



Postcards from

Safety is about people—protecting them, training them to work safely and sending them home to their families each night.

This noble pursuit—and the desire to do it better—brought nearly 3,900 SH&E professionals and 2,000 exhibitors to Las Vegas, NV, for ASSE's Safety 2004. From start to finish, Safety 2004 delivered a unique educa-

tional experience, replete with opportunities to gather lots of take-away knowledge from subject-matter experts, fellow practitioners and corporate leaders.

Attendees also heard from representatives of international sister organizations CSSE and IOSH, from the leaders of OSHA and NIOSH, and from experts in organizational management and culture.



Las Vegas

Through it all, the message was clear: SH&E is a vital component of success in today's business world—one that attendees must continue to advocate at every turn. Energized by what they learned over the week in Las Vegas, those at Safety 2004 would surely agree with the sentiment expressed by ASSE's newest Fellow Roger Brauer: "Is this a great profession or what?"

PDC PHOTOS BY ERIC HERZOG/HERZOG PHOTOGRAPHY

(Far left): Safety 2004 attendees experienced unmatched opportunities to participate in dialogue about the SH&E profession.

(Middle left, top): 2004-05 Society President Gene Barfield presents the Past President's plaque to 2003-04 Society President Skipper Kendrick.

(Middle left, bottom): Attendees learned first hand about the latest SH&E products and services at this year's recordbreaking exposition.

(Middle, top and bottom): Sharing with colleagues was a real benefit of ASSE's annual conference.

(Above, top): Distinguished panelists at ASSE's Executive Summit included DuPont's Paul Tebo; Bell Helicopter Textron's John Murphey; Bahrain Petroleum's Hussain Tadayon; and Bechtel's Riley Bechtel.

(Above): Exchanging ideas helped attendees gain new perspectives on common problems and challenges.

(Below): Attendees shared perspectives and ideas during concurrent sessions, and perused the latest technical publications offerings from ASSE during breaks.

(Below, middle): NIOSH's John Howard spoke to a packed room during his special plenary session.

(Right): ASSE's newest Fellow Roger Brauer with President Kendrick.



Several companies were sponsors for Safety 2004:

Comprehensive Loss Management Inc.
Minneapolis, MN
Briefcases & luggage tags

BST Inc.
Ojai, CA
Proceedings on CD-ROM

Unilever
Englewood Cliffs, NJ,
and Greenwich, CT
Conference notepads

This year's exposition was sponsored by:

Industrial Safety & Hygiene News
Troy, MI



(Above): Safety 2004 marked the first meeting of ASSE's new Safety Professionals and the Latino Workforce common interest group.

(Right): A large contingent of student members attended Safety 2004. The conference featured several events and activities dedicated to advancing their development as future SH&E professionals. In addition, the ASSE Foundation presented 10 student scholarships.

(Above and right): This year's conference offered many thought-provoking sessions, pre- and post-conference seminars and technical tours, helping attendees to expand their knowledge and develop new skills.

Executive Summit

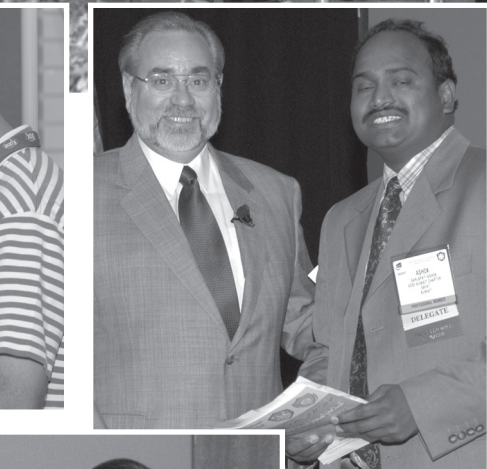
This summit brought together four high-level corporate leaders who shared their perspectives on the role of SH&E in today's business world. Along with moderator Tom Cecich (left), the distinguished panelists were Paul Tebo, vice president, safety, health and environment, E.I. DuPont de Nemours & Co; John Murphey, chair emeritus, Bell Helicopter Textron; Hussain Tadayon, chief executive Bahrain Petroleum Co.; and Riley Bechtel, chair and CEO, Bechtel Group Inc.

According to each executive, safety is a leading reason why their companies are considered world-class organizations. Each noted that safety must be a fundamental value held by all involved—from the top executive to the frontline worker. According to Bechtel, "In the end, safety is what it's all about, along with ethics, integrity, performance and leadership." Murphey echoed that stance. "We have a responsibility as leaders to provide people with a safe place to work." Tadayon also noted the importance of viewing safety on par with other company imperatives such as production and efficiency. "At BAPCO, EHS is in perfect harmony with our other priorities," he noted.

