

IN Review

Indiana Occupational Safety and Health 2011

An annual publication of the Indiana Department of Labor



Advancing the safety, health and prosperity of Hoosiers in the workplace

Dedicated to Worker Safety and Health

A team dedicated to protecting your health and safety on-the-job.



Our mission has not changed. Our target is zero because one worker injured, made ill or killed on the job is unacceptable. The mission of the Indiana Department of Labor is to **advance the safety, health and prosperity of Hoosiers in the workplace.**

We emphasize a multi-faceted approach of enforcement, voluntary employer compliance and education, outreach and training opportunities to make significant strides towards our mission. Our department administers the Occupational Safety and Health Act (OSH Act) in Indiana. In 2010, our IOSHA Compliance Safety and Health Officers conducted more than 2,300 enforcement inspections.

In addition to our enforcement efforts, more than 400 on-site workplace safety and health consultations were provided to Indiana employers through our OSHA Consultation Program, INSafe, in 2010. Through these consultations, IN-

Safe Safety and Health Consultants identified and assisted Hoosier employers to correct more than 1,200 occupational safety and health hazards.

The Indiana Bureau of Mines and Mine Safety conducted quarterly safety and health inspections in all of Indiana's underground coal mines. The Bureau's mine rescue team also participated in regular drills, competitions and training sessions.

The Indiana Bureau of Child Labor conducted more than 1,200 inspections during 2010. Last year, more than 1,000 employers participated in teleconferenced training opportunities made available by the Indiana Bureau of Child Labor.

We look forward to making Indiana workplaces safer and healthier places for Hoosiers to work. To learn more about our department, outreach programs and services, please visit our website at www.in.gov/dol.

IN Review

Indiana Occupational Safety and Health - 2011

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Additional information about 2011 **IN Review** contributors may be found on page 37 of this magazine.

On the cover of **IN Review**: Indiana occupational safety and health in action. Photos used are various scenes that depict Hoosier occupational safety and health. Photos were taken and submitted by IOSHA Compliance Safety and Health Officers and INSafe Safety and Health Consultants.

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Indiana Leaders



“The declining number of workplace accidents shows that Hoosier employers and employees are dedicated to making our job sites the safest in the country. Through the efforts of the Indiana Department of Labor, we will continue to reduce worker injuries and fatalities. The safety of Indiana workers will always remain a top priority.”

Mitchell Daniels

Mitchell E. Daniels, Jr.
Governor of Indiana

Since the mid-1990’s, Indiana’s non-fatal occupational injuries and illnesses have been on a steady decline, and 2009 was no exception. An “all-hands-on-deck” effort from Hoosier employers, employees, professional groups and trade associations, as well as the Indiana Department of Labor has resulted in the lowest number of non-fatal occupational injuries, illnesses and fatalities on record. While these numbers are an accomplishment, they are still far from our goal of zero workers injured, made ill or killed in the workplace.

All groups: employers, employees, small businesses, trades, compliance safety and health officers, consultants and trainers deserve a sincere thank you. Indiana is yet again a safer place for all workers, and we show no signs of slowing down.

Occupational safety and health is not a spectator sport, and enforcement programs on topics such as grain handling, hexavalent chromium and the new crane and derricks standard indicate we all understand that we must keep making progress. We will continue to utilize a multi-pronged approach of outreach, education and training as well as compliance efforts that focus on all our stakeholders. As always, we invite you to contact us with any questions.

The 2011 edition of *IN Review* delves into the numbers in more detail, and we hope that each of you find something to help make your programs and processes safer for those who perform them. The Indiana Department of Labor is dedicated to **advancing the safety, health and prosperity of Hoosiers in the workplace**, but we cannot do it without your support. Thank you for your efforts in protecting Indiana’s workers.



Lori Torres

Lori A. Torres
Commissioner of Labor

Occupational Safety and Health *IN* Review

A thorough review of the latest occupational safety and health injury, illness and fatality trends indicates significant progress is being made in Indiana workplaces. Information used in *IN Review* was provided by the federal Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI), Survey of Occupational Injuries and Illnesses (SOII) and data from the Indiana Occupational Health and Safety Administration (IOSHA).

•In 2009, the State of Indiana reported 123 fatal occupational injuries (Figure 1), the fewest on record. The workplace fatality rate was 5.0 per 100,000 Hoosier workers (Figure 2), which was released for 2008. *The 2009 occupational fatality rate will be available in the second quarter of 2011.

Indiana industries with the highest number of workplace fatalities in 2009 are:

Agriculture	23
Construction	17
Transportation and Warehousing	17

•The number of non-fatal occupational injuries and illnesses in 2009 was 94,800 (Figure 3). This is the lowest number of non-fatal injuries and illnesses recorded for the State of Indiana, and represents a decrease of 17,300 as compared to 2008.

Indiana industries with the highest non-fatal injuries and illnesses (in raw numbers) in 2009 are:

Manufacturing	21,500
Healthcare & Social Assistance	16,600
State & Local Government	15,300

•Indiana's non-fatal occupational injury and illness rate is 4.3 per 100 employees (Figure 4) continuing a downward trend. The 2009 non-fatal occupational injury and illness rate represents a 12% reduction from the 2008 rate of 4.9 per 100 workers. This is the greatest percent decline in a one-year period on record. However, the non-fatal occupational injury and illness rate is greater than the U.S. total recordable rate of 3.9.

Indiana industries reporting the highest injuries and illnesses by rate in 2009 are:

Arts, Entertainment & Recreation	7.2
Healthcare & Social Assistance	6.5
State & Local Government	5.0

Figure 1: Indiana's Fatal Occupational Injuries

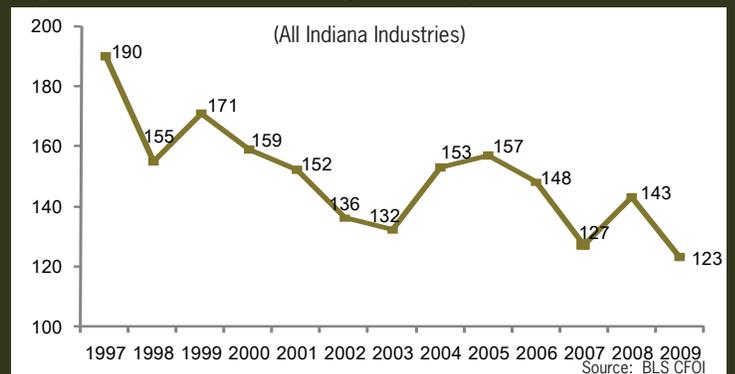


Figure 2: Indiana's Occupational Fatality Rate

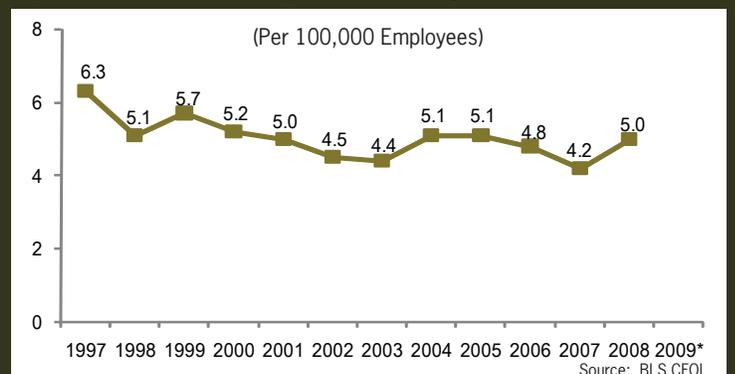


Figure 3: Indiana's Non-fatal Occupational Injuries & Illnesses

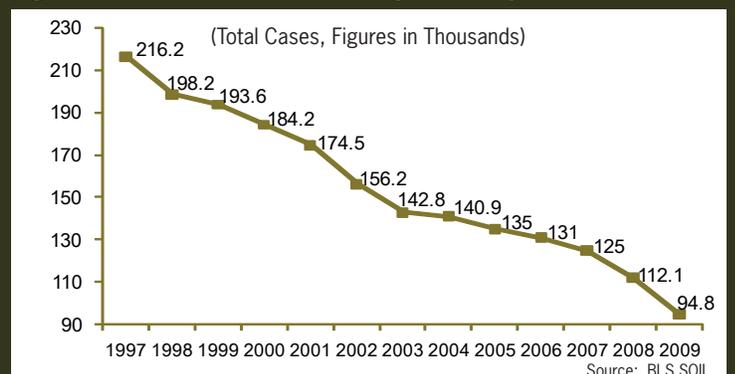
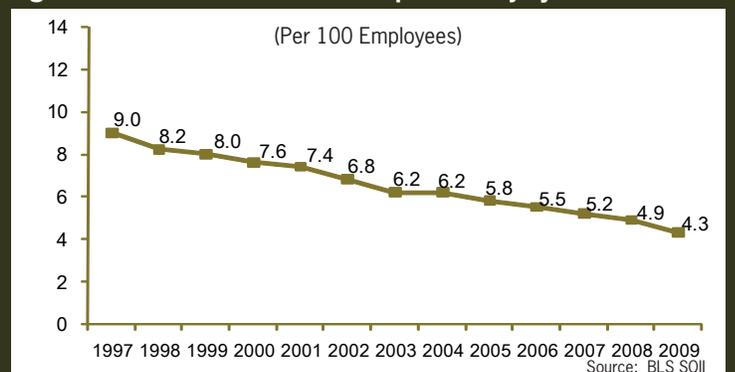


Figure 4: Indiana's Non-fatal Occupational Injury & Illness Rate



IOSHA Cites Top Ten Most Violated Standards

Review the top ten most frequently cited OSHA standards cited by Indiana Compliance Safety and Health Officers and Construction Safety Inspectors.

In 2010, the Indiana Occupational Safety and Health Administration (IOSHA) conducted more than 2,300 inspections. These inspections were a result of formal employee complaints, referrals made by media and other agencies, workplace fatalities, catastrophes and general schedule inspections which are generally based on OSHA injury and illness logs. Inspections were conducted in various workplaces including factories and foundries, doctor's offices, grocery and convenience stores and construction jobsites. In Indiana, IOSHA's jurisdiction includes both public and private sector workplaces.

The top ten IOSHA violations are listed below for review, with the initial penalty calculation also cited.

1. 1910.1200: Hazard Communication.

Employers are required to have a written Hazard Communication (HazCom) program, Material Safety Data Sheets (MSDSs), provide training and label containers that contain chemicals.

310 citations
\$45,825 initial penalties

2. 1926.451: Scaffolds.

Each scaffold and scaffold component must be capable of supporting its own weight and at least four times the maximum intended load applied or transmitted to it without failure. Improperly erected scaffolds can result in the planking or support giving way, which may cause the employee to slip or fall.

170 citations
\$149,275 initial penalties

3. 1910.134: Respiratory Protection.

Employers are required to protect employees from dangerous exposures to chemicals and other



IOSHA Top Ten Most Violated Standards, number 6, Fall Protection: Employee is not properly protected from a potential fall. (Photo submitted to IOSHA)

toxic vapors. These types of hazards have the potential to cause cancer, lung impairment, other diseases and even death.

147 citations
\$17,975 initial penalties

4. 1926.020: General Safety and Health.

Employers must provide all employees with a safe and healthy working environment, free of recognized hazards. This includes developing safety and health programs, providing training and the appropriate personal protective equipment (PPE).

125 citations
\$123,075 initial penalties



IOSHA Top Ten Most Violated Standards, number 4, Machine Guarding: The point of operation is not appropriately guarded.

5. 1910.212: Machine Guarding.

Machine safeguards must be used to prevent hands, arms or any part of a worker's body or clothing from making contact with dangerous moving parts.

114 citations
\$153,361 initial penalties

IOSHA Inspections by the Numbers

2,300+ inspections were conducted by IOSHA inspectors in 2010.

3,410 citations were issued by IOSHA inspectors in 2010.

\$2.37+ million in penalties were assessed by IOSHA in 2010.

6. 1910.303: Electrical. Electric or electrical equipment must be free from recognized hazards likely to cause death or serious physical harm to employees. Employers must provide workers with the appropriate training on safe work practices and proper procedures for working with electrical equipment.

108 citations

\$82,266 initial penalties

7. 1926.501: Fall Protection. Fall protection for employees must be provided at four feet in general industry, five feet in maritime and six feet in construction. However, regardless of the fall distance, fall protection must be provided when working over or on dangerous equipment and machinery.

108 citations



IOSHA Top Ten Most Violated Standards, number 2, Scaffolds. (Submitted Photo)

\$123,400 initial penalties

8. 1910.146: Permit Required Confined Spaces.

Before allowing employees to enter into a permit required confined space (PRCS), employers must develop and implement a written PRCS program. Programs must include annual employee training and processes for locking out machines and cutting off power sources.

92 citations

\$51,293 initial penalties

9. 1926.150: Fire Protection. Employers are held responsible for developing a fire protection program throughout all phases of construction and demolition work. The employer must also provide appropriate firefighting equipment.

90 citations

\$3,155 initial penalties

10. 1926.503: Fall Protection Training.

Employers are responsible for the development and implementation of fall protection training for any employee that is exposed to fall hazards.

77 citations

\$31,650 initial penalties

For information pertaining to the Indiana Occupational Safety and Health Administration (IOSHA), Hoosier worker safety and health or to learn about enforcement programs, please visit www.in.gov/dol/iosha.htm. Employers and employees may also learn about the Indiana Department of Labor's free OSHA Consultation Program, INSafe, online at www.in.gov/dol/insafe, by email at insafe@dol.in.gov or by phone at (317) 232-2688. To schedule a free on-site consultation, please visit www.in.gov/dol/insafeconsultation.



IOSHA Top Ten Most Violated Standards, number 9, Fire Protection: Fire extinguisher is nearly two years past the due date for the required annual service. (Photo taken by IOSHA Compliance Safety and Health Officer Jeanne Hedge)

Teen Worker Safety and Health

Kenneth Boucher II, Director of the Indiana Bureau of Child Labor, discusses the hazardous and prohibited occupations for Indiana minors.

More



than 45,000 work permits were issued to minors entering Indiana's workforce in 2010. These minors work in many varied working environments and on many different tasks.

To help ensure the safety, health and prosperity of these young workers, the Indiana Bureau of Child Labor is dedicated to investigating workplaces that employ minors. Among other requirements, Child Labor Investigators check for strict adherence to state and federal laws regarding prohibited and hazardous occupations for minors.

Restaurants and Retail

Hoosier minors are predominantly employed in restaurants and retail establishments. Although these often seem like safe and low-risk workplaces, they can present inherent hazards. For example, it is unlawful for anyone 14 or 15 years of age to stand on a ladder, scaffold or any surrogate piece of equipment. Also, 14 and 15 year-olds may not operate, clean or maintain any sort of power-driven machine, but may operate office equipment, vacuum cleaners or floor waxers.

Any type of cooking may be performed by minors over the age of 16. Minors 14 and 15 years of age may cook, but not over an open flame and may only use automatic or robotic fryers. It is unlawful for anyone under age 18 to maintain or operate powered meat slicers or grinders, or to work in the processing, packing or rendering of meat or poultry. It is also unlawful for anyone under 18 to load, maintain or operate large bakery mixers designed for commercial use. However, they may work with table-top models not hard-wired into the building's power system.

Manufacturing and Woodworking

Unless enrolled in a vocational education program or apprenticeship, minors under age 18 may not operate any type of powered woodworking, sawmilling or metal forming equipment. This includes band saws, chainsaws, circular saws, power drills or any other powered machine designed to change the shape or nature of wood. These machines are incredibly dangerous, even for adults. They can, and have, caused injuries including cuts, broken bones and amputations.

Minors 14 and 15 years of age may work in an office or clerical role, but may not enter any area where products are being manufactured or processed. They may not repair or assist in repairing machines or any equipment, and must keep away from boiler and engine rooms.

Advertising and Youth Peddling

During Independence Day, Halloween and the tax seasons, it is common to see workers standing near the roadway holding signs or dressed in costume to draw attention to a seasonal business. This type of activity can be very dangerous as costumes can be cumbersome and hot. Masks or signs may also impede the wearer's vision or, in some cases, catch the wind and cause a trip hazard. Given these inherent hazards and how close these employees work to streets or intersections, federal and state law now requires anyone performing such duty to be at least 16 years of age.

Similarly, one might also encounter minors approaching people in shopping centers or going door to door selling goods such as magazine subscriptions, candy or coffee. Oftentimes these minors have been dropped off in unfamiliar surroundings, sometimes even across state lines, by an adult "supervisor" and asked to sell goods until they are picked up again. Frequently, these minors are left to work after dark with no supervision and receive very little compensation. Unless a minor is peddling goods for a bona fide charitable organization and is receiving no direct compensation, minors must be at least 16 years of age to engage in this activity.

