



ASK THE LIBRARY ARCHIVE

Safety at Work

library@nsc.org or 630-775-2199

How can I convince my bosses that spending money on safety improvements is a good idea?

To help safety professionals secure the resources they need, the NSC Journey to Safety Excellence campaign has created two documents on making the [business case for investing in safety](#). Contact the Library at library@nsc.org or 630-775-2199 for additional information on this topic.

How can I protect outdoor workers in the summer months ahead?

The [CDC/NIOSH](#) has information on hazards to outdoor workers that include everything from physical hazards (heat stress, noise, UV radiation) to biological hazards (insects, poisonous plants, tick-borne diseases) to pesticides or other chemical exposures. For additional information, please contact the Library at 630-775-2199 or library@nsc.org

I'm putting together a drug and alcohol policy for my workplace. What do I need to be aware of and where can I learn more?

The [Canadian Centre for Occupational Health & Safety](#) has useful information and you will also find information on the [National Safety Council](#) site. The [National Institute on Drug Abuse](#) provides the health effects of specific drugs and offers workplace resources. For articles on this topic, please contact the Library at 630-775-2199 or library@nsc.org

What is a "competent person?" Where is one required and how do we choose one?

OSHA's definition is: *One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them" [29 CFR 1926.32(f)]. By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, and has the authority to correct them.*

OSHA uses the term in many of its standards such as for fall protection, trenching/excavations, construction projects, etc. Some standards add additional specific requirements which must be met by a "competent person."

One article published in our [Safety + Health](#) magazine provides some guidance. For additional information, please contact the Library at 630-775-2199 or library@nsc.org and provide your fax number.

OSHA's revised hazard communication standard will have many changes regarding product labeling and I know all workers that come into contact with chemicals will have to be trained, but what is the timeline and what changes can we expect?

The Globally Harmonized System of Classification and Labeling of Chemicals, commonly known as GHS, is currently being rolled out with the first phase of the hazard communication requirement going into effect on December 1, 2013. A recent [Safety + Health](#) magazine article provides an excellent description of what you need to know to plan training and meet the

requirements. OSHA also provides a [Fact Sheet](#) and a [side-by-side comparison](#) of the old and new regulations. If you need additional information please contact the Library at 630-775-2199 or library@nsc.org

We work in an office environment, how dangerous can it be?

Despite common beliefs that the office provides a safe environment in which to work, many hazards exist which cause thousands of injuries and health problems each year among office workers. Since one-third of the work force is in offices, even low rates of work-related injuries and illnesses can have a great impact on employee safety and health. [The Centers for Disease Control & Prevention](#) has tools available on the office environment and worker safety and health. The [Department of Commerce](#) lists the most prevalent causes of injuries, and Monroe County in Florida has a handy [checklist](#) available. For additional information, please contact the Library at library@nsc.org or 630-775-2199 and provide your fax number.

What is Prevention Through Design (PtD)?

The goal of PtD, formerly known as Safety Through Design, is to prevent and control occupational injuries, illnesses and fatalities by “designing out” hazards and risks early in the process. Using this model, hazard analysis and risk assessment strategies are integrated early in the design and engineering stages to eliminate or reduce hazards and risks in the workplace. [NIOSH](#) has partnered with the NSC and other organizations to promote this core element of injury prevention. For additional information, please contact the Library at 630-775-2199 or send an email with your fax number to library@nsc.org

What can I do to help prevent back injuries and maintain a healthy back?

The [University of Virginia](#) provides a good overview and guidelines on back injury prevention including risk factors, materials handling and proper lifting techniques. For on-the-job, the [Canadian Centre for Occupational Health & Safety](#) focuses on proper materials handling in the workplace to help prevent back injuries, and the [National Library of Medicine](#) offers an interactive tutorial that provides useful tips. For additional information, please contact the NSC Library at 630-775-2199 or library@nsc.org

What is JSA/JHA and how can we use it in our workplace?

Job Safety Analysis (JSA) or Job Hazard Analysis (JHA) is a proven process for controlling operating hazards and costs. The process breaks job tasks down to step-by-step procedures by identifying potential hazards and how to avoid them. Every JSA/JHA is unique to the task. There is a chapter in the *Accident Prevention Manual: Administration & Programs* volume on identifying hazards; the Council offers a one-day training course on the topic, and [OSHA](#) has additional guidelines. For further information, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

What is the difference between leading and lagging indicators? How can I use them to evaluate my safety program?

Lagging indicators, such as incidence rates, measure what has already happened. Leading indicators attempt to capture what is happening now to prevent injuries or incidents in the future. For a selection of articles further defining leading/lagging indicators and how to use them, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

What is Lean Manufacturing and how does it relate to environmental health and safety?

