of the product. Theoretically, if a particular toxicologist did not think that lead at these levels or phthalates were really a hazard in this art material as used, they could allow the manufacturer to label the product without warnings! This is not likely to happen, in my opinion. Besides, manufacturers would still have to place a California Proposition 65 warning on the products containing lead or phthalates.

The only way the CPSIA law can affect craftspeople directly is if they use materials such as lead glazes and paints or polymer clays that contain the banned phthalates to make toys or items "of play value" for children that are age 12 and younger.

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobin Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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ACTS FACTS

THE MONTHLY NEWSLETTER FROM

ARTS, CRAFTS AND THEATER SAFETY (ACTS)

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Vol. 23, No. 06

US MESOTHELIOMA DEATHS TABULATED FOR 1999-2005: ELEMENTARY SCHOOL TEACHERS ARE ON THE LIST

SOURCE: *Morbidity and Mortality Weekly Report*, 58(15), April 24, 2009 pp. 396-400

Malignant mesothelioma is a fatal cancer primarily associated with exposure to asbestos. The latency period between first exposure to asbestos and clinical disease usually is 20-40 years. The CDC's National Institute for Occupational Safety and Health (NIOSH) analyzed annual multiple-cause-of-death records for 1999-2005, the most recent years for which complete data are available. For those years, a total of 18,068 deaths of persons with malignant mesothelioma were reported, increasing from 2,482 deaths in 1999 to 2,704 in 2005. The annual death rate was stable at 14.1/million in 1999 to 14.0 in 2005.

These deaths can also be used to substantiate the asbestos exposures in the population. For example, in the absence of asbestos, mesothelioma is an extremely rare disease occurring in about one person in 1 million. The 14 deaths per million mesothelioma rates in the US indicates that asbestos exposure in the past was significant. And for every mesothelioma death, there are estimated to be hundreds more from other cancers caused by asbestos such as lung cancer.

Of particular interest to ACTS in this report are the proportionate mortality ratios (PMRs) found for certain professions. PMRs are the fraction of all deaths from a given cause in the study populations (in this case various professions) divided by the same fraction from a standard population. In other words, certain professions were found to have a higher rate of mesothelioma than that of the general population. Of the 163 occupations reported, 5 professions were found to have significant PMRs: plumbers; pipe and steamfitters; mechanical engineers; electricians, and elementary school teachers!

ELEMENTARY SCHOOL TEACHERS. It is our opinion this is not an anomaly in the figures but reflects the fact that 20 to 40 years ago, elementary schools were in generally bad repair, that asbestos regulations were not always followed during renovation or asbestos abatement, and that some of the art materials commonly used in schools contained asbestos.

Due to the 20 and 40 year latency period for the disease, the exposures that would have caused these mesotheliomas in 1999-2005 would have occurred mostly between 1965 and 1985. Asbestos was an accepted and common art material ingredient in this time period. For example, the "Art for Elementary School" booklet published by the University of the State of New York's State Education Department in Albany in 1967 includes the following recipe:

* Asbestos

3 cups ground asbestos or asbestos shorts (used for covering furnace pipes)

1 teaspoon Glue

1 cup flour

Water

Add enough water to make a dough of the right consistence for modeling. Ground asbestos is very inexpensive. When dry, it is light in weight, durable, a light gray color, and may be painted with powder paints.

The booklet also suggested Zonalite and vermiculite be used, which we now know were minerals contaminated with significant amounts of asbestos. (Also suggested were carbon tetrachloride, turpentine, and benzene!). This booklet was distributed throughout the state's elementary schools and I was still finding it on school shelves until the middle 1980s.

Asbestos was in commercial children's art products as well. One example, Milton Bradley's instant paper mache, contained 80 % chrysotile asbestos powder. This was not evident to teachers because ingredients were not listed on the plastic bag and the label carried the AP (Approved Product) nontoxic seal on it from the organization known today as the Arts & Creative Materials Institute!

Mesothelioma rates for elementary school teachers may continue to be elevated since asbestos continued to be present. For example, until this year, clays and other products containing the asbestos-contaminated talcs from RT Vanderbilt mines qualified for the AP seal of approval. We know these talc-containing clays can contribute to the overall airborne asbestos levels in schools from the experience of the Brookfield Middle school (see *ACTS FACTS*, 7/06). The business decision made by art materials manufacturers and certifiers to allow asbestos and asbestos-contaminated substances like talc and vermiculite in art materials could cause deaths decades later.

MEGA BRANDS AMERICA, OWNER OF ROSE ART, FINED \$1M

74 FR 18695-87, April 24, 2009

The Consumer Product Safety Commission (CPSC) reached a provisional Settlement Agreement with Mega Brands America formerly known as Rose Art Industries, Inc., which contains a civil penalty of \$1,000,000. The CPSC notice says Mega Brands America (Rose Art) was purchased by Mega Bloks, a Canadian corporation located in Montreal, Canada. The Canadian company could not take control of the company until December 31, 2005. This date is important since the CPSC complaint is against both Rose Art and Mega Bloks.

HISTORY. Until December 31, 2005, Rose Art was wholly owned by Jeffrey Rosen, Lawrence Rosen, and Sydney Rosen. Rose Art's principal office is located in Livingston NJ. Jeffrey and Lawrence Rosen remained as senior management at Rose Art until their respective departures in April and May of 2006. In June 2006, Rose Art was renamed Mega Brands America.

During this time, Rose Art designed and manufactured the Magentix magnet toys subject to the CPSC settlement. Between January 2003 and December 2005, Rose Art manufactured and/or imported Magnetix magnetic building sets. The sets were defective because magnets embedded in small plastic pieces contained in the sets could come loose and fall out of the plastic casing. This is a hazard because if two or more of the small magnets are ingested by a child, they can attract each other through intestinal walls, causing perforations, twisting and/or blockage of the intestines.

On December 14, 2005, Rose Art filed an "initial report" with the CPSC concerning a 22 month old child who died on November 24, 2005. The firm attributed the release of magnets from the plastic pieces to unusually abusive play by the decedent's older siblings. The report failed to report that at this time, Rose Art was in possession of a report of another child suffering an unspecified injury from ingesting a magnet and had already logged over 1100 consumer complaints that magnets had come loose or fallen out of plastic pieces. And Rose Art's prior owners knew, since at least late 2003 or early 2004, that there were design and manufacturing defects in Magentix which caused magnets to detach. Rose Art's prior owners have admitted under oath, at no point in time did they ever advise anyone at Mega Brands of the Magentix problems.

The rest of the story is one of both Rose Art and Mega Brands withholding information from the CPSC until in October of 2006, when a Special Order and Subpoena to Mega Brands America compelled the firm to produce all injury and incident records pertaining to Magnetix. This information showed that Rose Art had received notice of a child being injured from ingesting a magnet a few weeks prior to the second child's death. And by March 2006, Rose Art had received over 1500 complaints about magnets falling out of Magnetix pieces.

Failure to understand their obligation to disclose all these complaints cannot be used as a defense because at this time, Rose Art was already negotiating a civil penalty with CPSC for a reporting violation concerning another of its products and was fully cognizant of its reporting obligations. While not identified further in the CPSC announcement, this settlement probably related to one of two prior recalls in 2002 of Rose Arts: 1) Cotton Candy machine (for repair) and 2) for their soap making kit which posed a burn hazard to children (go to www.CPSC.gov, recalls by manufacturer).

COMMENT. ACTS hopes purchasers of children's toys and art materials will always get second opinions about these products before purchasing them for home or school use. Buyers from school purchasing agents to parents should search CPSC recall records and other sources.

STUNT MAN BURNED: OSHA INVESTIGATING

The Oregonian May 18, 2009 16:36PM & OregonLive.com

An actor was badly burned as he leaped from a window during a choreographed explosion in Scio, Oregon. Actor Joshua Frazier of Lebanon, OR, was the co-creator and leading man in the movie "Remnant," an action movie which was being produced by GTL Media, a Lebanon company. Frazier and his business partner, Jeff Hamar, helped found GTL Media.

According to a Craigslist ad posted May 5, the crew was looking for a camera operator for a scene described as "a shot where the actor is blown through a window with 2 separate explosions." Further the ad said, "This is a serious project with serious actors and crew."

Scio fire chief Rich LaBelle said Frazier and the crew, including a pyrotechnician, gathered on the movie set on May 9 at about 6 a.m. on the day of the accident to rehearse the scene. The Scio fire department had been using this abandoned house for training for about a year and had invited firefighters from around the area for training at the site on the same morning, LaBelle said.

The firefighters were preparing for their drill as the movie crew shot the scene. The crew had previously conferred with Scio fire and had permission to use the house. "Our stipulation was that they didn't put any fire in or around the building until we had a fire engine there," LaBelle said. "That was our only stipulation." Then Frazier, in flames, jumped out of the house. Firefighters put out the fire as Frazier lay on the ground. LaBelle said he didn't know what went wrong during the stunt.

Frazier, 29, was still in critical condition May 18, nine days after the accident, in the Oregon Burn Center at Legacy Emanuel Hospital in Portland. Hamer said Frazier suffered third-degree burns over 40 percent of his body. According to Hamar, Frazier had been unconscious since arriving at the burn center, had undergone skin graft surgeries, but was breathing without mechanical assistance.