Permissible Occupations

The safety of minors in the workplace is the priority of the Bureau of Child Labor's. Violations of these regulations may carry stiff penalties. As the Bureau of Child Labor has concurrent jurisdiction with the United States Department of Labor, penalties for violating laws regarding prohibited and hazardous occupations could range from a letter of warning to \$11,000 per instance of a minor working in violation of these laws. For a complete listing of all prohibited and hazardous occupations, or examples of permissible duties, please visit www.in.gov/dol/2741.htm.

Resources for Minors, Parents & Employers

The Indiana Bureau of Child Labor offers free training on Indiana's Child Labor laws provided via teleconference. To learn more about this free training, please visit www.in.gov/dol/2654.htm or email childlabor@dol.in.gov.

Preventing Falls in the Workplace

Linda Parks, Survey Coordinator, researches falls in the workplace. Worker injuries from falls are preventable, yet remain a persistent problem.

Many workers, regardless of industry or occupation, are exposed to fall hazards while performing their daily tasks. Contrary to popular belief, not every fall occurs in the construction industry or from an extreme elevation. In 2009, falls resulting in a worker death occurred in many Hoosier industries including **construction** (5), **education and health services** (4) and **trade, transportation and utilities** (4).

In Indiana in 2009, **falls** (16%) were second to **highway accidents** (20%) as the leading cause of occupational-related fatalities. During this time period, 20 Hoosiers suffered a fatal injury from a fall while working. The number of fatal falls increased in 2009 after showing improvements in 2007 (13) and 2008 (14).

In the United States, between 2005 and 2009, 3,761 fatal falls occurred. In this same time frame, 89 fatal falls occurred in Indiana. A series high of 23 fatal falls occurred in 2005. The federal Bureau of Labor Statistics (BLS) began maintaining records in 1992.

Nationwide, there were 617 falls resulting in worker deaths in 2009. In 2007, there were 847 fatal falls reported in the United States. This is the highest number recorded since the BLS started keeping records in 1992. Nationwide, approximately 37% were **falls from roofs or ladders** in 2009.

Any walking or working surface has the potential to be a fall hazard for an employee. Stairways, the use of traditional ladders, step ladders and motor vehicles present the potential for falls in the workplace. In Indiana in 2009, fatal falls were suffered as a result of **falls from a non-moving vehicle** (6), **falls from a ladder** (5), **fall to a floor or walkway** and **falls down stairs** (3).

While not every workplace fall results in a death, it has the potential to cause severe and life-changing injuries to the affected worker. According to the BLS Survey



Figure 5: Indiana's Fatal Occupational Falls

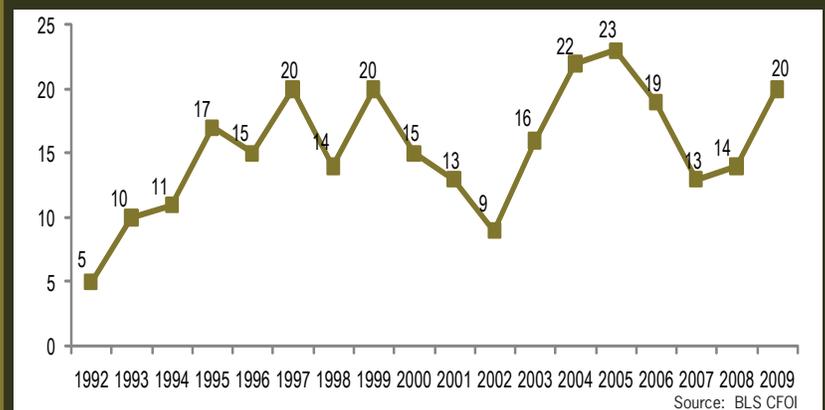
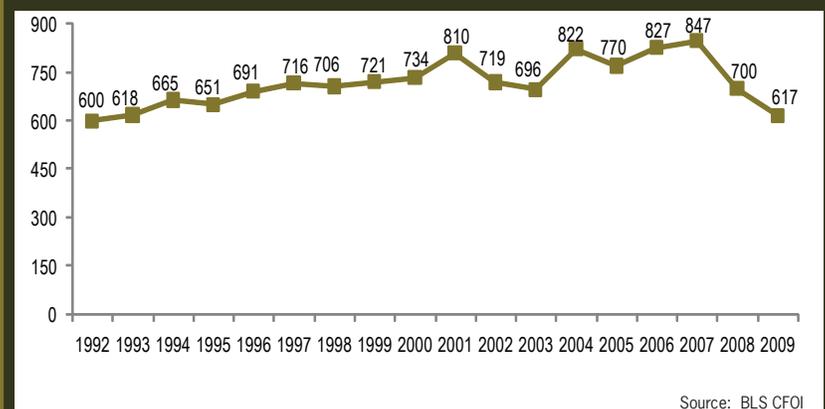


Figure 6: United States Fatal Occupational Falls



of Occupational Injuries and Illnesses (SOII), in 2009, 4,770 Hoosier workers suffered a non-fatal work-related injury resulting from a fall.

Falls on the same level accounted for more than 3,200 of these non-fatal injuries. Non-fatal **falls to a lower level** attributed to more than 1,300 worker injuries in Indiana as well. The majority of these incidents were reported in the **transportation and utilities industry** (32%). Only about 10% (480) of the non-fatal falls occurred among workers in the Hoosier **construction** industry in 2009.

For more information and resources for preventing both fatal and non-fatal injuries from work-related falls, please visit the **National Institute for Occupational Safety and Health** (NIOSH) online at www.cdc.gov/niosh/.

IN the Know: Distracted Driving

Have you ever **used a cell phone—reached in the backseat to grab a CD—entered an address into your GPS unit or changed a radio station while driving?** If you answered “yes,” you have operated a motor vehicle while distracted. Distracted driving is any non-driving activity that a motorist engages in that has the potential to distract him or her. It is unsafe, irresponsible and has life-threatening consequences.

Stressful jobs, busy lifestyles and technology advances are just a few reasons why individuals may engage in distracted driving. Because of these reasons, drivers may feel forced into combining daily life tasks with operating a vehicle. The Department of Transportation (DOT) reports that in 2009, more than 5,400 people died in crashes linked to driver distraction. Thousands more were injured.

In addition to leisure-related travel, today, many Hoosier workers drive for a living. Hoosiers work in a variety of occupations requiring them to spend all or part of the day driving, including visiting clients, making service calls or delivering goods and services to customers. The roadway is a work environment not as easily controlled as an office or production floor.

In Indiana in 2009, **highway vehicle accidents** were the leading cause of death in the workplace (38%), according to the Bureau of Labor Statistics’ (BLS) Census of Fatal Occupational Injuries (CFOI). While it is unknown if distracted driving was the primary cause of the incidents, **25 workers in Indiana died** as a result of highway accidents.

While all distracted driving activities endanger drivers’ safety, according to experts, **texting while driving is most alarming**, because it involves all three forms of distraction—**visual, manual** and **cognitive**. Texting while driving has become such a threat that 30 states have banned the

activity for all drivers, and **Indiana state law prohibits texting for drivers younger than 18**. Several bills are pending in this session that would prohibit all drivers from texting while driving. House Bill 1129 has already passed the House and is awaiting action in the Senate at the time of publication. There is a realistic possibility that some legislation regulating cell phones and hand held communication devices may become law in Indiana this year. Recently, the Indiana Department of Labor established a policy **discouraging employees from using cell phones while driving** while conducting state business. The **Indiana Department of Labor’s policy prohibits** any agency employee from engaging in **any form of texting or responding to e-mail** while operating a motor vehicle, while working.



What can my company do to reduce the likelihood of work-related traffic accidents?

Employers should assign a key member of the management team with the responsibility of developing and implementing a policy banning distracted driving activities mentioned above. Educating employees on the serious, and often fatal, consequences of distracted driving is also important. To do their part, employers should take into consideration and set realistic goals for the number of miles that a driver can safely drive each work shift. Texting and talking on a cell phone, eating lunch and conducting businesses should not occur in an automobile while driving.

For more information on developing a comprehensive driver safety policy, please click visit www.in.gov/dol/2385.htm. Information and statistics related to distracted driving incidents may be found at www.distraction.gov.

Distracted driving in unfavorable weather conditions promotes incidents.



A Job Never Finished

Deputy Commissioner **Jeffrey Carter**, discusses the work of an occupational safety and health professional.

When hard in state jobs.” Today, I know that that perception could not be any further from the truth. Indiana state employees live and work in an *on-call world*.

The Indiana Occupational Safety and Health Administration (IOSHA) team is no exception. It has been my privilege to serve side-by-side with these dedicated and hardworking professionals in the Daniels administration.

During my first two years in this job, I was the point of contact for the OSHA Fatal Injury Hotline. When an employer phoned to report a fatal injury, I would get that call. These calls occurred morning, noon and night and often require immediate dispatch of personnel. For more information on reporting fatal and other incidents to IOSHA, read the text-box below.

I do not expect my staff of occupational safety and health professionals to do anything that I myself would not do. Conversely, if I take time during my off hours to stop and view what could be a dangerous worksite, such as a trench, then I expect the same of them. This has made for some

I first began working in Indiana state government, a friend said, “You know, they don’t work very

interesting (and sometimes bizarre) encounters after hours for us.

If I am driving and see someone down inside an open trench, or a scaffold that appears out of compliance, I stop. I

have talked with jobsite superintendents while dressed in a suit heading for church, and have approached worksite employees in shorts on my way to Costco. Most are friendly encounters where admittedly surprised construction personnel and I have a nice talk about safety. In some cases, minor issues noted are fixed immediately and no referral is needed.

In other cases, though, the job must be stopped and company executives are contacted. Forensic evidence may be needed and occasionally the police may become involved. Although rare, these circumstances are sometimes warranted.

Often, we emphasize to some intransigent employers that the OSHA rules were not written for a nine to five workday. Occupational safety and health is a 24

hours a day, seven days a week, 365 days a year job.

For current publications, and worker safety and health alerts, please visit the Indiana Department of Labor online at www.in.gov/dol. For information about IOSHA, please visit www.in.gov/dol/iosha.htm.



A trench box is placed in a trench during construction on Washington Street in Indianapolis, Indiana. (Photo taken and submitted by Deputy Commissioner Jeff Carter)

When do I have to contact OSHA about a work-related injury or death?

If an employee dies at your workplace or while performing work off-site on your behalf, you **must call and report the fatality**. Heart attacks and deaths from what may later be characterized as a personal health issue must also be reported. Catastrophes involving the injury and overnight hospitalization of three or more employees, must be reported to OSHA within eight hours.

If either of these situations occur, the employer must call the Indiana Department of Labor Duty Officer at (317) 232-2693 during regular work hours, or 1-800-321-OSHA during non-work hours. The **law does not permit** an employer to **email, fax or text message** a fatal workplace injury or catastrophic event. Employers who fail to report either a fatality or catastrophe within eight hours of the incident (or within eight hours of the employer learning) may result in an issuance of a Safety Order and monetary penalty.

A Look Into Hoosier Coal Mining

Don “Blink” McCorkle, Director of the Indiana Bureau of Mines and Mine Safety, communicates the essence of mine emergency disaster planning and response.

In any emergency situation, the first few hours are the most critical in determining the success of any rescue or recovery efforts. Pre-event preparation, training and access to readily available information, field assessment and safety equipment are crucial to minimizing consequent deaths, injuries and illnesses to promoting overall workplace resilience.

Once an emergency occurs, responders are placed under time-urgent demands. Responders must attend to the hazards (including attention to self and crew members’ safety and health). They must also perform necessary work to complete a rescue. In addition, responders must also deal with the post-event stage (72 hours after the incident). At that time, responders may assess potential exposures, conduct rescues and attempt recovery activities in constantly changing and complex, hazardous environments.

Rescue is a word often associated with the coal industry, probably more so during and after the Chilean mine rescue in October 2010. Following a massive mine cave-in on August 5, 2010, all 33 miners trapped underground were successfully rescued. Generally speaking, most individuals associate “mine rescue” with saving lives. In reality, mine rescue is the practiced response to an emergency situation endangering **life, property** and the **continued operation of the mine**.

Indiana’s Bureau of Mines and Mine Safety

There are eight underground coal mines in southwest Indiana. Two additional mines are preparing to begin opera-

tions soon. The Indiana Bureau of Mines and Mine Safety is responsible for inspecting all underground coal mines in the state. In addition to conducting inspections, the Bureau also maintains a mine rescue station, trains mine rescue teams and collects mine maps for indexing.

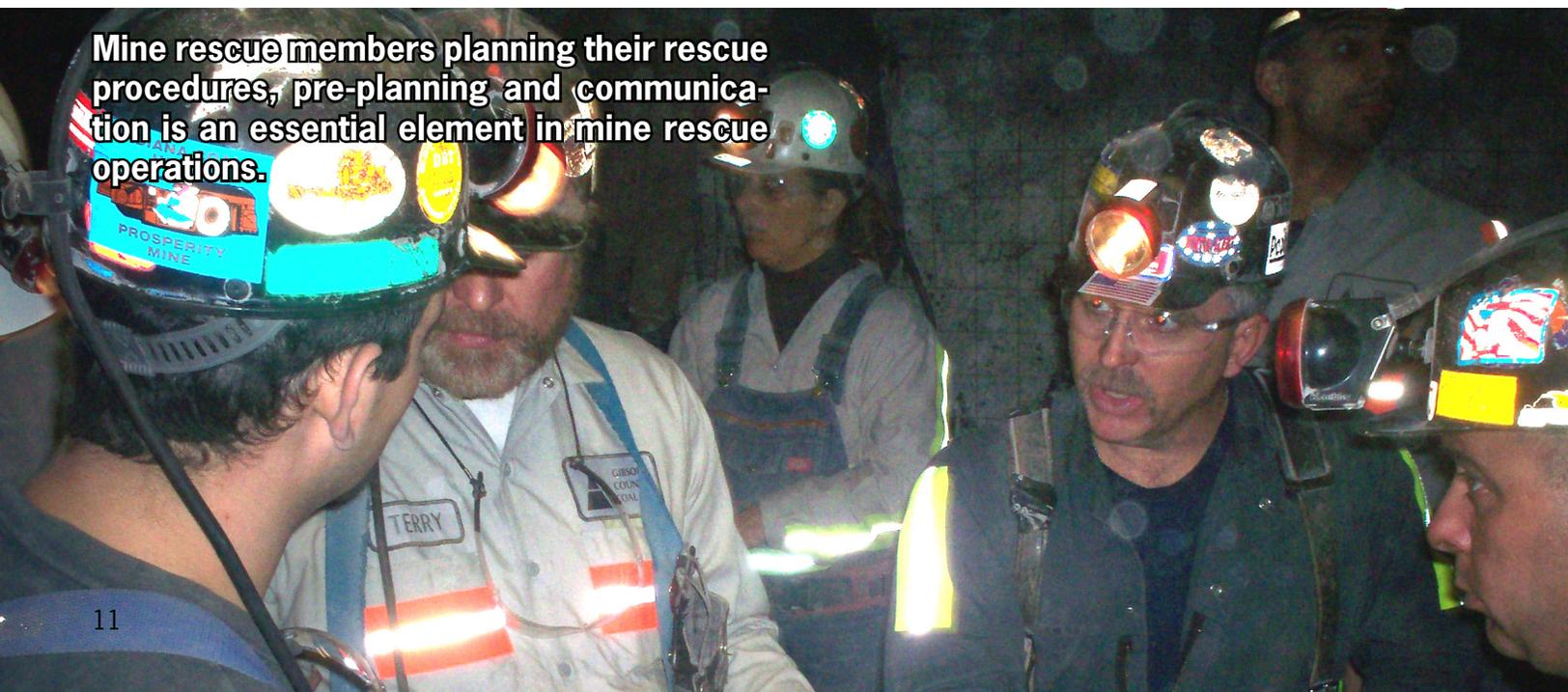
Indiana Mine Rescue Teams

To support these coal mines, the State’s mine rescue station is located in southwest Indiana at **Vincennes University**. It is also home to a mobile mine rescue van, fully prepared and equipped to maintain two mine rescue teams. The Bureau supervises one composite team and also contracts with a second private team from **Five Star Coal Company’s Prosperity Mine Rescue Team** to provide coverage for six of Indiana’s underground coal mines.

While the State of Indiana currently supports a composite team and contracts with **Prosperity Mine** for the second team coverage, there are actually six trained teams to cover all eight of Indiana’s active underground coal mines in the event of a mine disaster.