Each leader spoke about the need to invest in safety and discussed the current focus on proving a return on investment. "I don't think there is a need to make a business case for safety," Bechtel said. "It's just a basic requirement for doing business." Tadayon called on ASSE to develop guidance that will help SH&E professionals turn intangibles into tangibles—things they can share with company leadership in management terms. Added DuPont's Tebo, "You have to understand there is huge value to not having anybody hurt. We have to work together to articulate what that is."

The panelists also spoke about the need for safety to be a core value, and offered advice on ways to improve the visibility of the safety function and the corporate role of SH&E professionals. Among the suggestions, Murphey advocated mentoring a senior executive; Tadayon urged practitioners to be proactive. "Don't wait to be asked," he advised. Tebo offered three simple guidelines: "Keep safety visible. Keep it personal. Keep it simple." Added Bechtel, "I think safety professionals should best view themselves as improvement agents rather than change agents." He also said that practitioners must refuse to believe that cultural differences prevent world-class safety performance, and advised them to look at what companies are doing in six sigma. "Once they've done all that [process control, analysis, improvement], they'll come back to . . . improve the behavioral inputs to decisions that each person on the tools makes as they work." Finally, using the analogy of a child knowing

which parent to talk to about doing something, he advised, "Keep at it, just do the right thing. If it's the right thing and it's a good organization, someone will stand up and commend you for what you did and protect you if you need that."



(Left): Skipper Kendrick is joined by Garlapati Ashok from the Kuwait Chapter. He was the first-ever international chapter delegate to attend an HOD meeting.

(Below, left): OSHA Administrator John Henshaw talks with an attendee following a ceremony to renew the alliance between his agency and ASSE.



The Safety 2004 exposition was a great opportunity to visit with leading industry vendors, view the latest products and see products in action. This year's program also featured hands-on demonstrations and several dedicated Expo Education sessions during which attendees learned about specific product/service solutions.



AMERICAN SOCIETY
OF SAFETY ENGINEERS

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about ASSE today, here's how:

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- Download applications from the ASSE website - www.asse.org
- Email your friends and colleagues directly through our "refer a friend" email tool www.asse.org/frjoin.htm

Go to www.asse.org/passiton.htm
for more information and helpful recruitment tips and tools.

ASSE reserves the right to substitute prizes of equal value.

**You could win
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a chance to win
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Sponsor as many new, full ASSE members as you can between April 1, 2004 and March 31, 2005 and you could win cash prizes. Sponsor just one new member and your name will be entered into a drawing to win a plasma television.

Individual prizes
(awarded to those who recruit the most new members)

1st place \$1,000

2nd place \$500

3rd place \$250

**ASSE Regions and
Chapters can win too!**

The ASSE Region and Chapter with the largest percentage increase of new members will also win cash prizes.

ASSE Region prize: \$1,000

ASSE Chapter prize: \$500

Winners will be announced
in May 2005.

Hotlinks

ASSE

American Society of Safety Engineers
www.asse.org

CSB

Chemical Safety & Hazard Investigation Board
www.csb.gov

DOE

Dept. of Energy
www.doe.gov

DOL

Dept. of Labor
www.dol.gov

DOT

Dept. of Transportation
www.dot.gov

EPA

Environmental Protection Agency
www.epa.gov

HHS

Dept. of Health & Human Services
www.dhhs.gov

MSHA

Mine Safety & Health Administration
www.msha.gov

NIOSH

National Institute for Occupational Safety & Health
www.cdc.gov/niosh

NRC

Nuclear Regulatory Commission
www.nrc.gov

NTSB

National Transportation Safety Board
www.nts.gov

OSHA

Occupational Safety & Health Administration
www.osha.gov

HAZMAT REGULATIONS

Final Rule Delayed on HazMat Loading, Unloading & Storage Regs

On Oct. 30, 2003, RSPA published a final rule to clarify the applicability of the Hazardous Materials Regulations to loading, unloading and storage operations. RSPA has delayed the effective date of the final rule from Oct. 1, 2004, to Jan. 1, 2005. RSPA notes that the issues raised by appellants concerning the final rule are detailed and complex; delaying the effective date will provide sufficient time for RSPA to fully address the issues raised.

STANDARD REVISION

OSHA Proposes Revisions to Electrical Installation Standard

OSHA is seeking comments on proposed revisions to its electrical installation standard, which was last updated in 1981. "These changes will strengthen worker protections and help eliminate inconsistencies and possible confusion between OSHA's requirements and many state and local building codes which have adopted updated NFPA and NEC provisions," says OSHA Administrator John Henshaw.