OR OSHA. On May 18, the Oregon Occupational Safety and Health Administration said that it is investigating. Melanie Mesaros, a spokeswoman for Oregon OSHA, said they are in the very early stage of their investigation and said she couldn't provide further details. Hamar also declined to provide a comment on the cause of the accident.

WATER-BASED FACE PAINTS RECALLED

<http://www.fda.gov/bbs/topics/NEWS/2009/NEW02015.html>

The US Food and Drug Administration (FDA) alerted consumers to a recall of Water-Based Face Paints from Fun Express, Inc. Distributed by Oriental Trading Company, Omaha, NB, the children's face paints were associated with reports of skin reactions in children.

The FDA learned of a cluster of adverse events in children exposed to various colors of the face paint. All exposures occurred on the same day at an organized event and included rashes, itchiness, burning sensation, and swelling where the face paints were applied. Significant microbial contamination was indicated in most of the products in testing by an FDA laboratory. As a result, the following Face Paints manufactured by Shanghai Color Art Stationery Company Limited, Shanghai, China, are being voluntarily recalled by Fun Express Inc.:

<u>Item Number</u>	<u>Product Description</u>	<u>Universal Product Code (UPC)</u>
85/2077	Blue Face Paint	8 8760048110 7
85/2078	Purple Face Paint	8 8760048112 1
85/2079	Red Face Paint	8 8760048114 5
85/2080	Orange Face Paint	8 8760048116 9
85/2081	Black Face Paint	8 8760048118 3
85/2082	Green Face Paint	8 8760048120 6

FDA advises consumers to stop use of these products and discard or return them to retailers. The FDA encourages consumers and health care providers to report any adverse events from face paints to the FDA as well as to state and local health authorities. Report problems to FDA's MedWatch Adverse Event Reporting program at www.fda.gov/MedWatch/report.htm or call 1-800-FDA-1088.

H1N1 RESPIRATOR RECOMMENDATIONS CHANGE

BNA-OSHR, 39(18), April 30, 2009, p. 344

The Centers for Disease Control and Prevention revised its swine flu recommendation that public health personnel wear a surgical mask if an N95 respirator is not available after criticism from the National Institute for Occupational Safety and Health and many, many other safety advocates.

Research shows that loose-fitting surgical masks do not protect healthcare workers from influenza viruses. This was clear in the Canadian SARS virus experience in which hundreds of hospital workers caught the disease from patients while wearing surgical masks or even N95 masks without proper training and fit testing (*ACTS FACTS*, Nov. 2003). Memories are short. And physicians seem loath to give up that Ben Casey cloth mask image.

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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NYU STUDENT FILMMAKER ELECTROCUTED

SOURCE: Latest News, Regional, *The Associated Press*, 5/31/09, *Daily News*, staff writer Tina Moore, 5/31/09
A recent film school graduate from New York University's film school was electrocuted and another student was seriously injured while working on a movie set in Georgia on Saturday, May 31, authorities said.

John Lamensdorf, 22, was setting up lights behind an abandoned home outside Atlanta on Thursday night when the lifting arm of a truck hauling 15,000-watt lights grazed overhead power lines, local officials said. The impact sent a charge through the electrical wiring the students had run around the house for a generator, killing Lamensdorf and seriously injuring another student, said Jasper County sheriff's Lt. Jerry Robinson. The injured student's name was not released.

Lamensdorf was working with Pen Pals Productions near Monticello, GA. Pen Pals Production company was created by two NYU graduates. Lamensdorf's close friend Andres Cardona said he was also working on the film. "I saw what was like a lighting bolt," Cardona, 22, said. "I turned off the circuit breaker, turned off the generator." Cardona said he went to find his friend. "I just started breathing into his mouth and pumping his chest," he said. "I feel like we got him back for a second. He was kind of coughing and choking and then I lost him again. "He wasn't even touching a light - it was just a light stand," he said.

Cardona said the electrician the students hired in Georgia told them the overhead wires were telephone lines, but they were actually power lines.

COMMENT. The OSHA regulations are very specific in 29 CFR 1926.550(a)(15) about bringing this kind of equipment near power lines. Especially relevant is the following rule:

(vi) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;

Although Pen Pals Productions is a small company, they are still "employers" and are responsible for being fully familiar, and in compliance, with the safety regulations applicable to the work at hand. They should not have taken the word of a hired electrician about the power lines. Only the person owning the lines or the electrical utility authorities can make that judgement.

I fault NYU for sending film school graduates out into the world with so little technical knowledge about location safety and with a misplaced sense of confidence in their judgement. I do not do this on the basis of this NYU case alone. My experience gained in 30 years of inspecting schools tells me that most schools do not provide basic safety training. And film and theater workers need more than the basics, they need detailed technical and regulatory training for the jobs they will be doing.

EUROPE PROPOSES TO BAN SEVEN COMMONLY USED CHEMICALS

SOURCE: *BNA-OSHR*, 39(23), 6-4-09, pp. 450-451

On June 1, the European Chemicals Agency (ECHA) formally submitted to the European Commission a list of seven substances it believes should be phased out or restricted under the REACH (Registration, Evaluation, Authorization [and Restriction] of Chemical Substances). The substances subject to restriction would include:

- musk xylene, the fragrance enhancer: perfumes, air fresheners, detergents, fabric softeners & more
- 4,4'-diaaminodiphenylmethane (MDA) an epoxy hardener and ingredient in many other resins
- the short chained chlorinated paraffins (SCCPs), flame retardants
- hexabromocyclododecane (HBCDD), a flame retardant
- bis(2-ethylhexyl) phthalate (DEHP), a plasticizer
- benzylbutylphthalate (BBP), a plasticizer
- dibutylphthalate (DBP), a plasticizer

In both Europe and the US, art materials often are exempt from such bans. But the ECHA expert committee strengthened their draft recommendation for four of the chemicals (MDA, DEHP, BBP, and DBP) by rejecting an exemption for their continued use in artists' paints.

COMMENT. ACTS has been on the record against use of the three banned phthalates since they were used in polymer clays 17 years ago (*ACTS FACTS*, January, 1992). Clays such as Fimo, Sculpey, and Cernit are commonly used in homes and in schools ranging from elementary to college levels. It is outrageous that products containing these phthalates were ever certified for this use.

The polymer clay manufacturers have replaced these phthalates with other plasticizers most of which are considered trade secrets. Users today will not be able to look up the data—or lack thereof—on these new ingredients. Instead, they will just have to trust, again, the opinions of the manufacturer and the certifier. And time has proven over and over that toxic ingredients will not be prohibited by the art materials industry or their certifiers until it is done for them by some government agency here or abroad. The art materials industry needs to become proactive rather than reactive.

FOUR CHEMICALS MUST BE LABELED IN CANADA

SOURCE: *Canwest News Service*, Sarah Schmidt, 3/6/09, <http://www.canada.com/news/chemicals%20consumer%20products%20slapped%20with%20toxic%20label/1362478/story.html>

The Canadian federal government in Ottawa declared four chemicals widely used in paints, varnishes, stains and industrial cleaners as toxic to human health, paving the way for their possible ban in products. These substance are also used in nail polish, printing inks, artist materials, grout products, some hairsprays, skin creams and as a fragrance ingredient, according to Health Canada.

- * 2-(2-Methoxyethoxy) ethanol (DEGME);
- * 2-Methoxyethanol acetate (2-MEA);
- * 2-methoxy-1-propanol, an impurity in a common glycol ether solvent; and
- * C.I. Pigment Red 3.

COMMENT. This red pigment is of most interest to ACTS. Called hansa, segnale, or toluidine red plus dozens of other names, the pigment has been used in adult and children's art materials in the past. It is not expected to be in children's art materials today since it can cause a fatal acute illness called methemoglobinemia on ingestion. Canada considers it a cancer hazard.

SKIN SANITIZER RECALLED FOR BACTERIAL CONTAMINATION

SOURCE: <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm164863.htm>

In an ironic twist, the U.S. Food and Drug Administration announced today that Clarcon Biological Chemistry Laboratory Inc. of Roy, Utah, is voluntarily recalling some skin sanitizers and UVskin protectants because of high levels of disease-causing bacteria found in the product during a recent inspection. Analyses of several samples revealed high levels of various bacteria, including some associated with unsanitary conditions. Some of these bacteria can cause opportunistic infections of the skin and underlying tissues. Such infections may need medical or surgical attention, and may result in permanent damage. Examples of products that should be discarded include: Citrusshield Lotion, Dermalentials DermaBarrier, Dermassentials, Antimicrobial Hand Sanitizer, Iron Fist Barrier Hand Treatment, Skin Shield Restaurant, Skin Shield Industrial, Skin Shield Beauty Salon Lotion, Total Skin Care Beauty, Total Skin Care Work.