Prior to going underground, the mine’s exhaust air must be checked for gases, and the mine shaft must be guarded to prevent unauthorized individuals from entering. In addition, before going underground, all members of a mine rescue team must have been deemed physically fit by a physician. A materials check occurs to ensure the mine rescue teams have all appropriate equipment in good working order. All primary, secondary and back-up breathing apparatuses are field tested to ensure tightness and proper functioning.

Mine rescue members planning their rescue procedures, pre-planning and communication is an essential element in mine rescue operations.



After entering the mine, but prior to leaving the fresh air base, the team must be fully briefed on mine conditions and the work expected of them. During the briefing, the team must be given all relevant information including the completeness of the evacuation, missing workers and likely locations, cause of disaster (if known), the team's mode of travel, the time limit for operation, condition of air and water lines, status of the mine, etc.

Mine rescue teams are comprised of six critical positions: a team captain, a map person, two gas persons, a briefing officer and a tail captain. Each individual is an essential component of the team and can mean the difference between successful and unsuccessful efforts. All of these individuals have been trained in modified and simulated mine rescue and firstaid.

The **team captain** is in charge of the entire mine rescue team as it proceeds underground. It is the captain's responsibility to direct the team exploring the mine, making visual and physical roof inspections in all areas that the team enters.

The team's identified **map person** has a map of the mine. Their responsibility is to note conditions the team encounters on its mission, including survivors, cave-ins, fires, smoke, low oxygen levels, methane, carbon dioxide and barricades.

To ensure the team does not encounter atmospheric dangers, a **gas person's** job is to take gas-level readings at each stop. Typically, there are two gas persons on each mine rescue team. They are also responsible for carrying equipment needed to extinguish fires and assist rescued survivors.

The fifth member of the team, or **tail captain**, remains in constant radio contact with the fresh air base to provide crucial information. This includes unsafe atmospheres, roof fall locations and water that may impact the team's travel, etc.

The final position on the mine rescue team is that of a **briefing officer**. This position is located at the fresh air base and remains in constant radio communication with the team at all times. This position also relays information to the command center via another individual with him or her. Among other duties, the briefing officer helps the team ventilate the mine should any gases or other atmospheric dangers exist.

Training

Both federal and state law impose strict training requirements and minimum standards on mine rescue teams. To fully comply with these regulations, mine rescue teams are required to have a minimum of 96 hours of training each year. In 2010, the State of Indiana Mine Rescue Team exceeded these requirements by logging approximately 128 hours of training. Also, the mine rescue teams are required to compete in at least two mine rescue competitions each year.



Terry Phegley, Captain of the Gibson County Mine Mine Rescue Team takes a gas reading during a mock mine emergency response drill. (Submitted photo)

Mine Safety Priorities

Three priorities exist among Indiana's mine rescue team members. The first priority is to **ensure the safety of the mine rescue team members**. The safety of the team is of the utmost importance. Teams that enter a mine in the event of an emergency are taking a calculated risk, and do not enter unnecessarily, as this would endanger more lives. Making every effort to **rescue or secure the safety of the affected miners** is the second priority that guides the mine rescue team. Finally, the teams are responsible for **protecting mine property from further damage caused by fires, cave-ins, etc.**

The mine rescue teams know that this is the most demanding work they might ever do and it is the discipline to prepare that leads to success. Mine rescue teams train to expect the worst, and hope these skills will never be used. This is how the Chilean mine rescuers, Upper Big Branch (West Virginia) mine rescuers and rescue teams throughout the industry are trained, yet when called upon, did their job and met demands before them in heroic fashion.

For more information on the Indiana Bureau of Mines, please visit www.in.gov/dol/mines.htm. Mine safety and health regulations may be found online at www.msha.gov/.

OSHA's New Cranes and Derricks Standard

Bryan Thais, IOSHA Construction Safety Supervisor, discusses the ins and outs of the new Crane and Derrick Standard.

The



federal Occupational Safety and Health Administration (OSHA) recently updated and issued new regulations regarding the **safety of cranes** used in the construction industry. The new standard will replace the existing 40 year-old standard. Several older regulations have been incorporated into the new standard, but there are significant changes in the new rule. These include ground conditions, assembly/disassembly requirements, working near power lines, operator qualifications and certification, inspections and qualifications of signal persons and riggers.

The new crane standard covers **power operated equipment** which can hoist, lower and horizontally move a suspended load during construction work. Types of equipment covered will include crawler cranes, tower cranes, cranes on barges and mobile cranes, such as truck and rough terrain cranes. It does not cover backhoes, excavators, forklifts and other types of equipment used to lift and suspend loads. Articulating cranes or knuckle boom truck cranes that deliver and offload material at a job site are not covered by the standard, if the machine has an automatic overload prevention device. However, these types of cranes are covered if they are used to hold and support a prefabricated component of a structure or structural steel.

Under the new rule, the controlling entity, (defined as “the employer that is a prime contractor, general contractor, construction manager or any other legal entity which has overall responsibility for the construction project, its planning, quality, and completion”), must ensure that the ground conditions are firm, drained and graded in a manner to sufficiently support the crane and any associated loads. It must also inform the crane user of any known underground hazards beneath the set up area, such as voids, tanks or other hazards.

Employers must comply with the manufacturer’s procedures for assembly/disassembly, or follow their own criteria developed by a qualified person. The assembly and disassembly of cranes must be overseen by an Assembly/Disassembly (A/D) Director who is both a competent and qualified person, and is knowledgeable of all applicable procedures related to the assembly of cranes. They must also verify all capacities of equipment, including rigging performed dur-

ing assembly and disassembly. A qualified rigger must follow manufacturer’s procedures when using synthetic slings. Outriggers and stabilizers must be extended or deployed as specified in the load chart. The A/D Director must also address hazards associated with the operation. There are additional requirements for tower crane assembly and disassembly.

The employer must identify the crane’s work zone and determine if it could get closer than 20 feet to a power line while operating within the work zone. If so, they must: de-energize the line, implement measures to stay 20 feet away from the lines or determine the voltage and the minimum clearance distances based upon that voltage using Table A in the standard.

Cranes must be inspected when the equipment has modifications or additions, repairs or adjustments, at the completion of assembly, prior to each shift, monthly and annually. Documentation of these inspections is required. Wire rope used on the crane must also be inspected.

Any person **operating** a crane must be certified and qualified to include a written examination of safe operating procedures for the equipment operated and understanding the subject matter criteria. It also includes a practical exam showing the applicant has skills to safely operate the equipment including calculating load information and doing shift inspections. Employers have four options to certify and qualify operators.

A **qualified signal person** must know and understand the types of signals used and be competent in their application. They must have a basic understanding of the crane’s operation and limitations. Qualified signal persons must pass a written or oral test and a practical test. The employer must have documentation or certification for each qualified signal person. The employer can use a third party qualified evaluator or the employer’s qualified evaluator to ensure the signal person meets the qualification requirements and provide the required documentation/certification.

Qualified riggers are required during hoisting activities for assembly/disassembly work. This includes when workers are hooking, unhooking, guiding a load or doing initial connection of a load to a structure within an area where suspended loads could fall in an accident. Qualified riggers must have the ability to properly rig any load for a particular job.

The new standard is complex. Employers should review it carefully to determine which parts apply to their operations. Review the new crane standard at www.osha.gov/cranes-derricks/index.html.

IOSHA Found It

IOSHA Compliance Safety and Health Officer, **Laura Groom**, discusses what happens when employer policy and manufacturer's recommendations clash.

Annually, tens of thousands of injuries related to Powered Industrial Trucks (PITs) or forklift trucks occur in U.S. workplaces. Forklift trucks are regulated by IOSHA under [29 CFR 1910.178](#). Unsafe operation of forklift trucks could potentially **result in death or serious injuries**, such as broken bones. Therefore, IOSHA considers the majority of [29 CFR 1910.178](#)

violations to be serious hazards.

The following summarizes a company and issue that I recently investigated. The investigation was a result of a **formal complaint** alleging that forklift truck operators were being required to move products that exceeded the amount of weight that the forklift trucks were rated to lift.

During the investigation, I learned that several years ago company management officials created a Standard Operating Procedure (SOP), which required employees

A forklift in operation is "dragging" the bottom pallet. Additionally, the load weighs more than the forklift's rated capacity. (Photo taken by IOSHA Compliance Safety and Health Officer Laura Groom)

to move pallets in a manner that contrasted with the forklift truck manufacturer's operating manual and the employer's own training material. This SOP required employees to drag two full pallets at a time. The word "**drag**" describes a scenario where the forks of the forklift truck are tilted forward and a portion of the bottom pallet makes contact with the ground, thereby creating a "drag."

This concept of "dragging" contrasts with the employer's training material used to train forklift operators. Also, it contrasts with the manufacturer's instructions, located on the forklifts. The following is a summary of specific statements

found in the employer's training materials and the manufacturer information for operation of the forklift truck. Each of the following statements contrast with the employer's SOP "drag" policy:

- *When traveling with a load, keep the load tilted back slightly.*
- *While picking up the load, make sure that the load does not exceed the forklift capacity.*
- *Tilt the mast fully back to cradle the load.*
- **WARNING** – *Handle only loads within the capacity of the lift truck as shown on the capacity plate.*

The employer was operating 22 different forklift trucks (ten with a capacity of 4,750 lbs. and 12 with a capacity of 3,150 lbs.) to haul a variety of canned items in shrink wrapped pallets. On a typical day, the forklift truck operators moved more than 5,000 pallets. During this inspection, I witnessed several instances where the employees were using forklifts to "drag" two pallets of product exceeding 2,000 pounds over the rated capacity listed for the forklift truck.

Employees interviewed said that when moving two pallets at a time, it was not possible to operate the forklift trucks with the forks off of the ground and the load cradled with the mast fully back, because the forklift truck becomes unstable. In other words, the back wheels of the truck were raised off the ground because the forklift was carrying weight too great for it to safely handle.

This inspection's end result was the issuance of a Safety Order with a substantial monetary penalty. This situation is a learning experience for both employers and employees. Employers should ensure that their SOPs and training policies adhere to manufacturer's recommendations and OSHA regulations.

Employees should not hesitate to speak up if they notice discrepancies between employer policies and safety regulations. In this circumstance, an employee spoke up, and may have protected himself and other co-workers from serious injury or death.

More information on the safe operation of PITs is available by visiting OSHA online at www.osha.gov, by clicking on "P" on the A-Z index. PIT training materials, developed by OSHA, are also available online by visiting OSHA's website.

Anatomy of a Turnaround

The following article was featured in *The Journal for Surface Water Quality Professionals*. It has been reprinted with the permission of the author, Daniel C. Brown.

If you think safety isn't worth the time and safety cultures are hokum, take a look at **Fox Contractors Corp.** of Fort Wayne, Indiana. A site-development and heavy/highway contractor, Fox employs some 350 personnel at its peak workload. In former days, the company focused on production first—get 'er done, one way or another.

Then along came the **Parkview North Hospital**, a \$600 million expansion project in Fort Wayne, one of the area's largest construction projects. Fox, a union contractor, won the site development contract with the general contractor—a joint venture of **Weigand Construction**, Fort Wayne, and **Pepper Construction**, which works in multiple states. When the digging started, problems arose.

It wasn't pretty. Fox experienced multiple utility hits in a short time, causing brief outages and inconveniencing health care delivery. Key Fox personnel lost their jobs.

Fox and the general contractor each knew they had to turn the situation around. Each side needed the other to succeed. Questions arose: Why? What was happening? Were both sides really communicating and working as a team?

"Much of safety is about having a safety-first attitude, practicing good communications—really listening—and caring enough to eliminate unsafe acts," says Sheryl Wiser, whom Fox hired as safety manager.

Adds Mark Spears, P.E., safety director with Fox: "We learned that we can work safely and maintain production—that we don't need to increase our bidding price to pay for safety. Due to our aggressive approach to utility damage prevention and cultural renaissance on this project, we were awarded change orders on the job, and our contract went from \$4 million to \$12 million."

Solving the Problem

Improvement required the team to identify the true root causes of the utility hits. The project team used a technique called root cause analysis to identify the underlying causes of the utility hits. It is human nature to quickly blame an individual and look no further than the obvious. Root cause analysis facilitates the process of looking beyond the obvious and drills down into management systems to uncover systemic flaws in processes. Once the root causes were identified, the team implemented the following changes to prevent reoccurrence.

The utility locating process was completely overhauled. The team had access to as-built drawings but they were not necessarily complete and accurate. Fox scheduled meetings with utilities to review the project scope. Weigand/Pepper

hired a private locating service to locate all utilities and put them on one drawing.

Communications improved. Meetings called for all hands on deck—the GC's superintendent, Fox, the road contractor, electrical contractor, landscaper, and private locate company. Drawings were reviewed and utilities marked. This evolved into a coordination meeting held every day before trades began work. The previous day's progress was reviewed, and crews identified the day's upcoming work. As-built drawings were reviewed and updated daily.

Point Man

The root cause process also identified this key to success: the general contractor designated one man, Josh Kirchner of Weigand/Pepper, to "bird-dog" the utility location process all day every day. Kirchner ensured that utilities were painted and staked, and verified the location of all shut-offs, valves, and system served by utilities. Kirchner, along with the subcontractors involved, marked all utility locations on the master utility drawing to ensure that the most up-to-date information was available to the project team.

Subcontractors, including Fox, had to plan—and notify the GC of an intention to dig. The subcontractor would notify both public and private utility locating services and obtain a dig number, which was good for 20 days. Subcontractors physically observed the location of utility lines with the locating service. The GC supervisor verified utility locates against the drawings. Discrepancies were identified and investigated further for resolution before work continued. Newly found utilities were marked on the master drawing.

Before each underground task, the excavating crew was assembled to review the daily excavation plan, including protective systems, utility locations, and daylighting procedures for all located utility crossing points. These daily morning meetings, led by the foremen, ensured that all tradesmen not only understood the process but had buy-in and ownership of the process.

Management developed formal task procedures. The GC superintendent reviewed the excavation, digging, or augering, and established hand-digging procedures to expose a utility line. A subcontractor could excavate by machine, dig, or auger up to the 4-foot limit on either side of a utility without consulting GC supervision. A subcontractor would pothole with a vacuum truck or hand-excavate all utility crossing points until they were exposed. A Weigand/Pepper Construction supervisor observed all hand-digging and potholing.

After utilities were exposed, the GC superintendent up-

dated the plans to reflect the location of installed utilities. A surveyor documented the precise locations of utilities. Upon completion of the utility exposure, copies of the location were made and distributed.

Post-Analysis

In high-level discussions between Weigand/Pepper and Fox, it became clear that future success called for a drastic overhaul of current practices. Company cultures needed changing, not just safety procedures. Superintendents and foremen needed to be “reprogrammed.” Says Adam Day, a Fox vice president: “When tradesmen are held accountable by the safety staff and management—and they in turn hold each other accountable—we will avoid accidents.”

Fox did respond to the problems at Parkview. The company identified the areas to be improved and developed a plan to improve. Fox hired Sheryl Wiser, a safety professional, to work with the crews. Additional safety reps were hired—one for every 12 tradesmen.

“The cost increase was only in the single-digit percentages to meet the new standards,” says Ben Anderson, project manager with Fox. “But if a utility strike occurred because we didn’t follow the standards and were at fault, the cost could be well over six digits.”

Fox began to perform daily toolbox talks. Foremen developed task-hazard analyses nightly and when the work changed. Then, each morning, the task-hazard analysis was ready to be reviewed by the crew. All of the crews came together for safety meetings and training.



Parkview Regional Medical Center: This photo was taken to reference the progress of the construction underway at the Parkview Regional Medical Center, in Fort Wayne, Indiana. The Indiana Department of Labor is actively engaged in a strategic occupational safety and health partnership with Weigand/Pepper JV. (Photo taken and submitted by Sheryl Wiser, Safety Manager - Fox Contractors)

Fox’s president attended those meetings, stated the company’s position, and told those who did not agree to leave the project. Management raised its standards and required personal protective gear—hardhats, safety glasses, and high-visibility vests—all the time, even when inside equipment. Excavation and mobile equipment requirements were developed.

It all has worked wonders. “We now strive to identify potential hazards and prevent potential accidents in advance of the work ever occurring,” says Dallas Day, Fox Contractors’ president.

About the IDOL’s Alliances and Partnerships

On April 16, 2009, the Indiana Department of Labor and Weigand Pepper Joint Venture executed a joint occupational safety and health partnership. The agreement focuses on worker safety and health at the Parkview Regional Medical Center construction project, a \$370 million dollar project.

Using leading indicators, such as jobsite observations, this partnership continues to positively impact worker safety and health. Observations are compiled, and used to generate subcontractor trending reports. By sharing these reports with subcontractors, training plans and other corrective measures may be taken to eliminate safety and health concerns.