At its simplest, Lean Manufacturing seeks to provide the greatest value by eliminating waste. Business strategies such as Six Sigma, Kaizen and 5S reflect the Lean philosophy. The [Environmental Protection Agency](#) provides basic information, toolkits, case histories and best practices regarding Lean. An article from [Industrial Safety & Hygiene News](#) shows how to apply Lean to your safety program. For additional articles on this topic, please provide the Library with your fax number by calling 630-775-2199 or sending an email to library@nsc.org

Are there some guidelines on when to replace personal protective equipment for our workers?

[OSHA](#) always recommends following the manufacturers guidelines on replacing equipment, but they also provide guidance on the routine inspection of protective equipment for eye & face, head, feet, hand & arm, body and hearing protection, and offer general guidelines on when equipment should be replaced. For additional information on specific types of equipment and when they should be replaced, please contact the Library with your fax number at 630-775-2199 or send a request to library@nsc.org

How can I estimate the ratio of direct to indirect costs for an incident in the workplace?

You may have seen incident costs represented as an iceberg with the smaller, direct costs above the water line and the larger, indirect costs below. Because of the many variables unique to each situation, the ratio can be as high as 20:1 or as low as 1:1.

[OSHA](#) has an e-Tool which includes information on what the cost components can be and a worksheet to use in your particular situation. For additional articles on this topic, please contact the Library with your fax number by emailing us at library@nsc.org or by calling 630-775-2199.

I'm confused about what needs to be posted, reported and/or recorded at my place of work.

OSHA has a number of tools to help. One is an [injury and illness recordkeeping tool](#) to help determine when an OSHA log must be filled out. The same site explains recordkeeping requirements, and what to do in case of a catastrophe. Another is an interactive, drill-down tool, [FirstStep Recordkeeping, Reporting and Notices Advisor](#) which offers guidance on major DOL laws that may apply to your organization and which posters and other notices that need to be put up. For additional information, please contact the Library at library@nsc.org or by calling 630-775-2199.

What is a recommended safe speed for fork lift trucks in the plant? What I've seen about operating a fork lift states: "Observe posted speed limits". How does one determine the speed limit?

OSHA has [a letter of interpretation](#) on what is considered a safe speed for forklifts. They do not set a specific limit, because there are too many variables from location to location. Instead, they refer to ANSI B56.1, the [standard](#)* for low lift and high lift trucks. The standard has a formula to calculate stopping distances. It also makes reference to trucks not traveling faster than normal walking speed, which they estimate as 3.5 mph.

*Click the box by ANSI/ITSDF B56.1 and then click the download button.

According to the Centers for Disease Control, about 37,000 people in the United States go to the emergency room every year with injuries from nail guns. How can we prevent injuries when using these tools?

Whether you are a do-it-yourselfer or using a nail gun at work, there are precautions to keep in mind. [The Safety Movement Organization](#) has general tips on the safe use of nail guns. For workers, [OSHA](#) offers pneumatic nail gun safety tips. For selected articles on this topic, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

https://www.osha.gov/Publications/NailgunFinal_508_02_optimized.pdf

What is the Global Harmonized System (GHS), how is it to be applied, and what chemicals are covered?

OSHA offers *A Guide to The Globally [Harmonized System of Classification and Labelling of Chemicals \(GHS\)](#)* which covers all aspects of compliance, MSDS, physical hazards, environmental hazards, hazard communication and much more. In addition, for copies of selected documents on this topic, contact the Library library@nsc.org or 630-775-2199 with your fax number or mailing address.

Can we have some safety tips for our business travelers?

The [U.S. Department of State](#) maintains a list of countries where travel should be avoided or carefully considered. A compilation of safety information for travelers, both foreign and domestic, can be viewed [here](#).

We plan to implement a new shift schedule and want to help our workers adjust to the changes.

Strategies for coping with shift work are offered by the [National Sleep Foundation](#) and the [National Institute for Occupational Health & Safety](#) (NIOSH). For additional articles on this topic, please contact the Library at library@nsc.org or by calling 630-775-2199 and providing us with your fax number or mailing address.

What role can safety play in our company's sustainable development plan?

The safety professional's knowledge of environmental issues can help guide the company as it goes "green." For copies of selected articles on this topic please contact the Library with your fax number at 630-775-2199 or library@nsc.org

I have searched the OSHA regulations (29 CFR 1910) for the General Duty Clause, but I can't find it. Where is it?