NIOSH RELEASES STUDY OF COLLEGE ART DEPARTMENT

SOURCE: <http://www.cdc.gov/niosh/hhe/> search for HETA 2007-0167-30078 released 2/09

This past February, the National Institute for Occupational Safety and Health (NIOSH) released a Health Hazard Evaluation Report (HETA) of Brooklyn College's Sculpture studios in their Art Department. NIOSH looked at the school's electrical and physical safety, ventilation, exposure to volatile organic compounds (VOCs) in the woodworking studio, welding fumes in the metalworking studio, and it reviewed employee's health complaints and the school's safety and training programs. The evaluations were done in October 2007 and March 2008. NIOSH investigators observed :

...inadequate electrical grounding, machine guarding, and spacing around power tools and machines; and poor housekeeping practices. Eating and drinking were allowed in the studios during classes, eye protection was not always used, and respirators were used improperly. Many of the existing health and safety rules and guidelines of the studios were not being enforced. The ventilation system did not mechanically provide supply air to the sculpture studios.

NIOSH also found that welding fume samples obtained during personal air monitoring of the students during welding did not contain levels over the accepted limits. But NIOSH points out that they consider welding fume to be a carcinogen and exposure should be kept as low as possible. The amounts of VOCs students breathed in the woodworking studio were also very low, yet NIOSH concluded that the reports of nose and throat irritation during working are consistent with particulate and/or irritant exposures noting that some people experience symptoms below the occupational exposure limits. Many other deficient practices were found. Some of those the school reportedly corrected by the time of the report's release included:

- Guards were installed on all the machines and the large ones were bolted to the floor.
- GFCIs (ground fault circuit interrupters for electrical outlets) were installed in the ceramic studio.
- The ventilation was repaired in the studios and bathrooms.
- Employees were no longer allowed to use compressed air to blow dust off their clothing or off the machines in violation of the OSHA regulations. Instead HEPA vacuums were purchased.
- Class procedures were revised to allow students time to clean up their worker areas.
- The Health and Safety Committee reconvened and meets every few weeks during each semester.
- A dust collector was installed in the woodworking with bags of higher efficiency than before.
- An enclosure was built around the dust collector to reduce noise.
- Management had purchased and planned to install eyewash stations in each studio.*

COMMENT. The findings in this study are so typical of small college welding, woodworking and sculpture departments, that everyone working in or for these departments should have a copy of this NIOSH study for reference (see the source under this article's headline). The text also provides some excellent arguments for making improvements to present to administrators.

footnote:

* I noted that the school purchased hand-held drench hoses with dual heads as eyewashes which many not meet the applicable standard, that is, the American National Standards Institute's ANSI Z 358. This standard requires eyewashes to turn on in one second with a single movement and stay on while allowing the users two hands to be free to hold open their eyelids. Methods of mounting these hoses can be devised to meet the standard, but it cannot be assumed that they provide proper protection.

PESTICIDE THAT LOOKS LIKE BLACKBOARD CHALK

SOURCE: <http://www.epa.gov/pesticides/health/illegalproducts/chalk.htm>

The Environmental Protection Agency's (EPA) website carries a warning about and illegal Insecticide Chalk, also known as "Miraculous Chalk" or "Chinese Chalk." It is commonly sold in small neighborhood stores or on the street for about \$1 a box. It is mostly imported illegally from China and often bears a label in both English and Chinese. Sometimes the manufacturer claims on their labels that the chalk is "harmless to human beings and animals" and "safe to use." EPA says these claims are untrue and dangerous. Because insecticide chalk looks just like regular chalk, children often mistake it for blackboard chalk and write with it or put it in their mouths.

The active ingredient in Insecticide Chalk is a chemical called deltamethrin, which is one of the most toxic pesticides of its kind. Insecticide chalk should be avoided at all times. Overexposure to some chemicals found in samples of insecticide chalk can provoke serious health effects, including vomiting, stomach pains, convulsions, tremors, and loss of consciousness. Serious allergic reactions are also possible. Several children have been hospitalized after eating insecticide chalk. EPA's advice is to dispose of any supplies of insecticide chalk either by returning the product to the retailer where it was purchased, or contact a local hazardous waste facility to arrange for disposal.

ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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ERIC GERTNER, BELOVED ACTS CO-FOUNDER DIES

Editorial, Monona Rossol

Eric Gertner, Secretary and founding member of ACTS' Board died unexpectedly on June 9 at age 67. His death comes only two and one-half years after the death of his wife, Nina Yahr, who was also on our Board. Both were more than colleagues. They were dear friends.

I met Eric in about 1980 when he was working as a theatrical lighting designer. He was a member of the United Scenic Artists, Local USA829 of the International Alliance of Theatrical Stage Employees. His New York City credits included working on *World of Illusion* with Lily Tomlin at Actors' Playhouse in 1964 and *Richie* at the Orpheum Theatre in 1980.

We first talked about health issues in 1982 when he was working on a production of *Hamlet* at Queens College. Eric was experiencing throat and upper respiratory symptoms every night when a common brand of theatrical fog rolled over his design table set up in the center orchestra seats during lighting rehearsals. Then in 1983, he experienced the same symptoms in the previews for *On Your Toes* at the Virginia Theatre in New York.

At this time, I was President of the Center for Occupational Hazards (later called the Center for Safety in the Arts) and I suggested Eric write a letter about his problem and I'd use it as the lead-in for an article about theatrical fog in our newsletter. To provide additional information, I interviewed the General Manager of the fog company (to remain nameless) by telephone. He informed me that this product was a trade secret and he would not divulge the ingredients.

At this point in my interview, I asked a question that generated a legal dispute. I specifically asked the General Manager if he would reveal the product's ingredients to a person's doctor if the doctor said he needed the information to treat his patient. I asked this question knowing full-well that it is a legal requirement for manufacturers to provide this information to medical professionals. I reworded the question and asked it again. Both times, I distinctly heard a firm "no."

I wrote a short article based on Eric's letter and reported on my conversation with the General Manager and his refusal to provide ingredient information to doctors. And out came the lawyers.

After a year's heated negotiations, the Center published a short 80-word notice on page 3 of our 4-page newsletter, every syllable of which had been fought over by our respective lawyers. It said in part that the General Manager "informs us that our article" "may have contained a misunderstanding." While the company "would not release the exact percentages of each ingredient of its product, which is a trade secret, it is now and has always been company policy to release a list of ingredients to a practicing physician treating a patient affected by" the product.

Eric was fascinated by the dispute he had provoked. Unfortunately, the dispute also resulted in his no longer being called for lighting jobs. Eric and I learned that people who complain in our business or become controversial are likely to be unemployed. We both became even more determined to

help theater people and Eric joined the Board of the Center for Occupational Hazards. When I left the Center in 1986 to set up Arts, Crafts & Theater Safety, Eric went directly from the Center's Board to our ACTS' Board.

Rather than obsessing about the loss of his career, Eric decided to pursue a career in my field of industrial hygiene. He went back to Hunter College and graduated from the Masters Program in Environmental and Occupational Health. By this time, Eric had married Nina, whose father was a famous neurologist at Mt. Sinai. Eric combined his interest in his father-in-law's medical work and his new career by specializing in hospital safety and infection control.

Even though he was now on another career path, Eric was a man who never forgot his friends and colleagues. He was always proud of being a member of USA829 and faithfully paid his dues until he retired in 2006. He never wavered in his friendship to me or his support of ACTS, remaining as the Secretary on our Board until he passed. He also never forgot the school that gave him his second career. Professor Emeritus, David Kotelchuk, Hunter College, expressed this in an e-mail to me:

Eric Gertner was a graduate of the Masters program in Environmental and Occupational Health at Hunter College. Then as he set out on his professional career in health and safety, he never forgot the school where he was trained nor his colleagues there. Due to his continuing interest in the program, he was asked to become a member of the External Board of Advisors to the program, on which he served until his death.

Also his generosity of spirit led him to endow the Felice Yahr fellowship each year to a Hunter student who showed academic potential and an interest in hospital and health care health and safety. (Felice Yahr was his mother-in-law.)

Eric was a wonderful human being. He was warm, generous and cared about others. We will all miss him.

I know I do.

WISCONSIN HIGH COURT: UNIVERSITY OFFICIAL CAN BE SUED

www.chicagotribune.com/news/chi-ap-wi-cameramansfall,0,6849227.story/, Riyan J. Foley, AP writer, 7/17/09

In 2003, ABC Sports cameraman Richard Umansky, 48, of Davie, Fla., suffered head injuries after falling 8 feet from a platform while installing a camera the day before a football game between Wisconsin and Iowa. He died days later. Umansky's parents filed a wrongful death lawsuit against the University and against Camp Randall Stadium's facilities director Barry Fox claiming he failed to comply with federal Occupational Safety and Health Administration (OSHA) rules that require platforms to have a railing. The Wisconsin Department of Justice, which represented Fox, argued that he could not be sued under a doctrine that gives legal immunity to state employees in most cases.

The case worked its way up to the Wisconsin Supreme Court. On July 12, 2009, in a 4-3 decision, the Justices said the suit can move to trial. The lawsuit claims Camp Randall Stadium's facilities director Barry Fox failed to comply with state and federal safety rules that required the platform to have a railing. Fox testified in deposition that he was in charge of ensuring the stadium followed OSHA rules. Justice Patrick Crooks, writing for the majority, said Fox did not qualify for immunity because he had no discretion to ignore the safety rules. "It was Fox's responsibility, as director of facilities for Camp Randall Stadium, to be sure that the stadium complied with OSHA regulations," Crooks wrote. "Period."