In addition, monthly partnership stakeholder meetings include the owner’s participation as well as key individuals from the Indiana Department of Labor’s OSHA Consultation Program, INSafe, Weigand Pepper JV and subcontractors. These meetings allow for discussion of current issues, trend-

ing, root cause analysis as well as a forum for team members to provide suggestions.

The Indiana Department of Labor works with the public to promote safety and health in Hoosier workplaces by offering OSHA compliance assistance services and programs to businesses and organizations through the OSHA Partnership and Alliance Program. The services and programs help organizations and businesses work cooperatively with the Indiana Department of Labor and comply with the **Occupational Safety and Health Act of 1970** (OSH Act of 1970).

To learn more information about the Weigand Pepper Joint Venture partnership or the Indiana Department of Labor’s alliance and partnership program, please visit www.in.gov/dol/2387.htm.



Manufacturing

In 2009, the Bureau of Labor Statistics (BLS) estimated that Indiana's manufacturing industry employed more than 470,000 workers, comprising more than 17% of Indiana's total labor force. Also in 2009, the manufacturing industry had the largest number of recordable injuries and illnesses of any other industry in the state, with almost 23% (21,500) of all injuries and illnesses.

Between 2005 and 2009, the manufacturing industry had 60 fatalities, averaging 12 annually. During this time period in the manufacturing industry, **men** (53) suffered the majority of the fatal occupational injuries. The most frequent primary source of fatal injuries in the manufacturing industry during this period was **vehicles** (16). This includes **highway vehicles** (9), which were **primarily trucks** (5), and **plant and industrial powered vehicles and tractors** (4). Occupations with high numbers of fatal injuries during this period included **production** (22), **transportation and material moving** (15) and **installation, maintenance and repair** (8).

While the manufacturing industry had the highest number of injured and ill workers, their rate of non-fatal work-related injuries and illnesses (4.7 per 100 workers) was lower than the rates for the **arts, entertainment and recreation** (7.2) **healthcare and social assistance** (6.5) and the **state and local government** (5.0) industries. The 2009 non-fatal occupational injury and illness rate (4.7) for this industry

is the lowest rate reported for the manufacturing industry since the BLS began data collection. The 2009 rate is also nearly 21% lower than in 2008. Sub-industries in the manufacturing industry with high non-fatal worker injury and illness rates in 2009 included **other rubber product manufacturing** (11.7), **foundries** (11.2) and **fabricated structural metal manufacturing** (10.9).

Many injuries and illnesses require the employee to take days off from work. In 2009, 3,910 injuries in the manufacturing industry required employees to spend one or more days away from work. The average number of days away from work for an affected employee in the manufacturing industry in 2009 was seven. The number of cases with days away from work in 2009 is 1,380 fewer than those reported in this industry in 2008. Employees that suffered these injuries were predominately **male** (75%), **Caucasian** (72%) and between the **ages of 45-54** (28%). The most common events resulting in an injury with days away from work were **struck by object** (17%), **fall on the same level** (14%) and **overexertion in lifting** (13%).

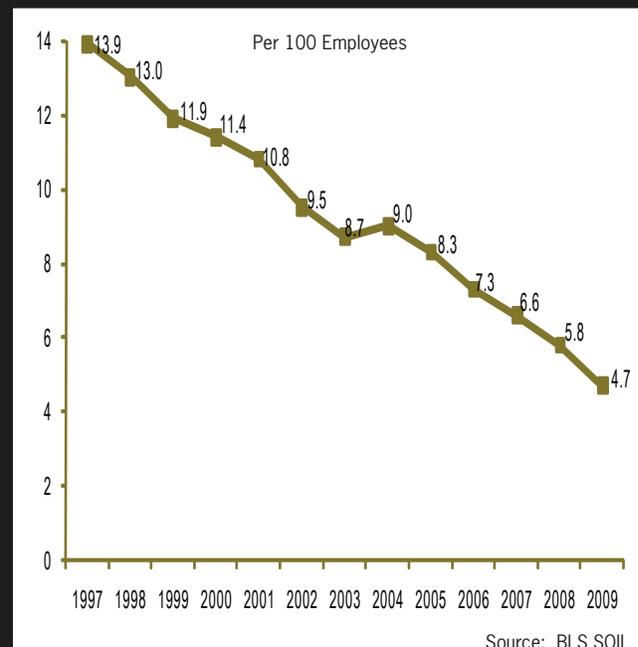
The most frequent sources of all injuries were **parts and materials** (21%), **floor and ground surfaces** (19%) and **motion or position of worker** (18%). The leading natures of injuries were **sprains, strains and tears** (31%), **fractures** (13%) and **bruises and contusions** (9%).



Manufacturing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	675,000	10.6	13.9	95,400	25
1998	684,000	9.7	13.0	88,900	24
1999	690,000	9.2	11.9	82,900	24
2000	686,000	9.0	11.4	78,300	19
2001	639,000	8.1	10.8	68,100	22
2002	588,000	7.2	9.5	87,800	24
2003	573,000	6.8	8.7	68,100	15
2004	572,000	6.6	9.0	51,400	15
2005	571,000	6.3	8.3	48,600	10
2006	570,000	6.0	7.3	41,900	13
2007	568,000	5.6	6.6	36,600	7
2008	538,500	5.0	5.8	30,800	18
2009	470,800	4.3	4.7	21,500	12

Indiana Manufacturing Injury and Illness Rate



Joseph Black, BLS Survey Coordinator with the Indiana Department of Labor's Quality Metrics & Statistics Division provides a look into the meat production industry.

The slaughtering, processing and packaging of meat has long since been an industry associated with high incidence of work-related injuries and illnesses. Workers in this industry are exposed to potential hazards including the use of knives, falls, back injuries and cumulative trauma disorders.

According to the federal Bureau of Labor Statistics (BLS), between 2006 and 2009, 107,200 American workers in the **red meat production** industry suffered an injury while working. Over 22,000 of those injuries were experienced by workers in this industry in 2009 alone. Also, between 2006 and 2009, 58,600 employees in the **poultry processing industry** experienced a work-related injury or illness.

Knives are a major cause of cuts and abrasions to the hands and the torso. Although modern technology has eliminated some hand knife operations, it remains the most commonly used tool and causes the most frequent and severe accidents.

Falls also represent one of the greatest sources of serious injuries in these industries. When animal fat accumulates on floors, it can create treacherous walking and working surfaces for employees.

Back injuries are frequently suffered among meatpacking industry workers, especially those working in the shipping department. These employees, called "luggers," are required to carry carcasses on their shoulders, often weighing up to 300 pounds.

In addition, **cumulative trauma disorders** are widespread among workers in the meatpacking and dairy production industries. These disorders include **tendonitis** and **carpal tunnel syndrome** (CTS), and often afflict workers whose jobs require repetitive hand movement and exertion.

U.S. Poultry Production			
Year ¹	Net Ready-to-Cook Poultry (number of pounds) ²	TRC* in Poultry Production ³	Number of Pounds of Poultry Produced Per Recordable Case ⁴
2006	41,231,372,262	15,900	2,593,168
2007	42,142,752,978	15,000	2,809,516
2008	43,234,795,025	14,900	2,901,664
2009	41,218,932,970	12,800	3,220,229

*TRC = Total Recordable Cases

¹Latest data may be preliminary.

²Total RTC production (Federally inspected and other production) less further-processed and cut-up meat condemned under Federal inspection. Data from USDA, World Agricultural Outlook Board, "World Agricultural Supply and Demand Estimates" and supporting materials and ERS estimates of per capita disappearance.

³Number of recordable injury illness cases from Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses in cooperation with the Indiana Department of Labor.

Studies conducted by occupational safety and health experts indicate workers are often injured because they do not receive safety training, even on jobs involving dangerous equipment. Studies also indicate that younger, and especially new, employees are most at risk for suffering a work-related injury or illness because they are not taught the necessary safety measures. More experienced workers may become injured because as the task becomes routine, they may not be as cautious.

For more information on how to prevent injuries and illnesses in meatpacking occupations, please visit www.osha.gov/SLTC/meatpacking/index.html. Additional information is available from the National Institute for Occupational Safety and Health (NIOSH) online at www.cdc.gov/niosh.

U.S. Red Meat Production						
Year ¹	Total U.S. Red Meat Production (in pounds) ²	TRC* in Animal Slaughtering ³	TRC in Meat Processed from Carcasses ⁴	TRC in By-product Processing ⁵	Combined TRC	Number of Pounds of Meat Produced Per Recordable Case
2006	47,675,100,000	19,200	11,100	900	31,200	1,528,048
2007	48,819,600,000	18,500	9,400	700	28,600	1,706,979
2008	50,362,000,000	16,000	7,900	900	24,800	2,030,725
2009	49,412,400,000	14,200	7,700	700	22,600	2,186,389

*TRC = Total Recordable Cases

¹Latest data may be preliminary.

²Cold storage data converted to carcass-weight-equivalent basis. Source: USDA, World Agricultural Outlook Board, "World Agricultural Supply and Demand Estimates" and supporting materials and ERS estimates of per capita disappearance.

³NAICS 311611 Animal (except Poultry) Slaughtering comprises establishments that are primarily engaged in slaughtering animals (except poultry and small game). Also included are establishments that slaughter & prepare meats.

⁴NAICS 311612 Meat Processed from Carcasses comprises establishments primarily engaged in processing or preserving meat and meat byproducts (except poultry and small game) from purchased meats. Also included are establishments primarily engaged in assembly cutting and packing of meats (i.e. boxed meats) from purchased meats.

⁵NAICS 311613 Rendering and Meat By-product Processing comprises establishments primarily engaged in rendering animal fat, bones, and meat scraps.

State and Local Government

State and local government employees make up almost 14% of the Hoosier workforce. Occupations found within state and local government employment include **elected officials, police, firefighters** (career and volunteer), **health-care workers** and **educators**. Public sector workers are protected by the same occupational safety and health standards as their private industry counterparts in Indiana and other state plan states. Federal OSHA does not regulate any public sector employers.

State and local government has one of the highest number of injured or ill workers in Indiana. In 2009, 15,300 workers in state and local government suffered a workplace injury or illness. This is 200 fewer injuries and illnesses than those reported in 2008. The 2009 corresponding non-fatal worker injury and illness rate was 5.0, which is down more than 12% from 2008. Work groups in state and local governments with high worker injury and illness rates include **state nursing and residential care facilities** (14.0), **local transit and ground transportation** (11.4) and **state hospitals** (9.8).

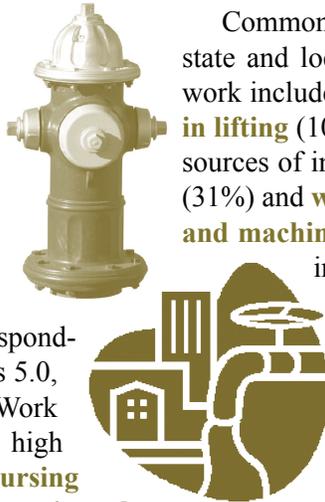
Over 3,600 of the 15,300 reported injuries in this sector required one or more days away from work for the affected worker. In 2009, the average number of days away from

work for state and local government employees was five days, one day less than the private industry's average of six.

The most frequent injuries suffered by a worker in the state and local government industry are **sprains, strains and tears**, which occurred 1,470 times (40%). The second most common nature of injury was **soreness and pain** (15%). The third leading nature of injury was **fractures** (11%).

Common injury events experienced among workers in state and local government that involved days away from work included **falls on the same level** (26%), **overexertion in lifting** (10%) and **struck by object** (9%). Most frequent sources of injuries ranged from **floor and ground surfaces** (31%) and **worker motion or position** (15%) to **containers and machinery** (8%). Employees that most often suffered injuries resulting in days away from work were **male** (55%), **Caucasian** (65%) and between the **ages of 45-54** (30%).

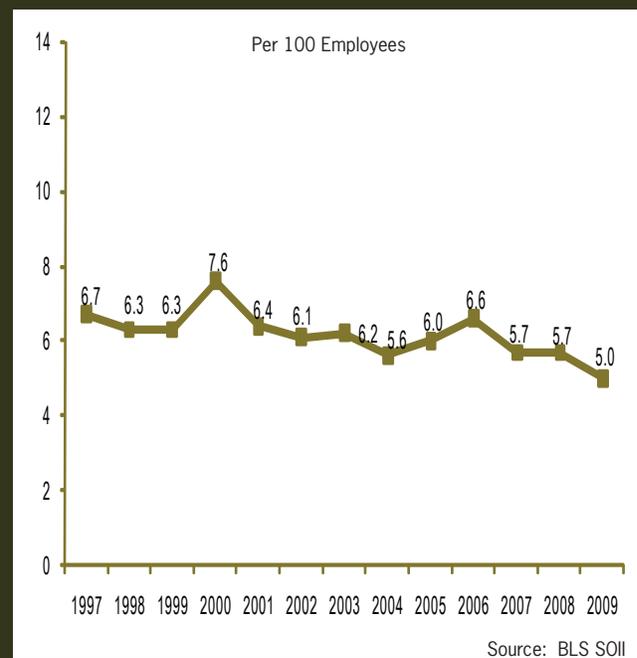
From 2005 to 2009, 41 workers in state and local government were killed on-the-job. During this time frame, the predominant source of injury was **highway vehicles** (23). Six of these Hoosier workers were killed in 2009 alone. In 2001, this industry experienced the highest number of occupational fatalities in a single-year period with 16.



State and Local Government Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	Data not available	6.7	18,200	15
1998	256,500		6.3	17,100	13
1999	339,500		6.3	17,800	14
2000	338,400		7.6	21,800	13
2001	346,400		6.4	17,900	16
2002	355,600		6.1	17,300	9
2003	355,300		6.2	18,900	7
2004	360,900		5.6	16,900	6
2005	362,200		6.0	17,500	9
2006	360,300		6.6	19,700	7
2007	361,200	5.7	17,100	9	
2008	368,800	6.3	5.7	15,500	10
2009	371,100	5.8	5.0	15,300	6

Indiana State and Local Government Injury and Illness Rate



INSafe Safety Consultants, [Debra Rauen](#) and [Mark McDaniel](#), discuss options for emergency responders dealing with confined space entry.

Each year, many workers are killed and thousands are injured as a result of confined space operations, according to the National Institute for Occupational Safety and Health (NIOSH). Many of these fatalities involve the rescuer.

The Indiana Occupational Safety and Health Administration (IOSHA) covers public sector firefighters, as defined in the Indiana Code. Therefore, industrial fire brigades, paid fire departments and volunteer fire departments must comply with [29 CFR 1910.156](#). This requires the employer to provide training and education relating to fire brigade duties.

Confined spaces may be found within towns, cities, townships, districts, counties and industrial settings. Fire departments are required to evaluate their response jurisdictions and what the function of their fire departments will be. OSHA defines a confined space as: (1) **large enough and so configured that an employee can bodily enter and perform assigned work**, (2) **has limited or restricted means for entry or exit** (e.g. tanks, vessels, storage bins, hoppers, vaults and pits) and (3) **is not designed for human occupancy**.

A permit-required confined space is defined as a space that (1) **contains or has a potential to contain hazardous atmosphere**, (2) **contains material that has the potential for engulfing an entrant**, (3) **has an internal configuration that an entrant could be trapped or asphyxiated**

by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section or (4) contains any other recognized serious safety or health hazards.



Once a department determines what confined/permit-required confined spaces are located within their responding jurisdiction, it must decide what function it will provide. If it is decided that firefighters will not enter confined spaces, the department should implement effective measures to communicate and train the firefighters on the written policy and procedures.

Five common issues with respect to confined space entry are: (1) **not monitoring the confined space prior to and during entry**, (2) **failure to remove hazards from the confined space**, (3) **bringing hazards into a space**, (4) **failing to have trained rescue personnel** and (5) **failing to use a mechanical means of rescue**.

Preventing emergencies by effectively managing the entry process is key to confined space safety. It is human nature to help those in need of assistance, and probably more so for emergency responders. The first thing taught at any emergency scene is “**scene size-up**” and “**scene safety—always protect yourself first!**”

It Happened Here: Delaware County, Indiana

Background: Between 2005 and 2009, 96 U.S. workers died in a confined space.

Fatal Event: On May 26, 2010, in Delaware County, volunteer fire fighters responded to a 911 call that two men were trapped at the bottom of a well. The first firefighter to arrive on-site entered the well to assist; however, the firefighter was overcome by the muriatic acid vapors as well. A second firefighter arrived on-site, entered the well and was also overcome by the vapors.