Proposed changes to OSHA's general industry electrical installation standard (1910 Subpart S) focus on safety in the design and installation of electric equipment in the workplace. The changes draw heavily from the 2000 edition of the National Fire Protection Assn.'s (NFPA) Electrical Safety Requirements for Employee Workplaces (NFPA 70E), and the 2002 edition of the National Electrical Code.

OSHA's existing electrical standard (1910.302-308) is based on the 1979 edition of NFPA 70E, a national consensus standard developed by industry, labor and other allied interests. OSHA believes the 2000 edition of NFPA 70E should be the foundation of the revised standard because it provides nationally recognized safe electrical installation requirements. For more information, visit www.osha.gov.

PROPOSED RULEMAKING

OSHA Announces Limited Reopening of PPE Rulemaking Record

OSHA recently announced that it will reopen for 45 days its rulemaking record on the proposed rule, Employer Payment for PPE. A significant number of comments were received; after analyzing the issues raised, the agency has determined that further information is necessary to fully explore the issues concerning PPE that is considered to be a "tool of the trade."

OSHA is seeking comments on issues that relate to whether or how a general rule on payment for PPE should address types of gear that are typically supplied by the employee, taken from one jobsite to another or from one employer to another, and considered to be "tools of the trade."

Pipeline Safety Improvements

According to Research and Special Programs Administration (RSPA), the Office of Pipeline Safety (OPS) has completed most of the work required under a two-year-old law to make the nation's intricate network of gas and liquid fuel pipelines safer. The improvements mandated by the Pipeline Safety Improvement Act of 2002 include completion of a full-scale inspection of all large liquid pipeline operators, development of standards to evaluate qualifications of pipeline safety employees, and the creation of a national pipeline mapping system to help local officials keep tabs on safety efforts associated with local pipelines.

"These improvements have helped to strengthen oversight and safety of our nation's pipeline system," says RSPA Deputy Administrator Samuel Bonasso. "We must continue to ensure that the people and environments near pipelines are protected."

Federal and state actions completed include:

- Establishment of regulations directing natural gas transmission operators to adopt and implement an integrity management program similar to regulations RSPA issued more than two years ago for operators of hazardous liquid pipelines.

- Completion of comprehensive integrity inspections of all large liquid pipeline operators.

- Development of a standard for federal and state pipeline inspectors to evaluate the qualifications of pipeline operators' safety employees.

- Inspection of more than half of all inter- and intrastate pipeline operators for compliance with the new standard.

- Response to 40 NTSB recommendations with work underway on completion of the remaining 10 safety recommendations.

- Removal from NTSB's "most wanted" list.

- Development and implementation of a five-year research and development plan for improved pipeline technologies.

- Completion of the National Pipeline Mapping System to provide information to local officials on the location of pipelines.

In related news, in the June 14, 2004, *Federal Register*, RSPA published a final rule to provide its periodic update of pipeline safety regulations. This rule incorporates the most recent editions of the voluntary consensus standards and specifications referenced in the federal pipeline safety regulations. In addition, the rule increases the design pressure limitation for new thermoplastic pipe; allows the use of plastic pipe for certain bridge applications; increases the time period for revision of maximum allowable operating pressure after a change in class location; and clarifies welding requirements. The final rule became effective July 14, 2004.

In addition, OSHA has issued a new safety and health information bulletin that focuses on pipeline safety. Specifically, the bulletin discusses preventing fatal accidents or injuries for workers involved in de-watering of pipelines, a process conducted following the construction of the pipelines. The bulletin highlights potential hazards associated with the operations and focuses on work practices that will reduce the potential for unexpected separation of temporary de-watering pipes. The bulletin also provides background information on the procedures involved in ensuring the integrity of installed pipelines, and re-emphasizes OPS regulations on pipeline safety. Also included are descriptions of hazards involving insufficient anchoring, worn couplings, excessive air pressure and lack of training.

For more information on pipeline safety, visit <http://ops.dot.gov>.

Current provisions which require PPE usually state that the employer is to provide or ensure the use of PPE. Certain provisions specify that the employer is to provide PPE at no cost to the employee; others suggest that the PPE is owned by the employee, while other provisions are silent as to who is obligated to pay

for this equipment. For more information, visit www.osha.gov.

**HAZMAT TRANSPORT
RSPA Publishes
HazMat Rulemaking**

In the June 22, 2004, *Federal Register*, Research and Special Programs Administration (RSPA) published two rulemaking documents. The first is a final rule that reflects amendments based on appeals to its July 2003 final rule, which amended Hazardous Materials Regulations (HMR) based on corresponding provisions of internation-

al standards. The revisions were made to facilitate the transportation of hazardous materials in international commerce. The final rule became effective June 22, 2004.