Justice Crooks also rejected Fox's argument that he had no responsibility for Umansky's safety since Umansky was an employee of ABC, which was later cited by OSHA and paid a fine of \$4,200. A settlement between OSHA and ABC required camera operators to use protective equipment such as harnesses if platforms lacked railings. ABC also paid worker's compensation benefits.

The attorney for the Umansky family, Michael J. Riley, said he hoped the decision would clear the way for a settlement. The family is seeking the maximum \$250,000 allowed for a claim against the state. Riley called the decision fair and a step toward weakening a doctrine that allows government employees responsible for injuries to escape legal penalties.

COMMENT. This is an important case. It's one more legal indication that stages and performance platforms must either be railed or the workers near them must wear fall protection. The argument that theater and entertainment are exempt from the OSHA fall protection rules is over.

The case also established that the family can sue both the University and their official despite claims of state immunity. They can sue even though their son was given workers' compensation and his employer was fined by OSHA. Further, they can sue even though Dissenting Justice Annette Ziegler noted that a guardrail on the platform atop an entry ramp to the stadium had been removed in 1999 at the request of an ABC technician! So no matter how the fall hazard arose, the University and its officials in charge of safety must ensure that the OSHA rules are followed.

Justice Ziegler's dissenting argument was concerned that the ruling allows "a windfall recovery" for private workers injured at state buildings because they can get damages from both employers and the state. The decision weakens the goal of limiting legal damages funded by taxpayers, she said. However, ACTS thinks that justice in this case must consider the family interest, not the taxpayer's.

It is also important to note that Umansky was working alone when he fell which violated good practices requiring a buddy system when doing dangerous work. Umansky was 20 years on the job and ACTS wonders if ABC provides the mandated OSHA safety training for cameramen.

CALIFORNIA LISTS MARIJUANA SMOKE AS A CARCINOGEN

<http://oehha.ca.gov/Prop65/prop65/list/Newlist.html>

Effective June 19, 2009, Marijuana smoke was listed as a substance known to the State of California to cause cancer. California's Office of Environmental Health Hazards Assessment (OEHHA) has added marijuana smoke to its Proposition 65 list of chemicals that require warnings on all products available for purchase by residents of California. Any product available nationally must follow the Prop 65 labeling rules unless they can find a way to prevent Californians from buying them.

The OEHHA waits to see data before they list a substance, but clearly, all smokes from burning of organic matter will cause cancer. Smoke from cigarettes, coal, wood, gasoline, candles, and the T-Bone steak on your grill will contain carcinogens. Marijuana is no exception.

NOTICE REGARDING ACTS' EMAIL RESPONSE

If you want an response to an inquiry from ACTS email hot line, consider what you put in the subject line. Those with no subject matter at all or "hello," "urgent" and similar spam lines, are deleted. We want to answer you, so put a bit of thought into the wording of the subject line.

FDA WARNS ABOUT E-CIGARETTES

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm173222.htm>, news release, 7/22/09 & *The NY Times*, Money & Policy, p1, 7/22/09.

The U.S. Food and Drug Administration today announced that laboratory analysis of electronic cigarette samples has found that they contain carcinogens and toxic chemicals. Electronic cigarettes, also called "e-cigarettes," are battery-operated devices that usually contain cartridges filled with nicotine, flavor and other chemicals. The e-cigarette turns nicotine, which is highly addictive, propylene glycol, and other chemicals into vapors and mists that look like smoke and can be inhaled by the user. In the April issue of *ACTS FACTS*, I reported on having experimented with e-cigarettes, which are also available in a nicotine-free variety, as an alternative to on-stage smoking.

Because e-cigarettes have not been submitted to the FDA for evaluation or approval, the FDA's information is limited to the testing it has performed. In this case, the FDA's Division of Pharmaceutical Analysis analyzed the ingredients in 19 varieties of cartridges that hold the liquid and two leading brands of the cigarette portion of the devices which heat the liquids to form the vapor. In one sample, analyses detected diethylene glycol instead of propylene glycol, Diethylene glycol is a toxic chemical used in antifreeze and which counterfeiters have substituted for glycerin in cold remedies and other medicinals, killing hundreds worldwide. How hazardous this glycol is by inhalation is not established.

In several other samples, the FDA analyses detected carcinogens including nitrosamines.

Health care professionals and consumers may report serious adverse events (side effects) or product quality problems with the use of e-cigarettes to the FDA's MedWatch Adverse Event Reporting program either online, by regular mail, fax or phone.

COMMENT: The products I "smoked" as a test were advertised as containing only propylene glycol and some flavoring chemicals. Our concern is that, like the theatrical fog machines which also contain propylene glycol, this chemical will dissociate into toxic chemicals as all organic chemicals do when the e-cigarette heats or burns them. Since good actors can carry off the deception without inhaling, e-cigs still appear safer than real cigarettes for both the smoker and others on stage.

But these points are moot if Chinese manufacturers cannot assure us that they can keep diethylene glycol and carcinogens out of e-cigs. At this point, we have no advice and await further data. (The FDA e-cig test data plus the listing of marijuana smoke as a carcinogen are downright depressing!)

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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ACTS FACTS

THE MONTHLY NEWSLETTER FROM

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September 2009

Vol. 23, No. 09

DISNEY WORLD: THREE STUNT WORKERS DIE IN SEVEN WEEKS

The Associated Press, August 17, 2009, Updated: 08/18/09, 11:40 am & Tampa Bay Online, 7/18/09

A 30-year-old performer at Disney World is dead after rehearsing for a stunt show. He's the third worker to die in seven weeks at the resort. Anislav Varbanov was pronounced dead late Monday, August 17, at Florida Hospital Celebration Health after injuring his head while rehearsing a tumbling roll for the "Indiana Jones Epic Stunt Spectacular" at Disney's Hollywood Studios.

The Indiana Jones show recreates scenes from the first Indiana Jones film, "Raiders of the Lost Ark," in a 30-minute live show. Audience members are selected as "extras" for the show, which includes pyrotechnics, vehicles and a re-enactment of the famed 12-foot rolling boulder scene from the film. Throughout, a "director" explains the stunts and special effects used in movie making.

According to the *Orlando Sentinel*, performers at the "Indiana Jones Epic" show have been injured before. In 1988, the year after the show's opening, Disney was fined \$1,000 by OSHA after three people were injured when equipment failed, two by falling and the other in a malfunctioning trap door, the *Sentinel* reported.

DEATH 2. The death comes a week after a performer died four days after an onstage fall during another show, "Captain Jack's Pirate Tutorial," at the Magic Kingdom. Mark Priest, aged 47, was sword-fighting when he slipped and hit a wall. Varbanov had also been a performer at the Pirate Dinner Adventure attraction off International Drive in Orlando, the *Sentinel* said.

DEATH 3. On July 5, a 21-year-old monorail driver died when another train crashed into his own. Miscommunication by another employee was cited as a possible cause of the crash.

The Orange County Sheriff's Office and the Occupational Safety and Health Administration are investigating.

COMMENT: According to a Disney spokeswoman, Zoraya Suarez, the next day's performances of the "Indiana Jones Epic" stunt show were canceled in Varbanov's memory. ACTS finds this a rather small tribute and thinks that this show and others involving stunts should be canceled until they were reworked. Three deaths in seven weeks in one resort are powerful evidence that something is seriously wrong with the resort's procedures for risk assessment, stunt coordination and training.

This past August should indicate many other companies should do likewise. The quality of stage construction might be rethought after the collapse of an outdoor stage in a storm at a music festival near Edmonton, Alberta, on August 1st which killed one and injured 75 people. And 4 days later, Arrowsmith's Steven Tyler fell off an unguarded stage in South Dakota forcing the cancellation of several performances. These and other incidents support ACTS' belief that if records were kept, entertainment would rank as a high-risk industry along with construction.

PCB LEVELS AT NEW JERSEY POOL OFF THE CHARTS

http://www.northjersey.com/news/aroundnj/PCB_levels_at_Paramus_pool_off_the_charts.html

North Jersey, by Michael Gartland, 5/7/08.

Last year, a five-volume report on environmental conditions at the Paramus Municipal Pool revealed PCB levels up to 162 times state health standards. The report consists almost entirely of raw data and outlines the presence of PCBs and pesticides on lawns and play areas around the pool. The borough began preliminary tests of soil in response to concerns about contamination discovered a year earlier at a nearby middle school's pool area which showed the presence of pesticides and PCBs.

Polychlorinated biphenyls – or PCBs, as they are more commonly known – were banned in the United States in 1977 due to potentially hazardous side effects in humans. According to the federal Department of Health and Human Services, exposure to PCBs may cause liver damage and lead to skin conditions such as acne and rashes. The department's Web site says PCBs are most likely carcinogens and that studies suggest that "the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs."

The residential clean-up criteria for the New Jersey Department of Environmental Protection require sites with PCBs at levels above 490 parts per billion to be re-mediated. According to the Boswell report, soil samples contained concentrations of PCBs that often exceeded 1,000 parts per billion. One sample showed the presence of PCBs at almost 80,000 parts per billion.