The next firefighters to arrive saw all four men at the bottom of the well. Prior to entering, they suited up in self-contained breathing apparatus (SCBA), proceeding to extract the wounded men one at a time. All four men were transported to a local hospital. The first two men to

enter the well died as a result of their injuries.* The first two firefighters who attempted the initial rescue sustained lacerations and respiratory failure but eventually made a full recovery.

Discussion: Employers must conduct an assessment of the entire facility and service area to determine if confined spaces exist. If confined spaces exist, a written confined space program must be developed. All employees who may potentially enter the confined space must be trained on this written policy. Prior to entering a confined space, an assessment of any potential hazard existing in the space must be done and the appropriate precautions must be taken. Firefighters not trained on confined space rescue should not attempt one.

*Because these men were not employees, but rather self-employed, at the time of the incident, their deaths were not inspected by IOSHA.

Retail Trade

Employing

about 316,000 Hoosier workers, Indiana's retail trade industry consists of grocery stores, shopping malls, boutiques, convenience stores and home supply centers. The industry is Indiana's fourth largest employment sector.

The non-fatal occupational injury and illness rate for the retail industry is 4.3 (per 100 workers), which is an approximate decrease of nearly 16% from 2007. The 2009 rate is the lowest rate on record for this Indiana industry.

Almost 23% (2,330) of the 10,200 injuries reported in the retail trade industry required the affected worker to miss at least one day of work. On average, retail employees who suffered a work-related injury spent seven days away from work—one more day than the state average of six.

Workers in the retail trade industry are subjected to many occupational health and safety hazards, which include contact with the public; long and irregular hours and ergonomic hazards from repetitive motions like lifting, bending and reaching. The predominant injury suffered by workers in this industry was **sprains, strains and tears** (42%). Other frequent injuries reported by workers in the retail trade industry include **soreness and pain** (13%) and **bruises and contusions** (12%).



Occupational injuries and illnesses requiring days away from work in the retail industry in 2009 occurred most often among **males** (55%) and among workers **45-54 years old** (30%). Frequent sources of injury were **floor and ground surfaces** (27%), **worker motion or position** (18%) and **containers** (14%). Overall in the retail trade industry, the top events resulting in injury were **falls on the same level** (24%), **overexertion in lifting** (17%) and **struck by objects** (15%).

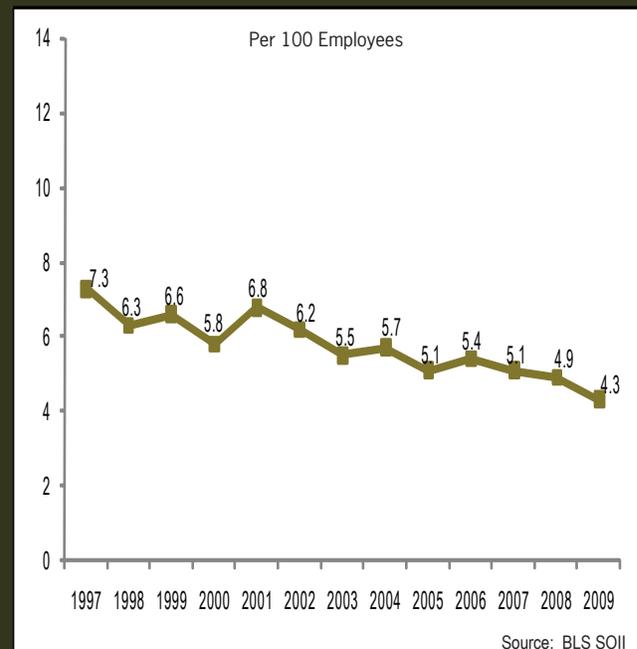
Businesses in the retail industry with high worker injury and illness rates include **building material and supply dealers** (6.4) and **food and beverage stores, gasoline stations and general merchandise stores**, all of which were tied (5.2) for the second highest non-fatal occupational injury and illness rates.

Nine retail industry employees were fatally injured while working in Indiana in 2009. The most common fatal events for workers in this industry in 2009 were **assaults and violent acts** (5) and **homicides** (3). In 1998, the retail trade industry reported a series high of 23 worker deaths.

Retail Injury and Illness Rates and Numbers

Year	Employment (000's)	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	280,300	6.8	7.3	28,900	19
1998	379,300	6.5	6.3	25,200	23
1999	387,200	6.1	6.6	26,400	10
2000	354,100	5.9	5.8	23,800	13
2001	342,200	5.7	6.8	26,300	12
2002	338,400	5.3	6.2	23,200	15
2003	333,300	5.3	5.5	14,100	10
2004	332,900	5.3	5.7	13,700	17
2005	332,100	5.0	5.1	13,000	13
2006	330,700	4.9	5.4	13,700	5
2007	330,900	4.8	5.1	12,500	4
2008	328,400	4.4	4.9	12,100	13
2009	316,000	4.2	4.3	10,200	9

Indiana Retail Injury and Illness Rate



Professional and Business Services

Professional and business services is a broad sector that includes legal, accounting, engineering, computer, veterinary and photographic services. It also includes management, administration, facilities support, waste management and remediation services. According to the federal Bureau of Labor Statistics (BLS), this industry employed more than 270,000 Hoosier workers in 2009.

The Indiana non-fatal occupational injury and illness rate for this industry is 1.6, which is 11% below the national professional and business service rate of 1.8 (per 100 workers). The 2009 rate is approximately 33% lower than the 2008 non-fatal occupational injury and illness rate for this industry. This is the **greatest one-year decline and the lowest non-fatal occupational injury and illness rate** experienced in this industry since at least 2003. On average, 4,500 employees are injured or made ill each year in the professional and business service industry.

In 2009, workers in this industry experienced 1,800 fewer injuries and illnesses than in 2008. About 28% of the injuries experienced by workers in this industry required a worker to miss at least one day of work. The average duration of work missed by injured or ill workers was five days—two more days than the previous year (2008).

Approximately 30% of the injuries incurred by work-

ers which resulted in days away from work were **sprains, strains and tears**. **Fractures** (19%) and **bruises and contusions** (11%) were also frequent injuries suffered by workers in the professional and business services industry. The top two leading injury events were **falls on the same level** (30%) and **struck against object** (12%). A three-way tie between **falls to a lower level, slips and trips and transportation incidents** (7%) were the next leading injury events in this industry in 2009.

Caucasian (51%) **males** (58%) experienced the majority of injuries in this industry in 2009. The majority of injured workers in this industry in 2009 were **25-34 years old** (30%).

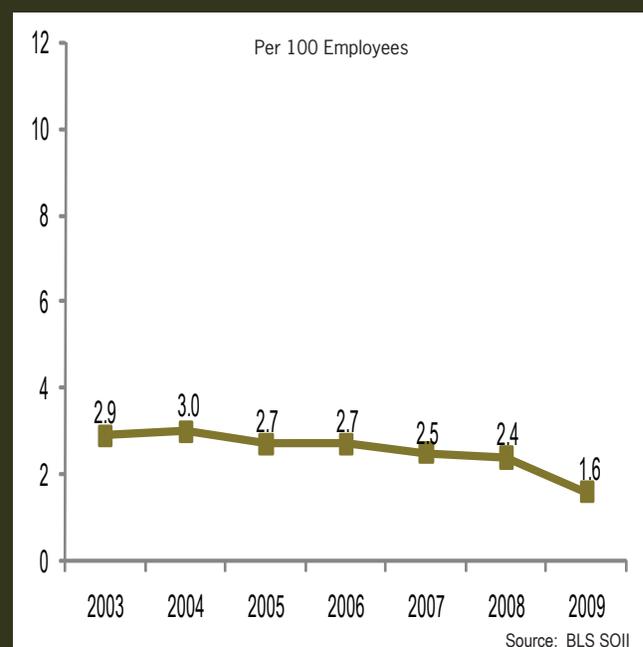


The BLS redefined the industry characteristics in 2003. The number of fatalities shows no definitive trend with a low of six in 2009 and a high of 13 in 2006. From 2005 to 2009, 50 workers in the professional and business services industries were killed on-the-job. **Men** suffered all but three of these fatal injuries (47). Nearly half (24) of workers killed during this time-frame were engaged in **vehicular and transportation operations**.

Professional and Business Services Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	258,700	2.5	2.9	4,600	11
2004	266,300	2.4	3.0	4,300	7
2005	272,400	2.4	2.7	4,400	12
2006	279,300	2.1	2.7	4,900	13
2007	288,700	2.1	2.5	6,100	11
2008	292,400	1.9	2.4	4,700	8
2009	272,500	1.8	1.6	2,900	6

Indiana Professional and Business Services Injury and Illness Rate



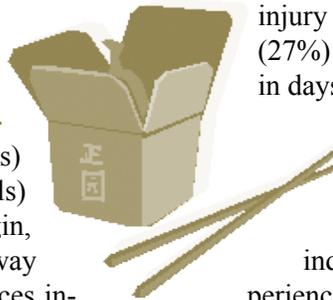
Accommodation and Food Services

Nothing

says Hoosier hospitality like the Indiana workers in the accommodation and food service industry. Providing fellow Hoosiers and tourists with services that include lodging, meal preparation or beverages for immediate consumption, the hospitality industry employed more than 240,000 workers in 2009.

The Indiana non-fatal occupational injury and illness rate for the accommodation and food service industry in 2009 was 3.6 per 100 workers. After two years of a static rate in 2007 and 2008, this is approximately a 12% reduction. The 2009 rate also represents a reduction of about 32% from the 2003 rate of 5.3 per 100 workers.

Nationally, sub-industries in the accommodation and food services sector with high non-fatal occupational injury and illness rates include **recreational and vacation camps** (except campgrounds) (5.6), **hotels and motels** (excluding casino hotels) (5.2) and **casino hotels** (4.5). By a narrow margin, Hoosier injuries and illnesses resulting in days away from work in the accommodation and food services industry were most often experienced by **Caucasian** (58%) **men** (51%), ages **35-44 years old**. The average number of days away from work for employees who suffered a work-related injury or illness in this industry was three days in 2009—the fewest of any other Hoosier industry.



As with all major Indiana industries, the most common injury experienced by workers in the accommodation and food services industry in 2009 was **sprains, strains and tears** (30%). **Heat burns** along with **bruises and contusions** (11%) were tied for second, likely because of exposure to food preparation equipment, such as ovens. The third most common injury workers experienced in this industry in 2009 was **fractures** (10%). Workers were most often afflicted by injuries resulting from **being struck by objects** (22%), which was followed by **falls on the same level** (19%). **Exposure to harmful substances** and **struck against objects** were tied for third most frequent injury events (13%). **Floors and ground surfaces** (27%) were the primary source of injury resulting in days away from work for the affected employee.

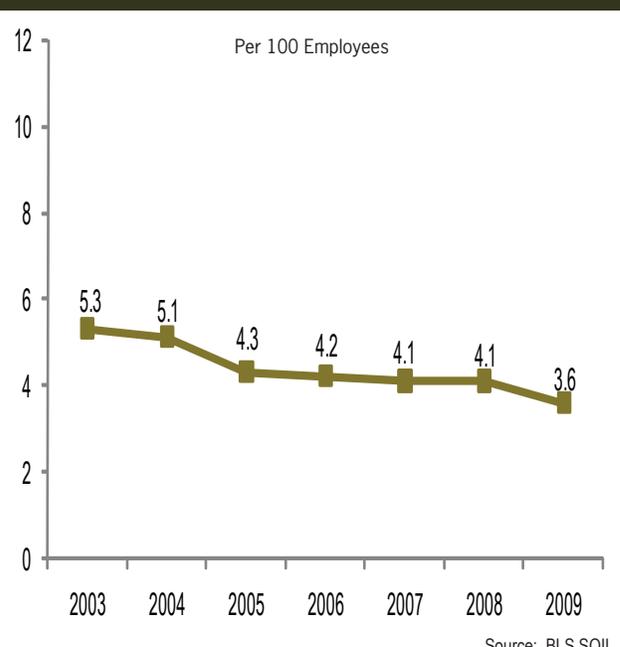
This was followed by **containers** (12%) and **handtools** (10%).

From 2005 to 2009, 18 Hoosier workers in the accommodation and food services industry were killed while working. **Men** experienced the majority of the fatal occupational injuries during this five-year period (15). Thirteen (72%) of the 18 fatalities during this five-year time frame were **homicides**.

Accommodation and Food Services Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	228,700	4.8	5.3	7,400	5
2004	230,000	4.4	5.1	7,400	-
2005	232,900	4.3	4.3	6,100	5
2006	236,100	4.5	4.2	6,300	3
2007	242,100	4.4	4.1	6,100	3
2008	244,300	4.1	4.1	5,800	3
2009	240,200	3.7	3.6	5,100	4

Indiana Accommodation and Food Services Injury and Illness Rate



INSafe Health Consultant, **Jay King**, explains why employers should develop and implement workplace violence prevention programs.

The federal Occupational Safety and Health Administration (OSHA) developed guidelines and recommendations to help reduce worker exposure to **violence in the workplace**. While there are no specific standards regarding workplace violence, an employer in Indiana who shows blatant disregard for employee safety can be cited by Indiana OSHA using the **general duty clause**.

Assaults and violent acts occurred in a number of Hoosier workplaces in 2009, including **service providing** (e.g. barbershops and fast food restaurants) (9), **retail establishments** (5), **food service and drinking establishments** (4) and **goods producing** (e.g. manufacturing facilities) (2). A number of factors increase a worker's risk of being exposed to violent acts while working. Factors increasing the risk of workplace violence include **contact with the public, exchanging money for goods and services, delivery of goods, services and passengers** (i.e. taxi cabs, public transportation, etc.), **working late night and early morning hours** and **working in high-crime areas**.

IOSHA recently cited a convenience store using the general duty clause where an employee was fatally shot while working alone, at night. While it may be difficult to anticipate and control outside hazards, such as criminal acts, employers can



implement preemptive measures to lessen the likelihood of such occurrences.

Specifically, employers should develop and implement a **workplace violence prevention program** to keep employees safe during work hours, especially during late night or early morning shifts and when employees are working alone. This may seem difficult at first, but with **job hazard analysis**, it is much easier to take proactive measures to keep employees safe from assault and violent acts.

For more information on federal OSHA's guidelines and recommendations regarding workplace violence, please visit www.osha.gov/SLTC/workplaceviolence/index.html.

Workplace Violence Fatal Facts:

- 409 Hoosier workers have been a victim of an assault or violent act since 1992.
- 17* Hoosiers suffered a fatal gunshot wound while working in 2009.
- 1 in every 6 occupational fatalities in Indiana was attributed to assault and violent acts in 2009.

Includes seven self-inflicted gunshot wounds.

It Happened Here: Allen County, Indiana

Background: Between 2005 and 2009, 13 workers in the accommodation and food service industry were victims of a homicide.

Fatal Event: In the late night hours of November 29, 2009, in Allen County, a pizza restaurant employee was delivering pizzas, unaccompanied, to a nearby neighborhood. Shortly after 10:30 p.m., police officers found the victim lying in the middle of the road. The victim was pronounced dead, as a result of multiple gunshot wounds. Additionally, the business owner failed to notify IOSHA within eight hours of the fatality.

Lessons Learned: Developing a written workplace violence program, that addresses all potential violent acts at an employer's facility is essential. Employers must also

conduct a hazard assessment of their facility, including all work areas, entrances and exits, parking lots, warehouses and delivery procedures. Reviewing current security policies will help ensure any policy developed is complete. Emergency phone numbers must also be updated and posted in a conspicuous location. Employers may also consider updating or installing security surveillance, video tape, procedures for visitors, customers, outside contractors, delivery personnel entering and exiting facility. Conducting job hazard analysis (JHA), including the hazards posed to delivery drivers will also be critical in establishing an effective program. Employees, including management, must be trained on how to appropriately address the threat of violence, and ensure that all employees know how to report violent threats.

Construction

Construction

Construction is a hazardous industry that comprises all activities involving construction, alteration and repair work. Industry workers engage in activities exposing them to serious hazards, such as falling from rooftops, working with unguarded machinery and tools, being struck by heavy equipment, electrocution and exposure to many dangerous chemicals. More than 135,000 Hoosiers were employed in this industry in Indiana in 2009.

In 2009, over 5,500 Hoosier construction industry workers suffered an occupational injury or illness. The corresponding non-fatal occupational injury and illness rate for the construction industry in 2009 remained static at 4.6 per 100 workers. The Indiana rate for this industry is more than 6% above the national construction non-fatal injury and illness rate of 4.3.