In a second rulemaking document, RSPA proposes to further amend the HMR to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements.

These revisions are necessary to facilitate the transport of hazardous materials in international commerce. They reflect recent changes to the International Maritime Dangerous Goods Code, International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air, and the United Nations Recommendations on the Transport of Dangerous Goods. *Comments on the proposed rule must be received by Aug. 23, 2004.* Comments should be identified by the docket number (RSPA-04-17036) and may be submitted via DOT's electronic docket site at <http://dms.dot.gov>.



**Managing Human Error
in Complex Systems**

October 13 & 14, 2004
Embassy Suites Hotel, Tampa, Florida
Sponsored by
Error Management Solutions, LLC

Human error is associated with 60 to 80% of all accidents in complex, high-risk systems. Managing human error is therefore fundamental to maintaining the viability and profitability of any organization. This intensive 2-day seminar provides training in the application of innovative methods for managing human error in a variety of high-risk industries including aviation, healthcare, manufacturing, construction, and mining.

Attendees will learn how to...

- Conduct an applied human error analysis during an accident or incident investigation;
- Utilize the **Human Factors Analysis and Classification System (HFACS®)** to identify systemic causes of human error;
- Implement the **Human Factors Intervention matrix (HFIX®)** to develop focused, data-driven safety programs;
- Develop a human error database and tracking system for evaluating the effectiveness of intervention programs.

Seminar Speakers

Dr. Shappell and Dr. Wiegmann are internationally renowned experts in human factors and error management. They have received awards from several prestigious organizations including the *Flight Safety Foundation*, the *Aerospace Medical Association*, the *American Psychological Association*, and the *Aerospace Human Factors Association*.

Registration:

Early registration for this intensive 2-day seminar is \$1,500 up to September 10, 2004. Registration after this date is \$1,750. Space is limited, so early registration is highly encouraged.

Register at errorsolutions.com or email wiegmann@errorsolutions.com for more information.

All participants will receive a copy of the best-selling book written by the seminar speakers!

A Human Error Approach to Aviation Accident Analysis
The Human Factors Analysis and Classification System



Wiegmann & Shappell (2003). Ashgate Pub. ISBN: 0754618730

ABSENCE RATES

Employee Absence Rates Remain Low in 2003, BNA Finds

Rates of absenteeism remained close to record lows in 2003. For the second consecutive year, absence rates averaged 1.6 percent per month—a tenth of a point higher than 1997, which had the lowest year-end rate in the survey's 30-year history. The BNA survey found that:

- Although absence rates typically increase as winter weather approaches, in 2003 the trend was fairly moderate. Monthly absence rates in the fourth quarter averaged 1.6 percent of scheduled workdays, up from 1.4 percent in the previous quarter and on par with the fourth quarter of 2002.
- **Unscheduled absence rates were lowest among Northeastern employers, as the 12-month average of median absence rates fell from 1.5 percent in 2002 to 1.3 percent in 2003, the lowest year-end average on record.**

• Absenteeism rates remained steady or declined last year among the major industry sectors. For instance, the year-end average of median absence rates dropped a tenth of a point (to 1.9 percent) in the nonbusiness sector, despite a slight increase among healthcare establishments (1.7 percent to 1.8 percent). (Further details and breakdowns by industry, size, and region are contained in the full report.)

BNA's survey of job absence has been conducted quarterly since 1974. Absence

Rules & Regs continued on page 52

On June 10, 2004, due to the cooperation of local ASSE and AIHA members, a title protection bill became law in South Carolina. In this column, ASSE member Linda Rackley, CIH, recounts some activities that led to the passage of this law. ASSE does not support certification-specific title bills, though its chapters are free to do so if a majority of chapters in a state agree. A position paper explaining ASSE's stance on this issue is being developed by the national Governmental Affairs Committee. ASSE encourages members to participate in government affairs.

The pursuit of title protection legislation has a long history in industrial safety and hygiene organizations. As the federal government began rulemaking in the 1970s to require safe workplaces, a need arose for professionals in both disciplines to be recognized. Government affairs committees sprang up within ASSE and AIHA. As both groups worked to have OSHA and EPA recognize their respective professionals, the need for the titles of CSP and CIH to be defined in the legal arena became evident. Title protection was needed to prevent fraudulent use by unqualified individuals and for recognition within the fields of asbestos and lead abatement.