COMMENT. These kinds of situations should not be a surprise. PCBs were touted in the 50s and 60s as a miracle substance. They were used in many kinds of products. An EPA proposed rule on PCBs on December 10, 1999 (64 FR 69358-64) carried a list of known uses:

...some wool felt insulating materials, plastics, paint formulations, small rubber parts, adhesive tape, insulating materials used in electrical cabling, fluorescent light ballast, potting materials, gaskets in heating, ventilation and air conditioning and other duct systems, caulking, coatings for ceiling tiles, flooring and floor wax/sealants, roofing and siding materials, adhesives, waterproofing compounds, anti-fouling compounds, fire retardant coatings, coal-tar enamel coatings for steel water pipe and underground storage tanks..., and any number of other chemicals uses such as additives and plasticizers. P. 69359

Not included in EPA's list were many art field uses including as an historic slide mounting medium. There are whole rooms full of slide cabinets in some museums all mounted in pure PCs (Arochlor). And it is even today a contaminant in many art materials. For example, the phthalocyanine blues and greens and the diarylide yellows cannot be manufactured without PCB contamination. EPA restricts these contaminants to 50 parts per million, but ACTS thinks the lack of supervision and control of pigment manufacture located now located primarily in China, Bangladesh and India may mean that these contaminants are at higher levels in some art materials today.

Also ignored in the US is the prevalence of PCBs in old paints. While these paints are routinely tested for lead, they should also be tested for PCBs. Also quoting from the same EPA notice:

***Paint formulations.** During the 1950-1960 time frame, PCBs were added to paint formulations as drying oils (resins) and plasticizers or softening agents (liquids) in concentrations that range from 10-12% PCBs (100,000-120,000 ppm) to 20-30% PCBs (200,000-300,000 ppm). Concrete*

surfaces and equipment, as well as marine or waterproofing applications, used at Federal installations and in the manufacturing and industrial sectors may have painted surfaces contaminated with PCBs. Data provided to EPA indicate the PCBs have been found in dried paint at concentrations that range from <1 ppm to 97,000 ppm.

The EPA wrote this in a way that may lead one to think that only federal and industrial sector paints contained PCBs, but these were the only paints they studied. PCBs were in similar use in consumer paints. We need to keep in mind that all old paint, lead-containing or not, may contain PCBs. I have a feeling EPA does not pursue this problem because it would complicate waste disposal.

OSHA CLARIFIES COVERAGE BY 2007 ELECTRICAL RULE

BNA-OSHR, 38(44), 11/06-08, pp. 864-865, 73 Fed. Reg. 64,202-5, October 29, 2008.

In 2007, OSHA published a revised Electrical Standard. Then on October 29, 2008, OSHA published some Clarifications for the new rule in response to questions from employers. Of primary importance to art and theater employers and workers is the clarification of the following points.

CONSTRUCTION-LIKE ACTIVITIES DEFINED. OSHA intends certain provisions to apply to the Construction Industry and to “construction-like” activities, “including certain maintenance, remodeling, or repair activities involving buildings, structures or equipment.” This is required as long as the electrical hazards are “similar to those typically found in construction work,” even if the work is not construction, OSHA said. In particular, the discussion of the use of GFCI protection and extension cords shows how these provisions can apply to theater or film work.

USE OF GFCI PROTECTION. The use of ground-fault circuit interrupter protection (29 CFR 1910.304(b)(3)(ii)) is covered for “construction-like” activities that are “activities that would be covered under OSHA’s construction standards but for the fact that they are specifically covered by other OSHA standards” (e.g. the maritime or mining standards); or “all other activities that do not qualify as construction but involve electrical hazards similar to those typically found in construction work.” As examples of hazards typically found in construction work, OSHA cited two:

1. An example of “construction-like” is use of temporary receptacles (outlets provided by extension cords) that pose hazards due to “severe use or environmental conditions” including damage to a cord set (extension cord) or exposure to wet, damp or conductive conditions such as working outside. So extensions cords must be GFCI if they are used in construction like situations where they are walked on, run over by equipment, used roughly, or used in outdoor film or entertainment venues.
2. Another example of “construction-like use is “frequent reconfiguration and rearrangement of the electric equipment.” This would qualify the electrical equipment to be GFCI in most theater and all film locations where the electrical cables and lighting instruments may be reconfigured for each production or even each shot or scene.

TEMPORARY WIRING SECTION CLARIFIED. The Federal Register notice also says that, under 29 CFR 1910.305(a)(2)(v)(A), the phrase “temporary wiring” is meant to include using more than one extension cord connected to a permanent outlet, or more than one piece of equipment temporarily connected to an extension cord that is connected to a permanent receptacle outlet. That covers almost all uses of extension cords in art, theater and entertainment. All extension cords used in these ways should be those with GFCIs built-in. They are readily available in stores. Get them.

TANNING BEDS GET IARC'S TOP CANCER RATING

http://www.cancer.org/docroot/NWS/content/NWS_1_1x_Tanning_Beds_Pose_Definite_Cancer_Risk_Agency_Say.s.asp, article dated: 07/28/09, by Rebecca V. Snowden

Tanning beds pose a greater cancer risk than previously believed, according to the International Agency for Research on Cancer (IARC), the World Health Organization (WHO) agency that developed the most widely used system for classifying carcinogens. The group has elevated tanning beds to its highest cancer risk category – "carcinogenic to humans" (Group 1). Tanning beds had previously been classified as "probably carcinogenic to humans."

IARC's decision was based on a comprehensive review of current research, which shows tanning bed use raises the risk of melanoma of the skin by 75% when use starts before the age of 30. The agency also found a link between tanning bed use and risk of melanoma of the eye. Melanoma accounts for less than 5% of skin cancer cases but causes a large majority of skin cancer deaths.

COMMENT: This doesn't leave a lot of options because the spray tan colorant, DHA, is only approved by the Food and Drug Administration if it can be applied without inhaling any or getting it in contact with the skin around the eyes or on the lips. Using a spray can tanning product or entering a spray tanning booth with patches covering your eyes and lips could result an owl-like appearance, that is, if you could live through the spray process without taking a single breath. I suggest we all get used to the shade we were born with and get on with it.

REMINDER TO GET THE EPA ART WASTE BOOKLET

For readers who do not yet have their copy of the "*Environmental Health and Safety Guide in the Arts: K-12 Schools, Colleges & Artists*." Go to www.epa.gov/region02/capp/ and in the middle of the page, click on "K-12 Schools." This is where people who want college information go wrong, because there are a number of college and university items to click on that look more related. We recommend reading these, too. However, for the waste booklet above, clicking on "K-12 School" will get you to the right place. The Guide will be listed as well as ways to download it or order a paper copy free.

ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobin Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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SAFETY CONSULTANTS SENTENCED TO PRISON

Editorial based on BNA, 39(37), 9/17/09, pp. 779-780

A second defendant has been sentenced to a one year prison term in a federal case charging members of IMS Safety Inc., of Middletown, NY for falsifying the qualifications of its training consultants. This decision comes on the heels of earlier cases in which some consultants were prosecuted for improperly training workers and one was prosecuted for selling training certificates rather than requiring workers to attend classes.

I suspect we are going to see a lot of actions against consultants as more and more states are requiring OSHA training certificates for construction, maintenance and other jobs in which hazardous machinery and/or toxic substances are used. At first glance, this may seem simple: just send the workers for training and get it done. But it is not simple.

For example, many employers have not been training their workers on various OSHA regulations for many years. And during this same time, it has been general practice to hire the least expensive labor. Among these workers often are people who do not speak English well enough to comprehend training or who speak English as their native tongue but can't read and write.

How do consultants tell employers that these workers they have employed for several years have not passed the training test and are not qualified? How do you convince employers that these workers have been lucky that they haven't hurt themselves or others? Instead, many trainers bow to pressure from employers, who also are paying their fee, to pass or certify these unqualified employees.

The proper alternative is for employers to alter their safety programs to accommodate these workers. But that is expensive. For example, the employer can bring in trainers who speak the employees' language and translate all of the training materials and tests. In addition, if there are toxic chemicals involved on the job, they also must translate their MSDSs and product labels! The law is clear, employees must not use product whose hazards they do not fully understand.

This problem is countrywide in all types of employment, but it is the untrained employees in schools and universities that I see most in my work. For schools to refuse a federal mandate to train and educate their own workers properly is particularly egregious. Administrators must address this problem by either reassigning untrained workers to jobs that do not involve tasks for which training is required, or to spend the money to get their program reorganized to accommodate the special needs of their workers. Administrators will soon find out that the most expensive employee they can hire is one who does not read and write English.

My advice to consultants: don't let employers pressure you to pass people who are not qualified.

CANDLE UPDATE (September 2, 2009)

Our data sheet “All About Wax” was last updated in 1999. So its not “all” about wax. This article will update information on candles and wax emissions.