Often, workers in this industry experience injuries which are severe enough to require them to spend time away from work. In 2009, the Indiana construction industry reported 1,760, or approximately 31% of all non-fatal injuries and illnesses in this industry requiring one or more days away from work for the affected worker. This is a reduction of nearly 27% from 2008. Injured construction workers spent an average of **11 days away from work** in 2009—six days

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less than 2008. Injuries that required days away from work in the construction industry were most often experienced by **Caucasian** (73%) **males** (98%) between the **ages of 35-44** (43%).

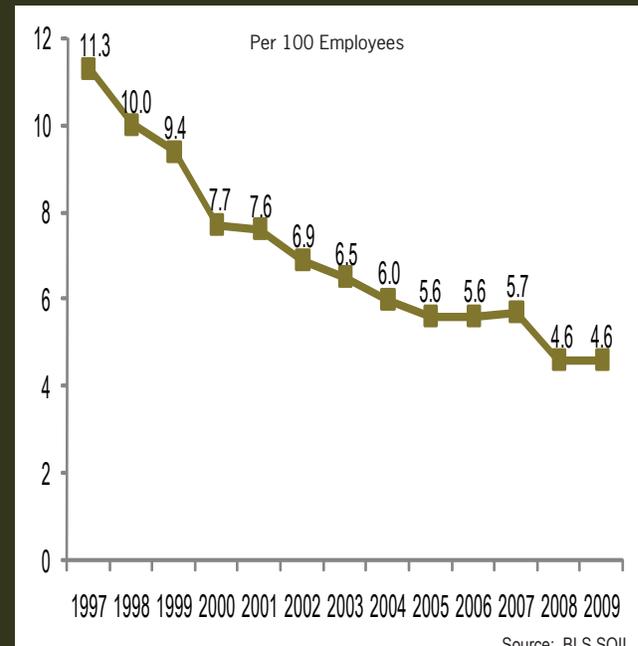
The most common injury events associated with days away from work in the construction industry included **falls on the same level** (22%), **contact with objects and equipment** (16%) and **repetitive motion** (13%). Most often, these types of injury events led to **sprains, strains and tears** (45%), **soreness and pain** (16%) and **fractures** (9%). The construction sub-industries with the highest injury and illness rates in Indiana include **foundation, structure and building exterior contractors** (7.0), **roofing contractors** (6.6) and **building equipment contractors** (5.9).

There were 112 fatal occupational injuries reported in the construction industry between 2005 and 2009. On average, between 2005 and 2009, 23 workers were fatally injured each year. **Men** suffered all but one fatal injury during this time-frame. Seventeen of these fatal occupational injuries occurred in 2009 alone. This represents 15 fewer than the recent industry high of 32, which was reported in 1996 and 2000.

Construction Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	9.5	11.3	14,700	29
1998	142,900	8.8	10.0	13,500	24
1999	146,300	8.6	9.4	12,800	30
2000	144,100	8.3	7.7	10,700	32
2001	144,600	7.9	7.6	10,200	22
2002	141,400	7.1	6.9	9,000	25
2003	139,300	6.8	6.5	8,500	15
2004	143,300	6.4	6.0	7,900	21
2005	144,600	6.3	5.6	7,500	27
2006	146,600	5.9	5.6	7,600	27
2007	153,100	5.4	5.7	7,700	21
2008	151,600	4.7	4.6	6,300	20
2009	135,300	4.3	4.6	5,600	17

Indiana Construction Injury and Illness Rate



Source: BLS SOII

Working with cranes can be dangerous to operators and employees working in close proximity to them. The hazards of using cranes to transport large, heavy and awkward loads is discussed.

To a crane operator, few experiences may be as frightening as when a crane becomes unbalanced while a load is being lifted, or when it collapses under the weight of an excessive load. Loads can vary in weight from several hundred to several thousand pounds. Serious and sometimes fatal injuries occur during the handling, loading and unloading of large, heavy loads.

Moving large, heavy loads is crucial to today's construction industry. Over the last few years, technology has been developed for these operations, including careful training and extensive workplace precautions. Significant safety issues should be considered, both for operators of these diverse lifting devices, and for employees working in close proximity.

For the safety of crane operators and other employees working in close proximity to cranes, employers must plan in advance. Advance planning can mean the difference between a safe and an unsafe operation. In the pre-planning phase, employers must review and comply with the equipment manufacturer's recommendations and all limitations applicable to the operation of all cranes. In cases in which the manufacturer's recommendations are not available, the limitations assigned to the equipment must be based on the determinations of a qualified engineer competent in this field. This determination must be documented. Attachments used with cranes must not exceed the capacity, rating or scope recommended by the manufacturer.

Mechanical handling equipment must be appropriate to the task. This includes attachments, being visually inspected before use to ensure they are in good working condition. Defective equipment must be immediately reported and removed from service. All hazards must be identified, and safe work practices must be implemented.

Work procedures should include developing and implementing safe handling procedures for transporting, loading and unloading materials. Employees must receive all appropriate training to safely carry out their tasks related to cranes.

For more information on the safe operation of cranes, please visit federal OSHA online at www.osha.gov, and click on the letter "C" on the A-Z index. Be sure to review the article titled, "New Cranes and Derricks Standard," on page 13 of this edition of *IN Review*.



Safe slab transport: An employee stays out of the way of the stone slab's fall shadow during transport. (Photo taken from www.osha.gov)

It Happened Here: Lake County, Indiana

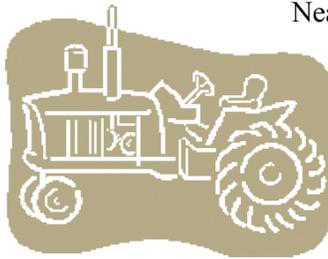
Background: Between 2005 and 2009, nine Hoosier workers were fatally injured while working with cranes.

Fatal Event: In Lake County, on June 18, 2010, employees of a crane company were in the process of moving rail cars with a Mantis crawler crane. The victim was directing the employee operating the crane. He advised his co-worker to unhook the crane boom and swing it to the left. The crane was at a 45-degree angle. The angle of the crane coupled with weight of the boom caused it to move much faster than anticipated, and the operator could not control it with the crane's hydraulic brake. The shift in weight with the angle and elevation caused the crane to tip backwards, pinning the victim underneath the crane. The victim died of injuries sustained from being struck by the crane.

Discussion: After conducting a thorough review of the worksite, it is essential for employers to develop and implement a site-specific workplace safety and health program. To understand the occupational safety and health hazards specific to the worksite, all employees working on-site must receive site, job and task-specific safety and health orientation. Employees working with or near material handling equipment must receive the appropriate training to protect themselves. When working with material handling equipment, it is critical to follow all manufacturer's recommendations to ensure the safe operation of such equipment.

Agriculture, Forestry, Fishing and Hunting

For many workers in the agriculture industry, it is a “round the clock job,” as animals must be tended to and fed daily. Soil must also be worked to ensure a fruitful growing and harvesting season. Working with large animals, machinery and putting in long hours can make farming very strenuous and dangerous work.



Nearly 60% of the transportation incidents (35) were non-highway-related. **Overtaken equipment** was the cause of 19 of the 35 non-highway-related deaths.

While Indiana’s agriculture industry had the highest number of work-related deaths in 2009, it had the lowest rate of injuries and illnesses (2.8) in the series. This industry experienced the **highest one-year reduction** of non-fatal work-related injuries and illnesses of any other Hoosier industry in 2009—63%. The lowest rate this industry had previously experienced was 5.1, recorded in 2005. The actual number of injuries reported in 2009 by Hoosier agriculture industry workers was comparatively low with 300, of which 60 (20%) resulted in days away from work.

In 2009, injured workers this industry were most often **Caucasian** (67%) **males** (83%), **35-44 years of age**. The most common events resulting in injuries requiring days away from work for affected workers was a three-way tie, which accounted for approximately 99% of all injuries. This included **contact with object and equipment, falls on the same level** and **highway accidents**. The most frequent nature of injury suffered by workers in this industry was **bruises and contusions**—accounting for half of all injuries.

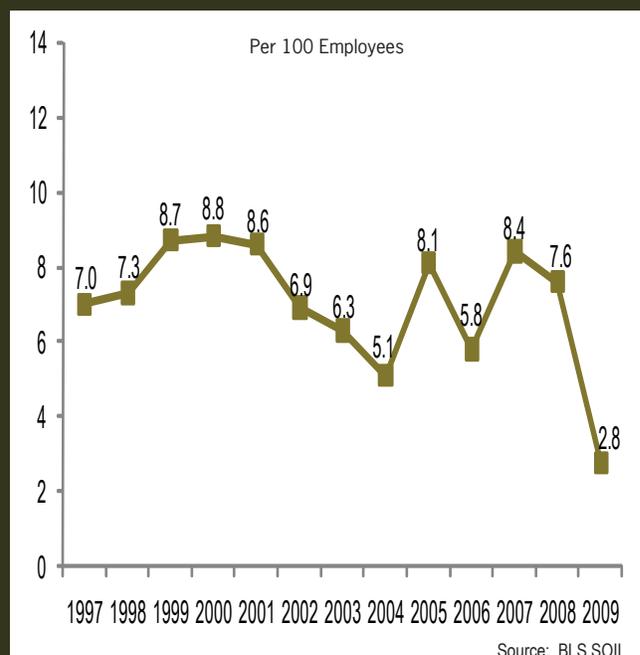
Indiana is often referred to as an agriculture state; however, less than 1% of the Hoosier workforce is employed in the agriculture industry. In contrast, the agriculture industry was responsible for 23 (19%) work-related fatalities in 2009—the highest of any other industry in the state.

Between 2005 and 2009, 108 workers were killed in this industry in Indiana. Fatal work-related injuries experienced during this time frame occurred most often among **men** (102) and among workers ages **65 years and older** (46). More than 54% of the fatal events in this industry between 2005 and 2009 were **transportation incidents** (59). **Vehicles** (63), were the primary source of fatal injury. The most common type of vehicle involved in fatal occupational injuries in this industry between 2005 and 2009 was a **tractor** (44). Although the leading fatal event in this industry was transportation incidents, only ten occurred on the highway.

Agriculture, Forestry and Fishing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	N/A	7.9	7.0	Data not available	17
1998	9,000	7.6	7.3		22
1999	11,400	7.0	8.7		20
2000	11,500	6.8	8.8		35
2001	11,500	7.0	8.6		29
2002	11,400	6.4	6.9		27
2003	11,200	5.8	6.3	500	24
2004	9,000	6.0	5.1	400	22
2005	8,800	5.7	8.1	600	26
2006	8,800	6.0	5.8	500	12
2007	9,200	5.4	8.4	700	22
2008	9,300	5.3	7.6	600	25
2009	9,300	5.3	2.8	300	23

Indiana Agriculture, Forestry and Fishing Injury and Illness Rate



A Half-Dozen Tractor Safety Tips



Tractors

are some of the most useful farm equipment, but they also have the potential to be some of the most dangerous pieces of equipment if not operated properly. All too often, workers are killed or seriously injured by falling from moving tractors, or by being crushed when tractors tip over sideways or roll over backwards. In Indiana in 2009, there were 14 fatalities in which a tractor was involved.

Following some simple guidelines, in the checklist below, will help ensure that safety features on the tractors are used to their full potential and to help you identify potential safety concerns. For additional safety-related questions or concerns, be sure to contact the equipment or machinery manufacturer and review the operator's manual.

1. Know Your Tractor -

Ensure that each tractor operator is familiar with the safe operating procedures of the tractor he or she will be using. Operators should regularly review the tractor's operator manual.

2. Know Your Terrain - Be familiar with the terrain on which you operate your tractor. Exercise caution on slopes, slow down for all turns and, when possible, stay off of the highway.

3. Do Not Allow Extra Riders - Never allow "extra" riders on the tractor. Obey the rule, "One rider per seat." Extra riders can easily fall from the tractor into the path of trailing equipment and be severely injured or killed.

4. Rollover Protection Structure (ROPS) and Safety Belt - Every tractor, every time. Each tractor should have a rollover protection structure (ROPS)—either a roll bar on an open tractor or a cab with a built-in ROPS. The ROPS was developed to protect the tractor operator from death and serious injury by providing a protective zone for an operator in the event of a tractor overturn. Seatbelts must be worn while operating a tractor. Other than ensuring *you*

and your employees are following correct operating procedures, proper use of a ROPS and wearing your seatbelt are the most important things you can do.

5. Power Take Off (PTO) Shields - The PTO shaft, as well as all universal joints and shafts, on all implements should be properly guarded or shielded. The PTO is said to rotate with the strength of 500 men. Missing or damaged guards should be immediately fixed or replaced.

6. Lighting, Marking and Slow-Moving Vehicle Emblem (SMV) - A Slow-Moving Vehicle Emblem (SMV), visible lighting and markings should be mounted properly in place on the tractor. Emblems should be cleaned or replaced as necessary to ensure that they are clearly visible and undamaged. Lighting should be in place and working. Ensure that the load does not obscure the tractor's SMV or lighting in order to remain visible to fellow workers and motorists.

For more agriculture safety tips and resources, please visit www.in.gov/dol/2729.htm. Also, visit federal OSHA online at www.osha.gov to learn about the agriculture industry's occupational safety and health standards.

It Happened Here: Marshall County, Indiana

Background: In 2009 in Indiana, 14 fatalities occurred in which a tractor was being used.

Fatal Event: On August 28, 2007, in Marshall County, an employee of a dairy farm was driving an all-terrain vehicle (ATV) on a pile of silage stored on the farm. Concurrently, the silage was being transported by four center pivot tractors, and packed into a 20-foot tall, quarter acre long, pile. A coworker operating one of the tractors approached the top of the silage pile, made a left turn and struck the victim on the ATV. The victim died instantly.

Discussion: Operators should be aware of their surroundings when operating an ATV, a tractor or other equipment, especially on uneven terrain. Operators must also know the whereabouts of other workers in the vicinity and be aware of "blind spots" to ensure the safety of workers on foot. Workers on the ground or those acting as "spotters" must also stay alert at all times—knowing where equipment will be operating and avoid working in the same areas, as equipment operators may not be able to readily hear or see them.

Healthcare and Social Assistance

Healthcare

sub-industries are arranged on a continuum beginning with those exclusively providing medical care, continuing with those responsible for providing healthcare and social assistance services and finishing with those providing only social assistance. Industry workers are faced with a wide range of occupational safety and health hazards, including needlestick injuries from administering medications, working long and irregular hours, back injuries from lifting patients, workplace violence and stress.

The Hoosier healthcare and social assistance industry had the second highest number and rate of non-fatal workplace injuries and illnesses in 2009. The Indiana 2009 occupational injury and illness rate for the healthcare industry was 6.5 (per 100 workers), which was 17% above the national healthcare and social assistance industry rate of 5.4. The 2009 non-fatal occupational injury and illness rate experienced a slight increase from the 2008 rate of 6.4.

Approximately 17% of all injuries experienced by healthcare and social assistance workers required the affected worker to spend one or more days away from work. The average number of days spent away from work was four—two days fewer than the Indiana average of six. The overwhelming majority of non-fatal injuries and illnesses occurred among **Caucasian** (66%) **females** (86%). The most

frequent nature of injury suffered by healthcare and social assistance workers was **sprains, strains and tears** (47%). Other frequent injuries in this industry included **fractures** and **soreness and pain**, which were tied at 11% and **bruises and contusions** (8%). A large number of injury sources included **healthcare patients** (33%), **floor and ground surfaces** (25%) and **worker motion or position** (9%)—all of which were consistent with 2008.



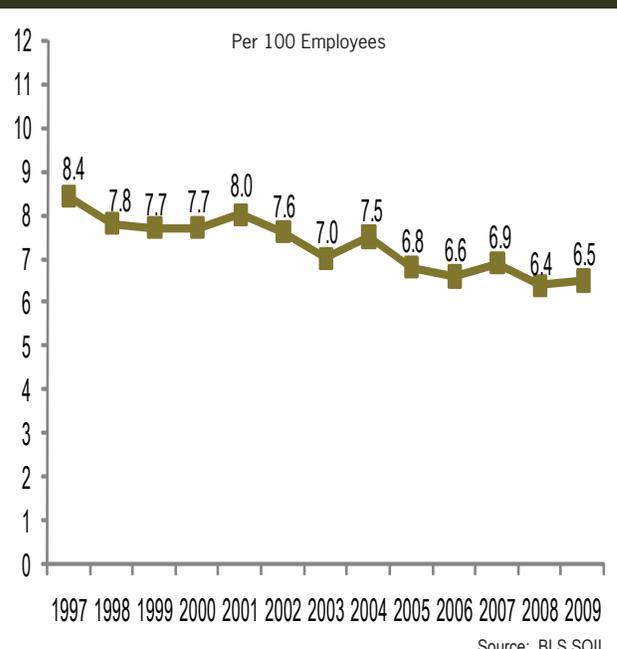
Specific healthcare businesses with high non-fatal worker injury and illness rates in 2009 are consistent with 2008. They include **nursing and residential care facilities** (10.4), **hospitals** (7.2) and **social assistance** (4.6). Predominant events causing injury to workers in this industry include **falls on the same level** (24%), **overexertion in lifting** (22%) and **struck against object** (13%).