In South Carolina during the late 1990s, an ad hoc group known as the Title Protection Committee was formed that represented both ASSE and AIHA local members. The group planned to review model legislation provided by the two organizations and develop a draft bill. This draft was then taken to the members of the three South Carolina chapters of ASSE and the South Carolina members of AIHA's Carolinas Section for review and comment. The three ASSE chapters discussed the effects such a bill would have on the ability of non-CSP and non-CIH professionals to practice in the SH&E field. A meeting was held with all interested parties to relay the purpose and intent of the bill and to seek resolution within the chapters. The discussion proved beneficial as it allowed the dissenting group the opportunity to seek answers to key questions. Following the meeting, those resisting the bill chose not to oppose the introduction and passage of the bill.

With the draft bill in hand, the committee set out to address the concerns of any party or entity in South Carolina that may have an interest in the bill. The committee wanted to have these discussions outside of the legislative process so that once the bill was introduced, there would be no opposition. The initial efforts involved discussion with the director of the South Carolina Dept. of Labor, License and Regulation (DLLR). Through DLLR, the state licenses many professions; there are also many boards and commissions that regulate these professions. South Carolina also has a state-authorized occupational safety and health plan administered by DLLR. Through the director's office, each board and commission was asked to review the draft bill. The legal representative for SC-OSHA expressed a concern that state employees may be mistakenly identified as certified professionals and consequently put the state in jeopardy of liability. This concern was mitigated by including an exemption in the bill for state employees unless there was a willful intent by an individual to commit fraud.

The ad hoc committee provided discussion points for members of ASSE and AIHA. As comments were made and the draft legislation was modified accordingly, the members of the Title Protection Committee facilitated distribution of these changes to the respective members. Commit-

tee members attended meetings with state government officials and chapter members during the initial process of approving the final draft in order to discuss and explain the bill. The effort encompassed many e-mails, phone calls, trips to the state capitol (Columbia) and cities where chapter meetings were held. This process transpired over two-and-a-half years.

On Jan. 14, 2004, the final draft of the bill was introduced in the South Carolina Senate sponsored by two legislators, Senator Glenn McConnell and Senator Verne Smith. Simultaneously, the bill was introduced in the South Carolina House of Representatives by Representative Henry Cato. As the bill proceeded through the committee process in the Senate, members of the Title Protection Committee attended each meeting to show support and to answer any questions. Once the bill reached the Senate floor, members of both organizations were asked to call, write or send e-mails to their respective senators asking for their support. The Senate passed the bill on March 3, 2004.

The House of Representatives received the bill on March 3, 2004. The process of committees and subcommittees again required our committee members to attend meetings to show support and answer questions. Again, when the bill was passed out of committee to the House floor, South Carolina ASSE and AIHA members contacted their representatives asking them to support the bill. The House of Representatives passed the bill on April 1, 2004, and the bill was ratified April 20, 2004.

One final problem had to be overcome: The governor vetoed the bill. The committee members regrouped and asked the Senate and House to override the governor's veto. With a call to the Senate and House of Representative sponsors, the committee was back in the game. At this time, AIHA's director of governmental affairs sent a letter to the governor of South Carolina with copies to the legislative sponsors of the bill. The senate overturned the veto on May 12, 2004, by a vote of 46 to 0. The House overturned the veto by a vote of 95 to 11 on May 19, 2004.

Finally, on June 10, 2004, the bill became South Carolina Act No. 235, a law to protect the titles of CSP and CIH.

The process to have title protection legislation passed was truly a concerted effort by ASSE and AIHA members who reside in South Carolina. It was also made successful by the support and assistance of AIHA's and ASSE's national governmental affairs organizations.

The success of this legislation is the result of the hard work of various ad hoc committee members, who include Colleen Eubanks, Ronda Haggerty, Pam Tompkins, Bruce Sproles, Sherman Woodson, John Mewborn, Greg Rawls, Lee Safely. Support when needed was also provided by Marshall Fowler, Fred Miller and Joel Jones, and the many who wrote letters, sent e-mails or made phone calls to their elected representatives.

ALCOHOL AWARENESS

Alcohol Awareness Program to Combat Driving While Hungover

Spirit Sciences will become the first company to include a warning on its consumer products about the dangers of driving with a hangover. The company has spearheaded an alcohol-awareness campaign to promote road safety by educating the public about the effects of a hangover on crucial skills such as driving.