TODAY, candles are still a major cause of house fires and there have been many recalls of candles by the US Consumer Product Safety Commission (CPSC) for hazards such as flames that suddenly flare to dangerous heights, for holders that catch fire, holders that break and spill flaming wax, wicks that fall out, and candles that tip over. And today, CPSC has banned one type of candle wick.

LEAD-CORE CANDLE WICKS. Some candles have soft cotton wicks such as one typically sees on taper candles used on dinner tables. But certain candles such as pillar candles, votive and tealight candles often have wicks that are rigid. These may have a fine metal wire in the wick that is consumed by the flame along with the fiber part of the wick. The metal fumes from these wires becomes airborne and settles on surfaces in the house. When this wire is made from lead or a lead alloy it can deposit lead fume in the home.

For decades, the CPSC would not address these wicks. They believed a 1974 voluntary agreement with candlemakers and importers not to use lead was sufficient. A petition by Public Citizen, the National Apartment Association, and National Multi Housing Council in 2001 presented evidence that the lead wicks were still in use and they released significant amounts of lead into homes and apartments. In 2003, the CPSC finally banned the lead-core wicks. However, ACTS believes lead wicks can still be found in some imported candles and candle making hobby kits.

RECENT CANDLE MYTHS. Some advertisers and manufacturers are misrepresenting their product. Below, four of the common claims are refuted.

1. Candles have been around for hundreds of years without causing health hazards. This is untrue. Candles emit many toxic substances (see the “All About Wax” data sheet for details). But the most obvious and visible substance is soot which is a recognized lung hazard. To use a visual example from the art world, art conservators are very familiar with the soot damage from votive candles on religious paintings and icons. It was the same with the lungs of our ancestors. Those old candle-lit cabins and houses contained unhealthy air and were dirty with candle soot.

2. The candle wax burns completely to form harmless carbon dioxide and water. This falsehood is easy to dispel. A flame resulting from complete combustion, such as in the burner of a well regulated gas stove, is almost invisible. That pale blue flame indicates the cooking gas is getting enough oxygen to completely burn to carbon dioxide and water.

If the gas stove flame develops a yellow tip, it indicates there is not enough oxygen admitted to the burner and incomplete combustion is occurring. Now the gas is incompletely burning to emit water, carbon dioxide, carbon monoxide, and carbon (soot). The yellow is from glowing carbon particles.

Wax releases many more toxic chemicals than stove gas when it burns because wax molecules are far larger and more complex than gas molecules. And candle flames are not blue—they are always a whitish yellow indicating the flame is aglow with incandescent soot and other carbon-containing atoms. As the particles rise, they cool, stop glowing, and become black candle soot. The other toxic hydrocarbon emissions created simultaneously in the flame are invisible.

3. Candle soot is carbon and harmless. Wrong. The soot from burning candles is of nanoparticle size (well under 0.1 microns in diameter). It can settle deep in your lungs similar to diesel soot particles. These fine particles are associated with a number of physical responses including asthma and strokes.

After they have been in the air a while, the soot particles begin to condense. Particles of candle soot have a positive charge which causes them to clump together around negatively charged airborne particles. This flocculation eventually creates charged clumps that are too heavy to float. They fall or stick by electrostatic attraction to everything in sight: walls, drapes, and furniture. Carpets slowly, almost imperceptibly, change to a darker, sooty color. The particles go through air-conditioning filters and vents become lined with soot which will also support mold growth in the ducts.

Soot resists normal household soaps and detergents. It usually takes strong solvent-containing cleaners to remove it. These solvents add additional toxic air-pollutants to the house.

Using candles could also jeopardize your insurance settlement for soot damage from a fire or a furnace malfunction. Candle soot analysis by professional engineers is appearing more frequently in property appraisal and litigation. Heating companies have successfully defended furnace malfunction lawsuits on the grounds that the homeowner (plaintiff) burned candles.

Of course candles are not the only soot source in many homes. Particles from fireplaces, gas appliances, and smokers may also be present. Frying can raise the temperature of cooking oils high enough to create smoke particles. Living near interstate highways or industrial sites can add more particles. So it is even more important not to needlessly add candle emissions to this pollution.

3. Aromatherapy candles are good for you. Wrong again. "Aromatherapy" and scented candles disperse scent or perfume chemicals in addition to the toxic chemical emissions and black soot. That scent comes from volatile aromatic oils added to the wax. These fragrance oils are unsaturated hydrocarbons and they soften the wax so that it doesn't burn as hot. Cooler burning produces even more soot and products of incomplete combustion. And now there are toxic combustion products from both the wax and the essential oils.

Many natural essential oils are toxic in their own right. Citrus oil (limonene) and pine oil (terpenes) are actually EPA-registered pesticides. Some oils like lavender and tea tree oil function as estrogen and are endocrine disruptors. (See "D-Limonene: Citrus and Terpene Solvents" data sheet.)

4. Unlike paraffin, bees wax and soy-based wax are natural and burn clean. Granted, you are supporting the big old petrochemical industry when you buy paraffin candles. But there is no evidence that burning one type of wax is significantly safer than burning another. Wax by any other name is still wax. Every wax will produce slightly different emissions depending on the temperatures at which they burn. But they all will create very similar toxic hydrocarbons and soot.

THE BOTTOM LINE: Burning any substance indoors, including candles, takes up oxygen and creates air pollution. There is no burning process that is good for your or your air quality.

OOPS-NEW LINK FOR THE EPA ART WASTE BOOKLET

We got several e-mails about problems finding the "*Environmental Health and Safety Guide in the Arts: K-12 Schools, Colleges & Artists*" at the location we sent you to. The correct link is now: <http://www.epa.gov/Region2/children/k12/english/art-1of5.pdf>

GRANITE AGAIN: RADIATION HAZARDS TO CUTTERS

Scripps Howard New Service, Isaac Wolf, 9/6/2009

In August, 2008, *ACTS FACTS* covered a *New York Times* article in which testing demonstrated high levels of radon gas emanating from a granite counter top. While not all granite counter tops are as radioactive as the one in the article, all granite will have some level of radioactivity. Now a new study called, "Implications of Granite Counter Top Construction and Uses," was presented at the Health Physics Society's annual meeting July 13 in Minneapolis. It is the first look by public health researchers at how radioactive granite dust could be harming workers.

Collaborating on the paper were Linda Kincaid, an industrial hygienist from Saratoga, CA, Al Gerhart, an Oklahoma City stonecutter, and Dave Bernhardt, a Salt Lake City health physicist. To assess the threat, Kincaid tested the air quality in Gerhart's granite-cutting shop while he cut the stone. Bernhardt then analyzed the results. He found that full-time granite workers could be exposed to radiation levels of up to 320 rem per year—more than 3,000 times above the U.S. Nuclear Regulatory Commission's radiation exposure limit of 0.1 rem per year for members of the general public. The radioactive dust bombards especially vulnerable tissue in the lungs with so called alpha particles—a particularly damaging form of radiation.

The Marble Institute of America, the leading trade association for the stone industry, says the study is not reliable and, besides, almost three-quarters of stone fabricators use advanced, water-based cutting techniques to minimize dust exposure most or all of the time.

Federal figures tell a different story. Inspecting 133 of the nation's 64,000 stone cutting facilities from October 2007 to September 2008, authorities from the Occupational Safety and Health Administration — part of the U.S. Department of Labor — issued 185 citations for respiratory violations and 54 citations for air contaminants, according to OSHA data.

COMMENT. This information is relevant to sculptors as well. Control that dust!

ACTS FACTS sources: the *Federal Register* (FR), the *Bureau of National Affairs Occupational Safety & Health Reporter* (BNA-OSHR), the *Mortality and Morbidity Weekly Report* (MMWR), and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobi Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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THE MONTHLY NEWSLETTER FROM
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November 2009

Vol. 23, No. 11

CIRQUE DU SOLEIL PERFORMER DIES DURING TRAINING

Canwest News Service, 10/18/09, Associated Press, 10/17/09 Editorial

A Cirque du Soleil performer was injured during a training session on October 16. He died in a Montreal hospital of head injuries the next day. Cirque issued a statement that Oleksandr Zhurov, a Ukrainian acrobat in his twenties, had joined the company a few months prior to the accident. Zhurov was training on equipment called the Russian swings when the accident occurred. The swings catapult performers up to 30 feet into the air where they execute aerial turns and jumps before landing either on their feet, on the shoulders of their partners, or atop a human pyramid.

A coroner's inquiry into the death is underway. Cirque said it will co-operate fully with the investigation. *ACTS FACTS* has reported previously on some of the precedent-setting safety procedures developed by Cirque. This is an unexpected tragedy for this company.

LEAD LEVELS IN BONE CONFIRMED AS MORTALITY PREDICTOR

Bureau of National Affairs, Occup. S & H Reporter, 39(38), 9/24/09, pp. 810-811

Harvard School of Public Health research confirms the widely held belief that lead levels found in bone, rather than blood, are a more accurate indication of mortality from exposure to the metal. The study found that the risk of death from cardiovascular disease was almost six times higher in study participants with the highest levels of bone lead, compared to those with the lowest levels.