Although somewhat rare, occupational-related fatalities do occur in the healthcare and social assistance industry. Between 2005 and 2009, there were 16 total fatal worker injuries in this industry, with six fatalities occurring in 2009 alone. Of the 16 worker deaths during this time period, five were **falls** and four were **assaults and violent acts**.

Healthcare Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	224,100	8.0	8.4	18,000	3
1998	296,600	7.4	7.8	16,500	3
1999	307,200	7.1	7.7	16,600	-
2000	313,200	7.1	7.7	17,500	-
2001	313,800	6.9	8.0	18,100	-
2002	328,200	7.0	7.6	17,300	-
2003	329,600	6.5	7.0	16,500	-
2004	303,200	6.2	7.5	18,600	3
2005	308,400	5.9	6.8	16,100	4
2006	316,000	5.8	6.6	16,500	-
2007	316,000	5.8	6.9	17,100	-
2008	332,600	5.4	6.4	16,000	5
2009	341,000	5.4	6.5	16,600	6

Indiana Healthcare Injury and Illness Rate



Mining

Hoosier

coal miners mined more than 12.8 million tons of clean coal in 2009. While coal production is important, it pales in comparison to the first priority of the mining industry—the protection of the coal industry’s most valuable resource, the coal miner. There are approximately 6,400 workers in both the surface and underground mining industry in Indiana.

The 2009 non-fatal work-related injury and illness rate for Indiana’s mining industry was 3.3, which is a one-year reduction of 13% from 2008. Yet, the Hoosier mining industry is still 27% above the national mining industry non-fatal injury and illness rate of 2.4.

More specifically, the coal mining injury and illness rate in 2009 in Indiana was 3.1 per 100 workers. The 2009 rate is consistent with the 2008 rate for Hoosier coal mining.

coal miners mined more than 12.8 million tons of clean coal in 2009. While coal production is important, it pales in comparison to the first priority of the mining industry—the protection of the coal industry’s most valuable resource, the coal miner. There are approximately 6,400 workers in both the surface and underground mining industry in Indiana.

Injured workers in the surface and underground mining industry were most likely to suffer from **sprains, strains and tears** or **cuts and lacerations**, both tied for first (20%), **fractures** (15%) and **bruises and contusions** (10%). In 2009, the average days away from work in this industry was

ten days, four more days than the state’s average of six.

About 95% of injuries suffered by workers in this industry occurred among **males**. The predominant age of an injured worker in the mining industry is **25-34** (35%). The most common injury-causing event in this industry in 2009 was **struck against object** (25%), followed by **struck by object** (15%) and **overexertion** (10%).

National mining sub-industries with high non-fatal occupational injury and illness rates include **silver ore mining** (6.0), **bituminous coal underground mining** (5.9) and **anthracite mining** (5.6).

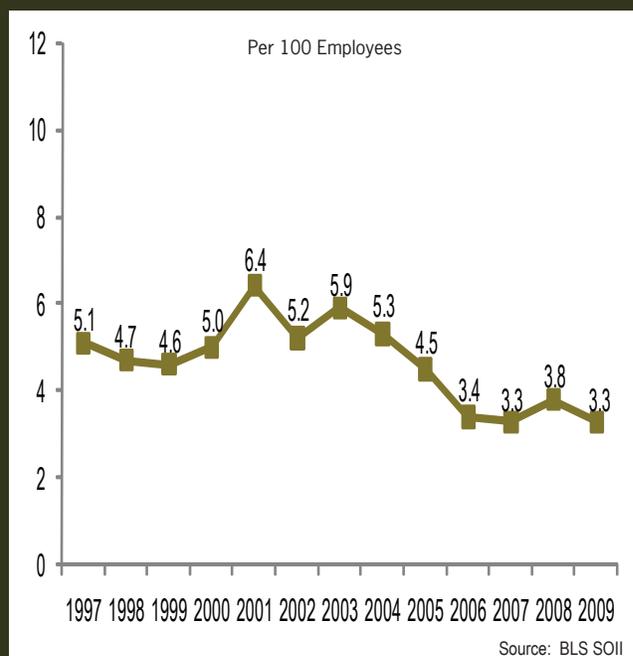


Above: A mine emergency disaster drill is conducted. Mine rescue team members work through a “problem.” (Submitted Photo)

Mining Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	5,800	5.7	5.1	400	-
1998	7,800	4.7	4.7	400	-
1999	7,100	4.1	4.6	300	3
2000	7,100	4.6	5.0	300	-
2001	6,900	3.9	6.4	500	-
2002	6,800	4.0	5.2	400	-
2003	6,700	3.1	5.9	400	6 between 2003 and 2008
2004	6,700	3.6	5.3	400	
2005	6,500	3.5	4.5	300	
2006	6,500	3.5	3.4	200	
2007	6,600	3.1	3.3	200	
2008	6,400	2.9	3.8	300	
2009	6,400	2.4	3.3	200	-

Indiana Mining Injury and Illness Rate



Arts, Entertainment and Recreation

Employing more than 44,000 Indiana workers, the arts, entertainment and recreation industry houses sub-industries such as spectator sports, amusement parks, gambling, live performances/events, exhibits (cultural or educational) and recreation or leisure time activities. The arts, entertainment and recreation sub-industry is actually part of the much bigger leisure and hospitality industry. Workers in this industry are often exposed to occupational health hazards including noise, engine exhaust, cleaning agents and safety risks that include falls, contact with objects and equipment and violence. According to the National Institute for Occupational Safety and Health (NIOSH), a large proportion of workers in this industry are under 35 years of age, and many are part-time or seasonal workers.



In 2009, there were 1,800 work-related injuries and illnesses experienced in the Hoosier arts, entertainment and recreation industry. This remained constant from 2008 to 2009. The corresponding non-fatal injury and illness rate is 7.2 per 100 workers, which is above the national average of

4.9 for this industry. National sub-industries with high non-fatal occupational injury and illness rates include **skiing facilities** (10.5), **spectator sports** (9.7) and **performing arts companies** (8.2). Additionally, injuries in this sub-industry include those recorded by professional sports teams such as the Indianapolis Colts and the Indiana Pacers.

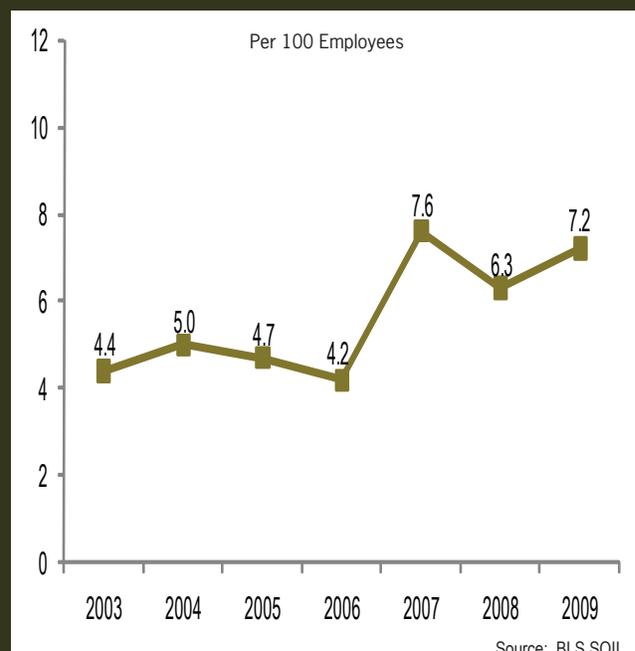
Most often in Indiana, work-related injuries that required the worker to spend days away from work were experienced by **Caucasian** (62%) **males** (71%), **20-24 years of age** (24%). These injured workers were away from work an average of 13 days, which was 11 days more than in 2008. Injuries occurred most often as a result of a **fall on the same level** (26%). The most common nature of injury to workers in the arts, entertainment and recreation industry in 2009 was **sprains, strains and tears** (32%). **Soreness and pain** (18%) was the second most frequent injury, followed by **heat burns** (15%).

Between 2005 and 2009, the arts, entertainment and recreation sub-industry experienced 12 worker deaths. Half of the deaths experienced during this time frame were from 2008 alone, four of which were **transportation-related**.

Arts, Entertainment and Recreation Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	The federal Bureau of Labor Statistics redefined the industry characteristics in 2003. This precludes trending the data before that time.				
1998					
1999					
2000					
2001					
2002					
2003	43,200	5.6	4.4	1,300	16 between 2003 and 2009
2004	44,300	5.6	5.0	1,300	
2005	43,800	5.8	4.7	1,400	
2006	43,300	5.3	4.2	1,200	
2007	43,700	5.3	7.6	2,400	
2008	43,300	5.1	6.3	1,800	
2009	44,800	4.9	7.2	1,800	

Indiana Arts, Entertainment and Recreation Injury and Illness Rate



Joe Black, BLS Survey Coordinator with the Indiana Department of Labor's Quality, Metrics and Statistics Division, researches deaths at the racetrack.

Springtime across America commences the season for warm weather sports of baseball, tennis and golf. This time of year is also synonymous when the loud roar of engines that can be heard at auto racing venues across the nation. From the smallest dirt tracks to large paved oval tracks, road courses and drag strips in the highest profile **NASCAR** series, the **Indy Racing League** (IRL) and **National Hot Rod Association** (NHRA), racing has become one of America's favorite pastimes.

The popularity of **NASCAR** and auto racing in general over the last two decades was brought about by major motion picture films, like *"Days of Thunder."* This helped **NASCAR** grow from a regionally popular sport to one that draws crowds nationwide. Increased popularity has heightened the awareness that with the thrills of racing there is the potential for tragedy. The danger of racing was brought to the forefront of all Americans' minds after the crash in the final lap of the **2001 Daytona 500**, which took the life of one of racing's biggest stars, **Dale Earnhardt, Sr.**

Spawned by an interest in auto racing, and the often tragic accidents occurring annually, fatality data from the

United States Department of Labor's Bureau of Labor Statistics (BLS) reflects how much more deadly auto racing is than any other spectator sport.

The data used involved spectator sports workers in the United States. for the years 2003-2008, compared to fatality numbers from three of the major racing series in the United States for that same period. A 16-page special report written by **Liz Chandler** of the *Charlotte Observer*, titled **"Death at the Track"** dated November 11, 2001 addressed the high number of fatalities in auto racing along with possible measures that could be taken to reduce the number of fatalities. Chandler reported that for the period **1990 through 2001**, there were more than 260 auto racing fatalities in the United States. Among the deaths counted in this study were 204 drivers, 29 spectators, 24 track workers and crew and three journalists. The fatalities occurred in all levels of United States auto racing, from **NASCAR** and the open-wheel series **IRL** and **Champ Car** to dirt-track races.

Below is a comparison of the number of fatalities in all spectator sports vs. the number of fatalities in three of the most prominent series and their sanctioning bodies in the United States: **NASCAR**, the **IRL** (formerly split with Champ Car/CART) and **NHRA**.

U.S. Auto Racing Fatalities 2003 - 2008

NAICS	2003	2004	2005	2006	2007	2008
71121 (Spectator Sports)	25	31	23	20	25	25
711211 (Sports Teams & Clubs)	*	*	*	*	5	*
711212 (Racetracks)	5	5	8	5	6	9
711219 (Other Spectator Sports)	19	22	13	14	13	15
Racing Organization	2003	2004	2005	2006	2007	2008
Open-Wheel Racing (IRL & Champ Car)	1			1		
NASCAR (All Series)		1			1	
Drag Racing (NHRA)		1	1		1	2

*Indicates no data or data that do not meet BLS publication criteria Totals for major categories may include subcategories not shown separately. Source: U.S. Department of Labor, Bureau of Labor Statistics, Census of Fatal Occupational Injuries.

Transportation and Warehousing

The transportation industry includes sectors that move passengers and cargo, scenic and sightseeing transportation, as well as support activities for transportation. The warehousing sector covers industries providing warehousing and storage of goods. In Indiana in 2009, this industry employed more than 107,000 Hoosier workers.

While this industry makes up only about 4% of the Hoosier workforce, it is tied with construction for the industry in Indiana with the second highest number of occupational fatalities in 2009 (17). Between 2005 and 2009, there were a reported 126 worker fatalities in this industry. A series high of 34 fatal workplace injuries was reported in 1999, and again in 2006. The **transportation and material moving occupation** experienced all but one of these fatal occupational injuries. Most often in 2009, the fatally injured worker activity involved **vehicular and transportation operations** (13).

Workers in this industry also suffered more than 5,000 non-fatal workplace injuries and illnesses. **Falls to a lower level** (21%) was the predominant non-fatal injury causing event experienced by workers in this industry, which resulted in days away from work. **Falls on the same level** (13%) and **overexertion in lifting** (11%) were the next two

most frequent injury-causing events experienced by workers in the transportation and warehousing industry in 2009. On average, injured workers in this industry spent **23 days away from work**—the highest of any other Hoosier industry and 11 days more than in 2008.

Sprains and strains (62%) were the most frequent nature of non-fatal injury experienced by workers in this industry. **Bruises and contusions** (9%) and **fractures** (7%) were the next two most common injuries that workers in the transportation and warehousing industry reported. Transportation and warehousing sub-industries with high worker injury and illness rates include **couriers and messengers** (7.0), **air transportation** (6.1) and **warehousing and storage** (5.1).

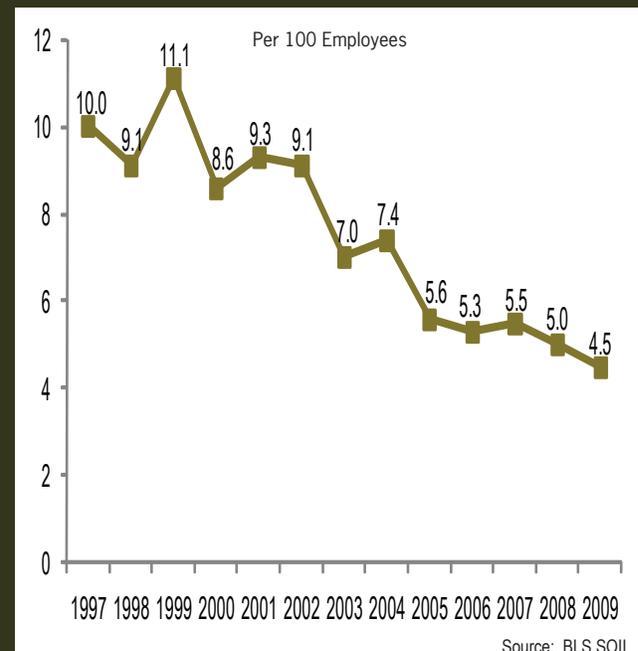
The predominant source of injury experienced by transportation and warehousing industry workers in 2009 was **floors and ground surfaces** (37%). The next most common sources included **worker motion or position** and **vehicles**, which were tied (15%). Injured worker characteristics indicate that **Caucasian** (64%) **males** (81%), **ages 35-44** (32%) suffer the majority of the non-fatal injuries in this industry.



Transportation and Warehousing Injury and Illness Rates and Numbers

Year	Employment	U.S.	IN	Number of Injuries and Illnesses	Number of Fatalities
1997	72,600	10.1	10.0	5,100	29
1998	99,100	9.0	9.1	5,300	23
1999	100,500	9.0	11.1	6,400	34
2000	110,400	8.7	8.6	4,800	26
2001	105,600	8.7	9.3	6,000	23
2002	104,700	7.5	9.1	5,700	27
2003	107,700	7.8	7.0	7,000	29
2004	101,800	7.3	7.4	7,000	29
2005	105,200	7.0	5.6	6,300	28
2006	108,800	6.5	5.3	5,900	34
2007	110,900	6.4	5.5	6,200	31
2008	108,800	5.7	5.0	5,800	16
2009	107,200	5.2	4.5	5,200	17

Indiana Transportation and Warehousing Injury and Illness Rate



INSafe Health Consultant **Tony Kuritz** relays the importance of safely working with Powered Industrial Trucks (PITs).

Partially
ing Powered Industrial Trucks (PITs). Equipment operators must be sure the truck's movement does not create a hazard for the driver or other employees.

While these material movers are a great resource to workers in many industries, they also pose the risk of serious injury, and, in severe cases, have been involved in work-related deaths. Potential hazards involving PITs include **collisions, falling loads, falling off or from a dock** as well as a worker being **crushed or struck by** the unit. Between 2005 and 2009, **62 Hoosier workers were fatally injured** while working with PITs.