The General Duty Clause, also known as Section 5(a)(1), requires an employer to furnish a workplace which is "free from recognized hazards that are causing death or serious physical harm to his employees. It appears in the [Occupational Safety & Health Act of 1970](#). For articles discussing the General Duty Clause in more detail, please contact the Library with your fax number at library@nsc.org or 630-775-2199.

We are reviewing our hearing conservation program. What should be included? What can you tell me about the proposed label changes?

For copies of selected articles, including a hearing conservation program checklist, please contact the Library with your fax number at library@nsc.org or 630-775-2199.

The [National Institute for Occupational Safety & Health](#) has general information on noise and hearing loss prevention.

What is the "Heinrich's accident pyramid" referred to in [OSHA's Safety Management eTool](#)?

In 1931, H.W. Heinrich estimated that for every major workplace injury, there were about 29 minor injury accidents and 300 incidents that produce no injuries. This relationship, illustrated as a pyramid or triangle, demonstrates the importance of addressing near misses to prevent more serious accidents. Different versions of the pyramid have been created over the years. For more information on Heinrich and the validity of the safety pyramid, contact the Library with your fax number at library@nsc.org or 630-775-2199.

How can a near miss program help reduce accidents and injuries?

Tracking and investigating near miss (or near hit) incidents can identify situations with the potential for injuries before they occur. A near miss reporting program ([sample](#)) can get workers more involved in the safety program and help management demonstrate commitment. For selected articles on this topic, please contact the Library at library@nsc.org with your fax number.

What are the pros and cons of a safety incentive program?

For copies of a few selected articles on safety incentive programs – what works and what doesn't, please contact the Library with your fax number. You can reach us at library@nsc.org or call us at 630-775-2199.

As summer approaches teens will be looking for jobs. What should employers (and parents) know about safety regulations and injury prevention for young workers?

For many teens a summer job is their first exposure to the working world. Both [OSHA](#) and [NIOSH](#) have information on teen workers. To receive copies of selected articles on this topic, please contact the Library with your fax number at library@nsc.org or 630-775-2199.

I have heard online access to the NFPA Codes is now free. Is this true?

The National Fire Protection Association (NFPA) now has a *read-only* version of their codes available at no charge. Start at [NFPA Online Access](#) read the introduction and scroll down to **To review NFPA's codes and standards online**. Click on **#1. Visit NFPA's Document Information page**. You will find a list of all NFPA codes. Select the code of interest and follow the instructions to create a user profile which will then give you read-only access.

How can I help my workers avoid heat-related illnesses this summer?

The National Institute for Occupational Safety & Health offers a variety of materials for workers and employers to help cope with climbing temperatures. The [NIOSH](#) website also includes a heat stress calculator. For additional articles on heat stress in the workplace, please contact the Library at library@nsc.org or by calling 630-775-2199 with your fax number or mailing address.

What can my workers do to avoid being bitten by dogs?

Workers in a variety of occupations may come in contact with unfamiliar dogs. National Dog Bite Prevention Week is in May each year. The U.S. [Postal Service](#) offers a kit that addresses what workers and dog owners can do to prevent dog bites. Additional information is available from the U.S. [Humane Society](#).

My workers are a variety of shapes and sizes. What should I consider when selecting Personal Protective Equipment?

When it comes to PPE, one size doesn't necessarily fit all. PPE is available in different sizes and styles to protect workers whether they are large or small, male or female. The [OSHA](#) regulation states that if your workers have the right sized PPE, they are more likely to wear it. For additional articles on what to consider regarding PPE, please contact the Library at library@nsc.org or by calling 630-775-2199 with your fax number or mailing address.

Training requirements are scattered throughout the OSHA regulations. Where can I find requirements specific to my industry?

The length and complexity of OSHA standards may make it difficult to find all the references to training. [OSHA](#) has provided a document: *Training Requirements in OSHA Standards and Training Guidelines, Revised 1998* to help make it easier. [OSHA](#) also has a Training and Reference Materials Library that includes PowerPoint presentations and additional information. For information on specific training issues, please contact the Library at 630-775-2199 or library@nsc.org

We provide our workers with personal protective equipment, but we have trouble getting some of them to use it. What can we do?

Workers may resist PPE because they feel it is uncomfortable, inconvenient or unnecessary. Steps you can take to improve compliance include training, offering incentives, and seeking workers' participation in the selection process. If these steps fail, enforcement of the rules may be necessary. For some articles on motivating workers to use PPE, please contact the Library with your fax number at library@nsc.org or 630-775-2199.

What is the accident cost iceberg?