Lead levels are commonly determined by taking blood samples. Lead in blood has a half-life of only 30 days, meaning blood levels only provide a "window of a few months of exposure," said Marc Weisskopf, assistant professor of Environmental and Occupational Epidemiology at the Harvard School of Public Health. By contrast, bone is the repository of lead in the human body and can show long-term, cumulative exposure over many years, allowing for "a very strong association" between lead levels and cardiovascular mortality, Weisskopf said.

By the time lead has been deposited in the bone, "the damage has been done" to the body, Weisskopf said. "It's not easy to bring bone lead down, and it may not be that bringing the bone lead down is going to reverse the effects that have already occurred," he said.

COMMENT. This study plus studies of children who received chelation treatments to reduce stored lead without any improvement in mental or physical function, reinforce ACTS' opinion that attempting to remove lead from the bones by chelation is not usually helpful. As Weisskopf says, the damage has already been done by the lead by the time it is deposited in the bone. In addition, chelation treatments mobilize this bone lead and return it to the blood stream which may provide further damage to the body. Except in cases of extremely high blood lead levels, it is probably best to leave bone lead in place.

OSHA UPDATES STANDARDS FOR PERSONAL PROTECTION

74 FR 46350-46361 Sept 9, 2009

Effective October 9, 2009, OSHA regulations have updated safety standards referenced in each of the personal protective equipment standards. The new standards are incorporated by reference into section 1910.6 of the code. Also provided in the rule are addresses and contact information for ordering these standards. All of the standards are American National Standard Institute (ANSI) standards except those for foot protection which are American Society for Testing and Materials (ASTM) standards. A summary eye and face, head, and foot protection standards are below:

1910.133 Eye and face protection. (b) *Criteria for protective eye and face protection.*

(1) Protective eye and face protection devices must comply with any of the following consensus standards: (i) ANSI Z87.1-2003; (ii) ANSI Z87.1-1998; (iii) ANSI Z87.1989

1910.135 Head protection. (b) *Criteria for head protection.*

(1) Protective head protection devices must comply with any of the following consensus standards: (i) ANSI Z87.1-2003; (ii) ANSI Z87.1-1997; (iii) ANSI Z87.1986

(An Appendix B for **Non-Mandatory Compliance Guidelines for Hazards Assessment and Personal Protective Equipment Selection** also provides a history of changes in head protection which have redesignated the electrical protective classifications for helmets. Readers interested in these criteria and our advice for hard hat use in art and theater and send an SASE.)

1910.136 Foot protection. (b) *Criteria for foot protection.*

(1) Protective foot devices must comply with any of the following consensus standards:
(i) ASTM F-2412-2005 "Standard Test Methods for Foot Protection," ASTM F-2413, "Standard Specification for Performance Requirements for Protective Footwear."
(ii) ANSI Z41-1999
(iii) ANSI Z87.1986

SEPARATE & EQUAL? After each of the rules above, there is another provision which says that eye, face, head or foot "protection devices that the employer demonstrates are at least as effective as protective as head protection devices that are constructed in accordance with one of the above consensus standards will be deemed to be in compliance with the requirements of this section."

Employers are unlikely to institute testing sufficient to prove a protective device meets the same level of protection that those meeting ANSI or ASTM standards. However, this does give the employer an option to choose equipment that meets even more recent standards than those listed by OSHA, since ANSI or ASTM will have done the required testing. New standards are released every few years and ACTS advice usually is to purchase equipment that meets the most recent standards.

OSHA FINES NORTH DAKOTA MUSICAL FOR PYRO ACCIDENT

The Dickinson Press, N. Dak, by Lisa Call, 10/10/09--assistance from Ken Kosanke, Pyrotechnician.

Since 1965, the Theodore Roosevelt Medora Foundation has put on a summer musical in Medora, ND, about U.S. President "Teddy" Roosevelt when he was a Rough Rider cowboy in the badlands during the 1880s. Over the years, the musical has been revised and is now a fast-moving mix of singing, dancing, variety acts, dramatic scenes, horses, riders, wagons, and stunt men shooting, fighting and falling from large rocks accompanied by theater organ music. During the show's patriotic finale, Roosevelt's recorded voice is heard from a darkened stage as rockets burst in the sky, a huge Roosevelt "face-in-fireworks" glows on the site of the butte, and the stage sparkles.

Last August 27, a pyrotechnics accident at the production left a woman with first and second-degree burns. Reportedly, Kathy Yu, 22, of Taiwan, was carrying a box with four mortars to be used during a pyrotechnics scene of the musical when two of them ignited, burning her face, neck, arm and torso.

OSHA INSPECTS. Bruce Beelman, Occupational Safety and Health Administration area director, said an investigation of the incident was conducted on September second. Two citations were issued.

The first citation, in the amount of \$2,250, was issued for employee exposure to burn or fire explosion hazards which resulted in an injury due to premature ignition of pyrotechnic shells, Beelman said. The citation indicated the Medora Foundation needed to follow National Fire Protection Association guidelines requiring electrical firing unit cables be disconnected when loading mortars or setting up at the display site.

The second citation issued, also for \$2,250, consisted of three violations.

- a) Failure to provide personal protective equipment such as flame resistant clothing, protective glasses and face shields to employees exposed to burn or explosion hazards.
- b) Failure to conduct an OSHA-required hazard assessment to determine which personal protective equipment would be most appropriate.
- c) Failure to train workers to use personal protective equipment.

House Manager, Jeremiah Swenson, who has worked at the musical for the past six years, reportedly said pyrotechnic safety training provided to workers is very brief, no protective equipment is provided, and numerous people handle the pyrotechnics portion of the show. Yet only a licensed pyrotechnician and his or her trained assistants should ever have contact with pyrotechnics.

UPDATE ON PCBs IN CAULK

SOURCE: EPA Press Release: 09/25/2009, Contact: Dale Kemery, kemery.dale@epa.gov 202-564-7839
ACTS FACTS, September 2009, covered PCBs in pool caulk, paints and other materials found in older buildings. Shortly after we published that article, the Environmental Protection Agency issued a press release on Guidance to Communities on *PCBs in Caulk of Buildings Constructed or Renovated Between 1950 and 1978*. In this document, EPA announced a series of steps that building owners and school administrators should take to reduce exposure to PCBs including:

- Cleaning air ducts
- Improving ventilation by opening windows and using or installing exhaust fans where possible
- Cleaning frequently to reduce dust and residue inside buildings
- Using a wet or damp cloth or mop to clean surfaces
- Not using dry brooms or dusters in areas near potential PCB-containing caulk
- Using vacuums with high efficiency particulate air (HEPA) filters
- Washing hands with soap and water often, particularly before eating and drinking
- Washing children's toys often

EPA also recommends testing peeling, brittle, cracking or deteriorating caulk directly for the presence of PCBs and removing the caulk if PCBs are present at significant levels. Alternately, the building owner can assume the PCBs are present and proceed directly to remove deteriorating caulk.

This information is crucial for building managers and for architects planning building renovation or demolition. Polychlorinated biphenyls, or PCBs, are man-made chemicals that persist in the environment and were widely used in construction materials and electrical products prior to 1978. PCBs can affect the immune system, reproductive system, nervous system and endocrine system and are potentially cancer-causing if they build up in the body over long periods of time.

The agency has created a website, <http://www.epa.gov/pcbsincaulk>, with updated information on this issue. Concerned parties can also call an EPA hotline toll free at 1-888-835-5372. The agency is also conducting new research to guide EPA in making further recommendations on long-term measures to minimize exposure and prioritize these actions.

NANOSILVER IN THE WASH: A SECOND STUDY

SOURCE: *Chemical & Engineering News*, 10/5/09 p. 12

Socks and other garments that stay odor-free thanks to antimicrobial nanoscale silver particles are increasingly showing up on store shelves. But manufacturers apparently felt no obligation to find out what happens to the silver when the products are washed. ACTS reported on the first study of this question last year. Researchers at Arizona State University rinsed out silver-laden socks in plain distilled water and found that silver was released. (C&EN, 4/14/08, *ACTS FACTS*, 6/08).

Now new research by Bernd Nowack and colleagues at the Swiss Federal Laboratories for Materials Testing & Research provides a first look at the behavior of nanosilver textiles under real-world washing conditions (*Environ.Sci.Technol.*, DOI:10.1021/es9018332). The researchers tested nine textiles and found that the percentage of total silver lost during washing varied from less than 1% to 45% depending how well the particles are incorporated into the fiber and the washing conditions.

Under typical alkaline washing conditions (pH 10-11) with high levels of surfactant, the amounts of silver released were 10 times lower than at a neutral pH7. But when a bleaching agent such as hydrogen peroxide or peracetic acid was added, the dissolution of silver was greatly accelerated.

More than half of the silver that was released in the washing machine was in the form of particles larger than 450 nanometers in diameter. But researchers have yet to determine what happens to these silver particles when they go down the drain. Silver is regulated by most water authorities in the range of one part per million because it is highly toxic to microorganisms in water treatment plants. It seems to ACTS that manufacturers should be required to research fully the potential environmental damage their product could cause BEFORE the product is widely distributed. Two studies, one little one in Arizona and a bigger one in Switzerland is pathetic.