While research shows that an average of 46 people die in alcohol-related traffic accidents every day, the numbers could be even higher if the statistics included accidents caused by drivers affected by hangovers. Sweden's National Road and Traffic Research Institute found that an eight-hour-after hangover decreases visual/spatial skills, including driving ability, by 20 percent or more, making it as dangerous as actual intoxication. People who drive the morning after a night of heavy drinking often have blood alcohol levels within the legal limit. This means that it is legal for them to operate a vehicle or perform any other activity which could potentially endanger others.

To help law enforcement and safety advocates combat driving while hungover, Spirit Sciences is developing a technology capable of detecting a hangover and measuring its severity. "If I need to worry about finding a designated driver not only to get home tonight, but also to drive me to work tomorrow, I think I'd definitely be more reluctant to drink," says Emil Chiaberi, CEO of Sprit Sciences. For more information, visit www.spirit-sciences.com.

COMPLIANCE ANALYSIS

3E Launches Compliance Analysis Service

3E Co., a leading provider of business process outsourcing-based solutions for SH&E information and compliance management, now offers a compliance analysis service for organizations that need cost-effective ways to improve SH&E programs and policies and to identify areas for improvement. The service spans multiple areas of HazMat compliance management, including MSDS information; spill cleanup and reporting; hazardous waste management, storage and disposal; HazMat transportation; SH&E training and implementation; and compliance reporting related to HazMat storage and handling.

The program involves gathering relevant data about an organization's existing compliance program, which requires assessing areas such as HazMat inventory, use, storage and disposal policies; facility health and safety processes; occupational risks; IT systems and processes; training; and regulatory reporting practices. The result is a comprehensive analysis that identifies shortcomings and recommends functional improvements for both in-house best practices and outsourcing solutions. For details, visit www.3ecompany.com or call (800) 360-3220.

EMERGENCY PREPAREDNESS

UF in Strategic Alliance to Create Homeland Defense TV

The University of Findlay's Center for Terrorism Preparedness has entered into an alliance with TV Worldwide, a web-based TV network and Homeland Defense Radio.com Internet TV channel at www.homelanddefensetv.com. Through this partnership, TV Worldwide will develop live and archived homeland defense and security content for Homeland Defense TV, deploying various proprietary streaming media processes it has used to build the first network of community-based Internet TV channels targeting "aimcast audiences."

SAFETY AWARD

T.E. Ibberson Earns Governor's Safety Award

T.E. Ibberson Co., a worldwide provider of construction and engineering services to the food manufacturing, grain processing and heavy industrial industries, has earned the Governor's Safety Award for Meritorious Achievement for excellence in workplace safety and health.

"We certainly have the good safety measurement and control systems that are central to effective business management and long-term corporate survival," says Craig Lueck, corporate safety manager, "but all the rules and programs in the world will not substitute for the high personal values and commitment to safety of our employees. Our president's personal commitment and involvement in our program sets a standard of leadership that is easy to follow. Our zero accident philosophy is part of every company activity—and it shows."

EXTENDED HOURS

Human Resources Must Take Bigger Role in 24/7 Operations

Among U.S. companies with extended-hours operations, only 21 percent reported that human resources coverage was provided to evening, night and weekend shifts. This is a key finding of the 2004 Shiftwork Practices Survey by Circadian Technologies Inc.

"Human resources managers hold the key to uncovering the hidden costs of extended-hours operations and developing effective programs to reduce these costs," says Circadian's Acacia Aguirre, M.D., Ph.D. "Unfortunately, in most companies, human resources managers are absent members of the extended-hours operations management team. Since human resources managers are not usually on duty during the evening, nighttime or weekend shifts, impacting these excess costs is challenging."

While workforce demographics are a concern for all human resources managers, they are even more important in the already challenging environment of extended-hours operations. The survey highlights the critical problems that extended-hours operations managers face:

- The aging workforce creates challenges in the



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management of healthcare costs, heightens training issues, requires companies to consider the use of flextime/job-sharing and contributes to increased conflict among employees.

- The increase of women working in extended-hours operations and the need for quality extended-hours childcare has not been addressed by U.S. employers.

- The ethnic and racial composition of the U.S. workforce continues to diversify, and the extended-hours workforce is no exception. Increased diversity leads to issues such as the need for bilingual communication and training.

- Extended-hours operations take a toll on employees, affecting their health and well-being, which costs the company more than necessary.

To help workers cope with the specific challenges presented by extended-hours work schedules, interventions such as medical surveillance of workers, implementation of health promotion programs and disease management programs have proven to be efficient and to present a good return on investment. To be successful, interventions should be tailored to the specific needs and characteristics of the target population considering the importance of demographic factors, Circadian says.