The iceberg is used as a metaphor to represent how the direct (or insured) costs of a work accident, such as medical expenses and insurance premiums, are only the tip of the iceberg. Below the surface are additional indirect (or uninsured costs), such as time lost investigating the accident, equipment repair costs or extra overtime costs. These costs can add up to much more than the direct costs. For articles on insured and uninsured costs and a worksheet that will help estimate how much incidents really cost your organization, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

The federal regulation on Powered Industrial Trucks (OSHA 1910.178) makes reference to ANSI B 56.1. Where can I get a current copy of B56.1?

The title of the B56.1 standard is *Safety Standard for Low Lift and High Lift Trucks*. Copies are free to download from the [Industrial Truck Standards Development Foundation](#). The ITSDF was formed to assume responsibility for certain standards developed by the American Society of Mechanical Engineers.

I have heard a story about a welder who had his contact lens fused to his eye. Is this true? Is it safe for welders to wear contact lenses?

Different versions of the story about the welder have been around for at least 30 years. The story has never been substantiated. [OSHA](#) has written a letter saying that welding with contacts is usually acceptable. The [American Welding Society](#) offers a fact sheet with guidelines for welders who use contact lenses. For more information on this topic, please contact the Library Reference Desk at library@nsc.org or 630-775-2199 with your fax number.

Do workplace exercise and stretching programs help prevent injuries?

Some studies have shown that these programs can be beneficial. They report improvements in worker flexibility and savings in workers compensation costs. Others report that organizations have found no difference when comparing before and after implementing these types of exercise programs. For articles discussing research on this topic, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

How do I select the appropriate gloves for my employees?

There is a glove for every hazard -- cuts, burns, chemicals, etc. With so many to choose from it can be hard to identify the right glove for the task. There are a number of quality articles that provide guidelines and suggestions on selecting gloves. For copies of these articles, please contact the Library at 630-775-2199 or library@nsc.org with your fax number or mailing address.

How can I make my safety meetings more effective?

Good safety meetings don't just happen. They need preparation and participation. The Library collection includes articles with ideas for keeping your meetings fresh and productive. For copies of these articles, please contact the Library at 630-775-2199 or library@nsc.org with your fax number or mailing address.

How do I select appropriate respirators for my employees?

There are a number of quality articles for suggestions on respirator selection, but there are also [National Institute for Occupational Safety & Health](#) guidance tools that help to determine the proper respirator for various applications. For more information, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

What is the importance of a Safety Committee?

A safety committee aids and advises both management and employees on matters of safety and health pertaining to plant or company operations. It performs essential monitoring, educational, investigative, and evaluative tasks. For articles on how to implement or make your Safety Committee more effective, please contact the Library at 630-775-2196 or library@nsc.org with your fax number or mailing address.

Will computer-based training satisfy OSHA requirements?

In a letter of interpretation, [OSHA](#) states that while computer-based training can be a valuable part of a training program, it is generally not enough to meet requirements on its own. Current trends advocate a "blended" approach combining online training with more traditional classroom methods. For more information, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

Should I permit my employees to wear contact lenses on the job?

Concerns regarding chemical exposures and other hazards to the eye have caused safety professionals to question whether contact lenses are appropriate for use in the industrial environment. The [National Institute for Occupational Safety & Health](#) has recently altered its

position, now recommending workers be permitted to wear contacts when working with hazardous chemicals. Also, the [American College of Occupational and Environmental Medicine](#) offers guidelines regarding other types of hazards here. Both stress that contact lenses in themselves do not offer protection to the eye, and that eye hazard evaluations of the workplace should be performed.

What is JSA?

JSA is Job Safety Analysis, also known as Job Hazard Analysis. JSA breaks job tasks down into step-by-step procedures for workers to follow. It identifies potential hazards and how to avoid them. Every JSA is unique. Worker participation in the JSA process, such as testing the steps, can help develop a more positive attitude toward safety. [OSHA](#) has information on JHA. For further information, please contact the Library at library@nsc.org or 630-775-2199 with a fax number.

What is the maximum weight a worker can safely lift?

Unfortunately, there's no easy magic number. There are many factors involved, such as the height and weight of the person, the dimensions and weight of the object, and the frequency or distance the object is lifted and/or carried. For an article comparing the use of biomechanical models, the Snook tables, the revised NIOSH lifting equation and the ACGIH Threshold Limit Values, please contact the Library with your fax number at library@nsc.org

What is nanotechnology and what are the safety and health implications?

Nanotechnology involves the manipulation of matter at nanometer length scales to produce new materials, structures and devices. A nanometer is one-billionth of a meter – for comparison, a grain of sand is about a million nanometers. Nanomaterials are already in use in electronic, cosmetic and pharmaceutical applications. The small scale of these particles raises concerns about inhalation exposures, ingestion or skin contact. For more information, please see the [National Institute for Occupational Safety & Health](#) website on nanotechnology.