ACTS FACTS sources: the *Federal Register (FR)*, the *Bureau of National Affairs Occupational Safety & Health Reporter (BNA-OSHR)*, the *Mortality and Morbidity Weekly Report (MMWR)*, and many other publications. Call for information about sources. Editor: Monona Rossol; Research: Tobin Zausner, Diana Bryan, Sharon Campbell, Robert Pearl, Brian Lee, Pamela Dale, Kathy Hulce, Pat F. Sheffield; Staff: John Fairlie, OES.

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OSHA CITES SMALL FOUNDRY: \$254,000 IN FINES PROPOSED

Region 1 News Release: 09-1297-BOS/BOS 2009-356, 10/23/09; WMUR-TV, Chanel 9, 11:06 am EST, 11/6/09;
& Concord Monitor, 10/24/09, by Trent Spiner, Monitor Staff.

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) cited the Franklin Non-Ferrous Foundry for 17 alleged willful and serious violations of workplace health and safety standards. The New Hampshire foundry has been cited several times over the past decade for similar violations. But this time, the foundry faces \$254,000 in fines following comprehensive OSHA inspections begun in April triggered by a high blood lead tested recorded in one of the workers. "The sizable fines proposed in this case reflect the fact that this employer well knows these safeguards are required to protect the health of its workers, yet has repeatedly refused to provide them," said Rosemarie Ohar, OSHA's area director in New Hampshire.

The investigation turned up a wide-ranging series of potentially deadly violations, including unmarked confined spaces under furnaces, electrical malfunctions and poor training. However, "Chief among the hazards identified in the foundry are inadequate or absent protections for workers whose duties expose them to airborne concentrations of lead," said Ohar. Tests showed lead particle levels more than three times the legal limit in some areas of the building.

According the OSHA report, inspectors were called to the factory in March when doctors found high levels of lead in the blood of a foreman who performed finishing operations. Contrary to federal law, the worker was not allowed to move to a safer area in the foundry, the report said. By May, John Wiehl, the owner, had also failed to conduct federally mandated follow-up testing the report said.

CITATIONS CONTESTED. Wiehl has contested OSHA's citations and has defended himself in press interviews. One claim he makes is that the citations are not his fault. Instead, they are the fault of employees he cannot control, in part, because he must spend a significant amount of time away from the foundry to look after his ailing 86- year-old mother in a nursing home.

"In a small place like mine, where I'm not observing everybody all the time - what they do, I don't see," he said. "People do what they want to do, and unless I take the tack of being forceful and saying, 'You've got three days off without pay for screwing up,' that's not going to change." In other words, Wiehl says that he could control his employees by penalizing them for violations, but he hasn't done it. Clearly he has not enforced the OSHA safety regulations as he is required to do.

Wiehl also said none of his employees has complained about working conditions. "Otherwise I'd look at them and say wear your mask," he said. But the OSHA report said the factory failed to provide adequately fitting testing for some of the masks others did not fit snugly because the workers had facial hair. In addition, officials said lead dust-laced helmets and facemasks were found near a lunchroom where employees took their breaks. Without proper fit testing and respirator maintenance, it would be meaningless for Wiehl to tell workers to wear a mask.

Wiehl also thinks lead is probably no more dangerous than fast food restaurants or poor diets. He said experts have believed for decades ingesting lead can cause diminished brain function in children and harm multiple vital organs in adults. But Wiehl says he has melted and poured metal alongside workers on the floor of the Foundry for more than 20 years without side effects. Perhaps his failure to understand the basic concepts of lead's hazards are evidence that he *has* suffered ill-effects.

Wiehl also says he cannot cease using lead even though there are many casting alloys that do not contain it. Lead is a small but important part of red bronze, one of the alloys the factory uses. "Sometimes certain customers require a particular metal, so unless I want to give up those customers ... I'm stuck between a rock and a hard place," he said. Wiehl also cites a bad economy and customers moving to cheaper foundries in China. He says he had to lay off about three employees last year.

LESSONS FOR OTHER LEAD-USING BUSINESSES & SCHOOLS. This small New Hampshire foundry currently employs 3 workers at the factory itself and has a total of 5 employees. In size, it is similar to many small art businesses and college art departments that use lead to make sculpture, traditional paintings with lead grounds, stained glass, letterpress books, and pottery.

Lead can be replaced in art and craft work. There are many lead-free casting alloys, solders and ceramic glazes. There are premixed paints and grounds and printing processes that don't use lead type. If owners or administrators reject these safer materials, then they should comply with the expensive OSHA Lead Standard requirements for monitoring and training of all potentially exposed workers. But most of the lead-using schools and businesses I see around this country don't comply. I hope these large fines for violating the lead laws will provide them an incentive.

STUDY FINDS NANOPARTICLES CROSS THE PLACENTAL BARRIER

SOURCES: *BNA-OSHR*, 39(46), 11-19-09, pp. 985-986, *Environmental Health Perspectives*, "Barrier Capacity of Human Placenta for Nanosized Materials," <http://www.ehponline.org/members/2009.0901200/0901200.pdf>

The work of a team of 10 Swiss researchers appeared in the peer-reviewed journal *Environmental Health Perspectives*. The study called "Barrier Capacity of Human Placenta for Nanosized Material," investigated whether or not nanoparticles can pass through the placenta. The researchers chose to study placental transfer for three reasons:

1. Airborne ultrafine particles such as those in air pollution from diesel exhaust are about the same size as nanoparticles. These have already have been shown to affect the fetus.
2. People are expected to have some nanoparticles injected into them for medical purposes, such as vaccinations.
3. Previous research has not addressed the question of whether nanoparticulates may cross the placenta.

The research team used a test system with a human placenta in the laboratory to determine whether fluorescent polystyrene particles measuring 60, 80, 240, and 500 nanometers in diameter would pass through. They found that polystyrene particles measuring up to 240 nanometers were taken up and crossed the placental barrier.

Not all nanoparticles may pass through, however, the researchers said. "It has been shown that polyethylene glycol-coated gold particles measuring up to 30 nanometers did not cross the placenta," they said. These diverse findings mean that some nanoparticles may and some may not pass through, which underscores the need for further toxicological studies on this organ system, they said.

ITALIAN STUDY CONFIRMS DIOXIN CAUSES CANCER

SOURCE: *Environmental Health* 2009, 8:39doi:10.1186/1476-069X-8-39

People living and working in Seveso, Italy, who were exposed to 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) during an industrial accident in 1976 have an increased risk of developing cancer, according to an updated cancer incidence study published September 15. The study examined cancers diagnosed from 1992 through 1996, adding to data on Seveso residents that has been collected since 1977. The team of researchers was led by Angela Pesatori of the Fondazione IRCCS Ospedale.

Maggiore Policlinico, a local hospital associated with the University of Milan, confirmed an anticipated excess risk of certain types of cancer. Although the International Agency for Research on Cancer and the U.S. Environmental Protection Agency have classified TCDD as a human carcinogen, scientific debate persists on the actual cancer risk posed to the general population, Pesatori said. Industrial cohorts were mainly comprised of men showing excess risk of lymphatic and hematopoietic tissue neoplasms in the most exposed zones. The most updated mortality of the IARC international cohorts showed a twofold increased risk of breast cancer among female workers.

AUTO EMISSIONS INCREASE LEAD PAINT HAZARDS

SOURCE: *C&EN*, October 26, 2009, p. 8 & *Env. Sci. & Tech.*, DOI:10.1021/es901077m

Air pollution found in urban areas may actually react with lead paint to increase release of lead pigments from the paint's surface. Two pollutants, ozone and nitrogen dioxide, which are linked to internal combustion engine emissions, were shown in a study in *Environmental Science & Technology* to react with surfaces coated with lead-based paint. The interaction may increase the risk of lead poisoning in children, particularly in urban environments and in the developing world.

It is known that ordinary household dust becomes contaminated with lead when lead paint deteriorates. But only a few studies have focused on factors that facilitate the release of lead from paints. Now, environmental exposure scientist Rufus D. Edwards and his colleagues at the University of California, Irvine, School of Medicine have examined the impact of nitrogen dioxide and ozone, two compounds associated with auto emissions, on surfaces containing lead paint.

"Typically, paint is composed of pigment granules and an unsaturated polymeric binder that holds them together," Edwards says. "We know that ozone and nitrogen dioxide react with unsaturated compounds. We were interested in whether this makes lead pigment granules more available to children's hands," he says.

The Irvine team applied a thin, uniform coating of lead paint to stainless steel surfaces. After exposing the surfaces to ozone and nitrogen dioxide, the researchers evaluated them by reflectometry and scanning electron microscopy. They also mechanically wiped each surface and measured the lead concentration on the wipe. Exposure to these pollutants changed the surfaces' morphology and significantly increased the amount of lead that can be wiped off them.

This study adds another factor to consider when assessing the risk of lead exposure, not only for people in U.S. cities where lead paint remains a problem, but in developing countries, many of which still sell lead paint and have booming and polluted urban centers, Edwards says.

This study "highlights the importance of the often underappreciated science of heterogeneous chemistry in indoor environments," says Richard Reiss, an environmental health scientist at Exponent, a consulting firm. "I suspect there are other connections between environmental contaminants that might be discovered with more study of indoor surface chemistry."

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