"Many workers in extended-hours operations do not know how to minimize the negative effects of working around the clock. These problems are avoidable when employees learn how better to cope with the special demands of extended-hours operations. Areas that should be covered in employee training include how to get good sleep according to the shift

schedule worked, napping strategies, and the use of caffeine and other substances that can improve or decrease alertness," says Dr. Kirsty Kerin, Ph.D., a principal author of *Human Resources Management in the Extended Hours Workplace*.

Data indicates that an adequate work schedule, taking into account both operational needs and workforce characteristics, is key to minimizing accidents and injuries. Developing and implementing an effective plan to optimize an extended-hours workplace requires both a detailed knowledge of site-specific issues and an expert grasp of such operations and scheduling factors.

Kerin adds, "While it is tempting to look for a one-size-fits-all solution to the challenges of extended-hours operations, it simply does not exist. The 'ideal' solution depends on many factors including the makeup of the workforce, the nature of the work, commuting issues and other important factors. A full assessment of the operating environment, composition of the employees and management objectives is necessary to develop the appropriate comprehensive solution."

For more information, visit www.circadian.com.

ACHIEVEMENT AWARD

Cianbro Recognized for Best U.S. Corporate Health Program

Cianbro, based in Pittsfield, ME, is a civil and heavy industrial construction company. The employee-owned company recently received the American

An extended-hours workplace requires a detailed knowledge of site-specific issues and an expert grasp of such operations and scheduling factors.

Industry Notes continued on page 22

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College of Occupational and Environmental Medicine's prestigious Corporate Health Achievement Award for 2004. The award recognizes organizations that have demonstrated outstanding achievement in employee health, safety, environment and management. "Cianbro is a leader in understanding and promoting the corporate cultural changes toward health that make wellness a reality in the workplace," says Rita Bubar, Cianbro's corporate human resources manager. For more information, visit www.cianbro.com.

PEDIATRIC AEDS

Defibtech Approved to Market Pediatric Defibrillation Pads

Defibtech has gained clearance from the Food and Drug Administration to market pediatric defibrillation pads for its Lifeline and ReviveR automated external defibrillators (AEDs). The pediatric pads are designed for use on children under age eight. The pads attach to the child's chest

and deliver the defibrillation at an optimal energy level. According to American Heart Assn. 2004 heart disease statistics, about 340,000 Americans lose their lives to sudden cardiac arrest (SCA) each year, and SCA accounts for 19 percent of sudden deaths among children age one to 13. With timely defibrillation, most victims of SCA survive; without it, fewer than five percent live. For more information, visit www.defibtech.com or call (866) 333-4248.

DRIVING SAFETY

Crash Tests, Rollover Ratings Available at www.safercar.gov

National Highway Traffic Safety Administration (NHTSA) released crash test results for the last 2004 vehicles and some early 2005 vehicles. The agency also released additional rollover ratings for 2004 vehicles. The 2004 Toyota Solara Coupe and the 2004 Chevrolet Equinox 4x4 are the only vehicles in the latest group to earn the top rating of five stars for frontal- and side-impact crash tests. NHTSA's consumer information program uses a one- to five-star system that reflects a vehicle's ability to protect the driver and passengers in a crash.

New model year 2004 ratings for rollover varied. For passenger cars, the Mazda RX-8 received the top rating of

five stars for rollover. The highest scoring vehicles in the light truck category included the Dodge Durango 4x4, the Ford F-150, the Honda Pilot 4x4 and the Toyota Sienna, which each received a four-star rollover rating. All results are available at www.safercar.gov.

EYE CARE

EyeCare America to Provide No-Cost Eye Care to Seniors

In honor of "Take a Loved One to the Doctor Day," scheduled for Sept. 21, 2004, EyeCare America and the Health and Human Services Office of Minority Health, are encouraging people to call the EyeCare America Seniors Eye Care Program. This year-round program offers eye exams and care to seniors who are without an ophthalmologist.

"Vision impairment has enormous personal, social and economic costs, limiting the activities of otherwise healthy and active people," says Richard P. Mills, M.D. "By increasing awareness of eye disease and connecting more people with the exams and medical treatment, EyeCare America works to reduce preventable blindness in the U.S. thereby allowing our seniors to live more fulfilling lives." For more information, visit www.eyecareamerica.org.