What happened to my SIC code? How do I find my new NAICS code?

Safety professionals often want to compare their establishment's occupational injury and illness rates with national averages for their industry. For years, the Standard Industry Classification, or SIC code, has been used to identify industries. Recently, the U.S., Canada and Mexico have adopted the new North American Industry Classification System, or NAICS. The NAICS reflects changes in our economy and technology. The U.S. [Census Bureau](#) offers conversion tables to translate SIC codes to NAICS codes. The [NAICS Association](#) offers keyword searching to locate new codes.

What is Six Sigma, and how does it apply to safety?

The goal of Six Sigma is to create nearly error –free performance by implementing principles and techniques designed to generate continuous improvement. Using some of the benchmarking techniques of Six Sigma can help identify safety areas with the greatest needs so efforts can be focused on them. For more information, please contact the Library at library@nsc.org or 630-775-2199 with your fax number.

Our employees would like to be able to wear personal headsets (MP3 players, etc.) on the warehouse floor. What do we need to know about the pros and cons before implementing a company policy?

While there are few documented physical injuries due to the use of personal radios/headsets, there is the *potential* for accidents or injuries. An OSHA [letter of interpretation](#) addresses the issue. For articles related to this issue, please forward your fax number or mailing address to library@nsc.org

What is safety certification?

Surveys show that not all people responsible for safety in a company have actual safety certification. However, certification can provide peer recognition, may translate into higher pay,

and aid in job promotion. Certification generally requires that applicants have both education and experience, resulting in such titles as Certified Safety Professional (CSP) or Certified Industrial Hygienist (CIH). For a list of some of the most common safety-related certifications and where to obtain them, contact the Library at 630-775-2199 or library@nsc.org

How can I be sure that my workers will be able to evacuate safely if there's an emergency?

When emergencies happen, a good evacuation plan can be the difference between life and death. When creating a plan, you must consider the type of emergencies you are most likely to encounter, (fire, chemical spill, tornado, etc.) and determine the most appropriate response. [OSHA](#) and [FEMA](#) have a number of tools for evacuation planning. For further information on emergency planning and evacuation, please contact the Library with your fax number at library@nsc.org or 630-775-2199.

What is the story behind the NSC's Green Cross emblem?

The Green Cross for Safety was created in 1946 as part of a community fundraising campaign. The Green Cross was quickly accepted by the public as a symbol for safety, and became the official symbol of the National Safety Council in 1947. But the Green Cross wasn't the first emblem of the NSC. In 1913 the NSC created the Universal Safety symbol. A document dated 1929 describes it as "a white cross against a green circular field, encircled by the words 'Universal Safety.' The cross is a cross of mercy. The color white represents "freedom from blemish or stain, nobility of aspirations and sincerity of purpose." Green signifies youth, strength and life.

Does working overtime or extended shifts result in more accidents?

This safety issue is still under debate. Some studies have shown that employees working overtime/extended shifts may experience more accidents or poor health. Other studies have found little or no effect. The [National Institute for Occupational Safety & Health](#) has a review of the literature entitled *Overtime and Extended Work Shifts* available at. For more information on safety and hours of work, contact the Reference Desk at library@nsc.org or 630-775-2199.

My management is focused on productivity and the bottom line. How can I convince them that safety pays?

You might want to try talking to them in their own language – dollars and cents. It isn't what you earn, but what you save that counts. Some factors to consider include accident costs (direct and indirect), OSHA fines and penalties, and lost production. For a few articles that explain how you can make the case that safety impacts the bottom line, please contact the Library at library@nsc.org or 630-775-2199.

We have 1,000 employees at our plant. How many safety people we should have?

It depends. Various sources suggest ratios of safety specialists to employees ranging from 1 to 1,000, or 1 to 2,000. Sometimes the safety specialist may have help through an assistant or a safety committee. These ratios may be used as rules of thumb, but the correct answer depends on the nature of operations, workplace layout, and numerous other factors. Sources for this information are *Safety Management* by Grimaldi and Simonds (1989), and *Safety and Health Management Planning* by Ferry (1990). For more information on organizing and staffing the safety function, contact the Reference Desk at library@nsc.org or 630-775-2199.

How do I write a company safety manual?

Whether you're starting from scratch, or updating a few sections of an existing manual, this can be a difficult and time-consuming task. The National Safety Council created a data sheet entitled *Writing, Publishing, and Administating Employee Safety Regulations*. To learn more about this data sheet, and other useful documents on writing a safety manual, contact the Library Reference Desk at library@nsc.org or 630-775-2199.