Only employees who have been properly trained and licensed should operate a PIT. Training should integrate the practical application of a PIT. Operators should be observed by management to ensure all written safety rules, proce-

or fully blocked visibility increases the chances of accidents involv-



dures, policies and regulations are understood. Training must also be coupled with evaluations of the operator's performance, at minimum every three years. Refresher training is required if the operator is observed operating the truck in an unsafe manner, is involved in an accident or near miss or is assigned a different type of truck.

Prior to their use, PITs must be visually inspected. When PITs are used in multiple shifts throughout the day, operators are required to inspect them before and after each shift. PITs with any condition adversely affecting the vehicle's safety should be taken out of service until repaired.

PITs also pose a safety risk to workers on foot. Separate PIT traffic and other workers when possible. Aisles should be limited to either workers on foot or PIT operators—not both. It is essential to make every effort to inform workers on foot when PITs are in operation nearby through the use of horns, audible back-up alarms and flashing red lights. These are even more critical in work areas with high ambient noise levels.

For more information on the safe operation of PITs, please visit the National Institute for Occupational Safety and Health's website at www.cdc.gov/niosh. Other information is available on OSHA's website, www.osha.gov.

It Happened Here: Tippecanoe County, Indiana

Background: Between 2005 and 2009 in Indiana, 62 Hoosier workers were fatally injured while working with powered industrial trucks (PITs).

Fatal Event: On February 1, 2009, in Tippecanoe County, a warehouse employee was transporting a pallet of materials from one storage area to another, using a powered industrial reach truck. The truck the employee was using requires the operator to stand and operate the controls with both hands and feet. While moving a pallet, the employee's torso became pinned below the shoulders, between a storage rack and the reach truck frame. The employee was later found by co-workers. The employee was unpinned and transported to a nearby hospital, where he died two weeks later from internal injuries.

Discussion: Employers and employees must work together to complete job hazard analyses (JHAs) for each

job, including those permitting the use of PITs. These JHAs must be reviewed and revised often. All PIT operators must be trained in the safe operation of machinery and equipment. Employees responsible for operating PITs must ensure loads are stable and do not exceed the equipment's load capacity. Operators must exercise extreme caution—keeping themselves as far away from the load as possible. All incidents and near-misses should be reported and investigated to prevent reoccurrence. Employers should foster a culture of workplace safety and health—holding all employees accountable for understanding and following all written safety and health rules, procedures, policies and regulations.

If You Always Do What You've Always Done...

Bob Kattau, Director of IOSHA's Industrial Compliance Division, discusses why employers should think outside the box when it comes to employee safety and health.

"If you always do what you've always done, you'll always get what you've always got, if you're lucky." At a training seminar given by a previous employer, the presenter was attempting to convince attendees that doing the same thing repeatedly is not the best way to run a business.

The trainer wanted employees to think of more efficient ways to do their jobs. The trainer's premise was people should challenge themselves to look outside of the "box" they work in to create better ways to accomplish a company's goals. Doing something different is a process that every company needs to implement to keep pace with the times.

Great cooks use basic recipes over and over, but continually adapt them to see if they can improve on them. Even consumer brands like **Coca-Cola** tried to improve a classic product, though without much success. Nonetheless, seeking improvement through change keeps the best companies out in front of their competition, especially when competitors continue to do what they've always done.

"If you always do what you've always done, you'll always get what you've always got, if you're lucky." Working in the occupational safety and health field, I can tell you that the phrase, while designed to increase production, is also applicable to a company's safety programs. It's sad when company representatives who have recently experienced a tragic incident related to the loss of property or an employee's life tell me that they don't know why the incident happened. Many of them proceed to tell me that they've operated equipment or conducted work processes involved in the incident the same way for 20, 30 or 40 years without an incident.

"Always do what you've always done." Having inspected many Hoosier businesses for compliance with occupational safety and health regulations, and spoken with their owners, supervisors and workers, I know serious hazards can and have existed for many years in companies. As long as companies conducted business as usual, nothing changed. I think that's where the last part of the phrase comes into play, **"if you're lucky."**

Company safety programs are more than a hazard communication plan filled out and put in a drawer until IOSHA shows up to conduct a compliance inspection. Hazard communication is a process that must be reviewed regularly. As a safety and health professional in this field for many years, I suggest that safety inspections be done by different people, from time to time. This is especially important as it is value-added to have a new set of eyes examine an area, much like what happens when an IOSHA Compliance Safety and Health Officer visits a company.

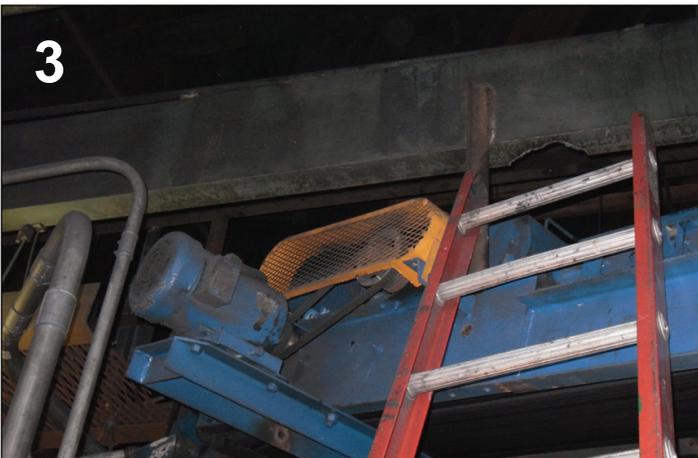
Do not complete your internal safety and health inspections the way you have always done them and hope for the same results. Luck will eventually run out. Do not wait to thoroughly review your workplace to determine where injury possibilities exit.

Assistance for Indiana Employers and Employees

Employers should consider taking advantage of free, on-site occupational safety and health consultation offered by the Indiana Department of Labor's OSHA Consultation Program, INSafe. To learn more about the service provided by well-trained worker safety and health experts, please visit www.in.gov/dol/insafe.



Can you identify the hazard(s) in the pictures below? Photos used on this page are of real hazards found in Indiana workplaces taken by IOSHA & INSafe employees.



Picture 1: Trench. The trench is not properly protected to prevent a collapse. 1926.651(c)(2), 1926.651(k)(1), 1926.641(j)(2) and 1926.652(a)(1). **Picture 2:** Man-made lift platform. This man-made lift platform was neither approved by the manufacturer, nor is there a mechanism in place to keep the basket from sliding off the forks when tilted forward. 1910.178(a)(4). **Picture 3:** Belts and pulleys on a conveyor. This is an ingoing nip point—an employee can get his or her fingers caught. 1910.212(a)(1). **Picture 4:** The employee is not wearing fall protection. 1926.451(a)(b), 1926.451, 1926.451(e)(1), 1926.451(f)(3), 1926.451(g)(1) and 1926.454(a). **Picture 5:** Ladder opening. There is no chain, swinging gate, or other protection to prevent an employee from walking directly into the ladder opening, 29 CFR 1910.23(a)(2). - 1910.212(a)(1). **Picture 6:** Eyewash. This eyewash does not have enough water pressure to generate the spray pattern specified by ANSI z358.1 1910.151(c).

IN Review 2010 Contributors

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Mr. Boucher is the Director of Child Labor, Training and Education. His responsibilities include the management of the daily operations of the Indiana Bureau of Child Labor. Other responsibilities include the design and delivery of training and educational materials pertaining to Indiana's Child Labor laws. Mr. Boucher has a Bachelor of Arts Degree in English and Criminal Justice and a Minor in French from Indiana University. [SEE PAGE 7](#)

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Mr. Black is the coordinator for the two cooperative programs with the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Prior to joining the Quality, Metrics and Statistics Division in 1998, Mr. Black had previously worked in the division from 1983-1991 and moved to Accounting from 1991 until his return to the division in 1998. Mr. Black has a Bachelor of Arts Degree in Radio/Television with a Marketing Minor from Indiana University. [SEE PAGE 18 and 32](#)

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Mr. Carter is the Deputy Commissioner of Labor for the Indiana Occupational Safety and Health Administration. His responsibilities include the day-to-day operation of Indiana's OSHA program. Mr. Carter previously worked for United Technologies in various environmental, health and safety capacities. Mr. Carter graduated from Purdue University and studied with the Carnegie Mellon Graduate Engineering Program in the green engineering arena while leading a United Technologies Corporate green design team. [SEE PAGE 10](#)

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Ms. Ellison is the Director of INSafe and Marketing for the Indiana Department of Labor's OSHA Consultation Program, INSafe. Her responsibilities include marketing INSafe and managing the Indiana Safety and Health Achievement Recognition Program (INSHARP). Ms. Ellison is a graduate of Indiana University with a double Bachelor of Science Degree in Marketing and Management. [Contributing Author, Editing and Layout and Design](#)

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Mrs. Groom is a Compliance Safety and Health Officer for IOSHA. Her responsibilities include conducting health and safety inspections at general industry facilities throughout the state. Prior to joining IOSHA, Mrs. Groom worked for the Indiana Department of Environmental Management (IDEM). Mrs. Groom has a Bachelor of Science Degree in Environmental Science from Indiana University. [SEE PAGE 13](#)

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Mr. Kattau graduated from Marion College in Indianapolis with a Bachelor of Science Degree in Biology. Mr. Kattau worked at an Indianapolis chemical company for 33 years in various areas and capacities. Mr. Kattau has been with IOSHA since 2001 as a Compliance Health and Safety Officer, Supervisor and currently serves as Director. [SEE PAGE 35](#)

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Mr. King currently serves as a Health Consultant for the Indiana Department of Labor's OSHA Consultation Program, INSafe. Prior to working for INSafe, Mr. King worked for the Indiana Occupational Safety and Health Administra-

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TECHNICAL EDITING

Technical editing services were provided by Mario Moroné.

IN Review is an annual publication of the Indiana Department of Labor's Quality, Metrics and Statistics Division. For this report, the Indiana Department of Labor used the Census of Fatal Occupational Injuries (CFOI) and Survey of Occupational Injuries and Illnesses (SOII) research files provided by the Bureau of Labor Statistics (BLS) for calendar year 2009. BLS 2010 CFOI data will be released in August 2011. BLS 2010 SOII data will be released in October 2011. Because of confidentiality restrictions, individual case information from the CFOI data cannot be reported. Information for the cases described in this report was obtained solely from the Indiana Department of Labor field investigations.

Indiana Non-fatal Injury and Illness Rates

Incidence rates¹ of non-fatal occupational injuries and illnesses by sector and selected case types, 2007 - 2009

Industry Sector	Total Recordable Cases			Cases with Days Away from Work, Job Transfer or Restriction						Other Recordable Cases					
	Total			Cases with Days Away from Work ⁶			Cases with Job Transfer or Restriction			Total					
	2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009			
All Industries including State and Local Government.....	5.2	4.9	4.3	2.4	2.3	2.0	1.1	1.1	1.0	1.3	1.2	1.0	2.7	2.6	2.3
Private Industry ³	5.1	4.7	4.2	2.5	2.3	2.0	1.1	1.1	0.9	1.3	1.2	1.1	2.6	2.4	2.2
Goods Producing ³	6.4	5.6	4.7	3.1	2.7	2.2	1.3	1.2	1.0	1.8	1.6	1.3	3.4	2.8	2.4
Natural Resources and Mining ^{3,4}	6.1	5.8	3.0	3.5	3.2	1.9	2.2	1.6	1.3	1.3	1.6	0.6	2.5	2.6	1.1
Agriculture, Forestry, Fishing and Hunting ³	8.4	7.6	2.8	4.8	3.9	1.5	2.7	1.4	0.7	2.1	2.5	0.8	3.6	3.7	1.3
Mining.....	3.3	3.8	3.3	2.1	2.4	2.4	1.7	1.9	2.0	0.4	0.6	0.4	1.3	1.3	0.9
Construction.....	5.7	4.6	4.6	2.5	2.6	2.1	1.9	1.8	1.5	0.6	0.8	0.7	3.2	2.1	2.5
Manufacturing.....	6.6	5.8	4.7	3.2	2.8	2.3	1.1	1.0	0.9	2.0	1.8	1.4	3.4	3.0	2.4
Service Providing.....	4.4	4.3	3.9	2.2	2.1	1.9	1.0	1.0	0.9	1.1	1.1	1.0	2.3	2.2	2.1
Trade, Transportation and Utilities ⁵	5.1	4.8	4.1	3.0	2.7	2.3	1.4	1.3	1.1	1.6	1.3	1.2	2.1	2.1	1.8
Wholesale Trade.....	4.7	4.6	3.5	2.8	2.4	2.0	1.5	1.2	1.0	1.3	1.2	1.0	1.9	2.2	1.5
Retail Trade.....	5.1	4.9	4.3	2.7	2.4	2.1	1.1	1.0	1.0	1.7	1.4	1.1	2.4	2.5	2.1
Transportation and Warehousing.....	5.5	5.0	4.5	3.8	3.6	3.2	1.9	2.2	1.7	2.0	1.4	1.5	1.7	1.4	1.3
Utilities.....	4.4	3.3	2.6	2.3	1.8	1.5	0.9	0.7	0.8	1.4	1.0	0.7	2.2	1.5	1.1
Information.....	2.4	3.3	2.9	1.2	1.5	1.2	0.9	0.8	0.5	0.3	0.8	0.7	1.2	1.8	1.7
Financial Activities.....	1.5	1.5	1.9	0.6	0.7	0.6	0.5	0.5	0.3	0.2	--	0.2	0.9	0.8	1.3
Professional and Business Services.....	2.5	2.4	1.6	1.2	1.2	0.8	0.7	0.7	0.5	0.5	0.5	0.3	1.3	1.2	0.8
Educational and Health Services.....	6.6	6.0	6.1	2.7	2.7	2.6	1.1	1.1	1.0	1.6	1.6	1.6	3.9	3.2	3.4
Educational Services.....	4.2	2.4	2.8	1.3	0.9	1.1	0.6	0.6	0.6	0.7	0.3	0.4	3.0	1.5	1.7
Healthcare and Social Assistance.....	6.9	6.4	6.5	2.9	2.9	2.8	1.2	1.2	1.1	1.7	1.8	1.8	4.0	3.5	3.6
Leisure and Hospitality.....	4.7	4.5	4.2	1.5	1.5	1.5	0.6	0.7	0.8	0.9	0.7	0.7	3.2	3.0	2.7
Other Services Except Public Administration.....	3.4	4.6	3.3	2.2	2.1	1.8	1.9	1.3	1.5	0.3	0.8	0.3	1.2	2.5	1.5
State and Local Government.....	5.7	5.7	5.0	2.3	2.1	2.0	1.2	1.2	1.2	1.1	0.9	0.8	3.4	3.7	3.1
State Government.....	3.7	3.6	3.0	1.6	1.6	1.2	1.0	1.1	0.9	0.6	0.5	0.4	2.0	2.0	1.7
Local Government.....	6.5	6.5	5.9	2.5	2.2	2.3	1.2	1.2	1.2	1.4	1.3	1.0	4.0	4.2	3.6

¹Incidence rates represent the number of injuries and illnesses per 100 full-time workers and were calculated as: (NEH) X 200,000

where

N = number of injuries and illnesses

EH = total hours worked by all employees during the calendar year

200,000 = base for 100 equivalent full-time workers

(working 40 hours per week, 50 weeks per year)

²North American Industry Classification System, 2007 Edition.

³Excludes farms with fewer than 11 employees.

⁴Data for mining (Sector 21 in the North American Industry Classification System 2007 Edition) includes establishments not governed by the Mine Safety and Health Administration (MSHA) rule and reporting, such as those in oil and gas extraction and related support activities. Data for mining operators in coal, metal and non-metal mining are provided to the Bureau of Labor Statistics (BLS) by MSHA, United States Department of Labor. Independent mining contractors

are excluded from the coal, metal, and non-metal mining industries. These data do not reflect the changes the Occupational Safety and Health Administration (OSHA) made to its recordkeeping requirements effective January 1, 2002, therefore estimates for these industries are not comparable to estimates in other industries.

⁵Data for employers in railroad transportation are provided to the BLS by the Federal Railroad Administration, United States Department of Transportation.

⁶Days away from work cases include those that result in days away from work with or without restricted work activity.

⁷Data too small to be displayed.

NOTE: Because of rounding, components may not add to totals. Dash indicates data do not meet publication guidelines.

SOURCE: Bureau of Labor Statistics, United States Department of Labor, Survey of Occupational Injuries and Illnesses (SOII), in cooperation with participation State agencies.



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