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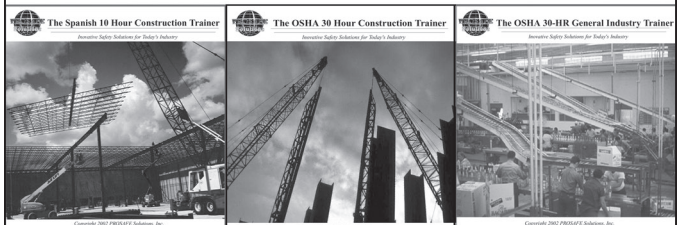
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"Writing Worth Reading" is written by Carl R. Metzgar, CSP, ARM. The column examines literature that today's SH&E professionals should be aware of as they seek to expand their knowledge and enhance their effectiveness. A former member of ASSE's Editorial Review Board, Metzgar is a writer and consultant based in Winston-Salem, NC; he can be reached at (336) 766-8264 or cmetz46840@aol.com.

FALL INJURIES

Human Tolerances to Extreme Impacts in Free-Fall

By Richard G. Snyder. *Aerospace Medicine*. Aug. 1963: 695-709.

This 1963 paper is an independent further development of the same subject developed in DeHaven's 1942 article, "Mechanical Analysis of Survival in Falls from Fifty to One Hundred and Fifty Feet" (see *PS*, June 2003, pp. 55, 75). Falls are frequent causes of injury. These papers use science to develop fundamental facts on which to base thinking and action. Basic physics is the practical tool for establishing facts and setting up the filter to review fresh observations.

Alan Cromer wrote, "Science, which asks [humans] to see things as they are and not as they believe or feel them to be, undercuts a primary human passion. In every society, the skeptic is liable to be shouted down, if not stoned down, by the mob of believers. Most educational systems developed over the millennia were designed to teach allegiance to the words of ancient texts, not a disinterested search for truth." In the loss control profession, the reverence for Heinrich and other default authorities remains disconcerting. The disregard of hard-earned skeptical insights added by Fred Manuele and others is alarming.

The conclusions Snyder established are summarized in an outstanding figure with powerful visual impact. The information and organization in the figure would not change if printed today. Today's visual-aid technology would improve the presentation but not the facts. The factual steak would remain the same but the visual sizzle could be improved. Snyder's figure is labeled: Biophysical Factors Influencing Trauma in Free Falls. The list is not unusual or spectacular (see sidebar above). A current, easier-to-read and more-general article would produce the same list without acknowledging the earlier source. Part of the reason the list would be the same is that Snyder's paper and others have slipped into the common knowledge-base without appropriate credit.

In the figure, Snyder offers insight about the factors and the facts he has accumulated from actual observations and investigations, and he justifies including them. Other graphs in the article list the falls and the kinds of injuries that resulted. The charts and graphs aid understanding.

The factor that both DeHaven and Snyder emphasize is time duration of impact. The most dramatic and easily available demonstration of this is the "Seven Tenths of a Second" article, which describes the sequence of what happens in a car crash. In a similar vein, NASA regularly brings space capsules from a speed of 18,000 miles per hour to a dead stop without injury to the astronauts. This is successful because they take hours to do it instead of seconds or fractions of a second.

The material impacted is a major determining factor in the extent of injuries. Snyder availed him-

Biophysical Factors Influencing Trauma in Free Falls

Physical Factors

- Time duration of impact
- Magnitude of force
- Impacted material
- Direction of force
- Distribution of force

Biological Factors

- Age
- Sex
- Physical condition
- Mental condition
- Tissue properties

self of the work of K.K. Kienow to report the deflection in concrete. It was determined that "the maximum the concrete could deflect prior to cracking, was calculated to be 0.0156 inches." This was measured in a four-inch-thick slab of concrete four feet wide and 10 feet long having uniform soil pressure underneath. A second effort with the same size slab and an assumed unyielding foundation was loaded. "In this case, a 200-pound man was assumed to impact feet first (1 sq. ft. area) at a velocity of 65 ft./sec., with a velocity after impact of zero (no bounce). In this minimal case the deformation was determined to be 0.000268 inches. Any bounce, of course would decrease this dimension, and most free-fall impacts appear to involve bounces."

A stop in a distance between 0.000268 and 0.0156 inches is, for all practical purposes, instantaneous. This gives "time duration of impact" a whole new meaning and explains why it is better to land on soft earth rather than on supported or unsupported concrete. Deflection or not, there is no escaping the distance fallen.

Mike Heenan, an attorney with Ogletree Deakins, when commenting on MSHA's fall protection standard, wrote, "The major difficulty for most employers is not one of providing fall protection in high places, but rather providing protection for low places where there is a risk of falling only short distances." DeHaven said that the injuries which could occur in falls from 50 to 150 feet could occur in a fall of five feet. Recognizing the fall hazard is the first step in providing appropriate intervention.

Snyder and DeHaven both concluded that the human body is capable of surviving more significant mechanical energy transfers than previously thought. Observation, experiment and accurate reporting produced more useful results than previous speculation and appeal to authority.