



September 2010

# Army Industrial Hygiene News and Regulatory Summary

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## Table of Contents

	Page #
HAZARDOUS SUBSTANCES .....	1
PERSONAL MEDICINE .....	4
PREVENTIVE MEDICINE .....	4
NANOTECHNOLOGY .....	6
DEPLOYMENT HEALTH .....	6
SAFETY .....	7
ERGONOMICS .....	9
REGULATORY AND RESEARCH ORGANIZATIONS .....	14

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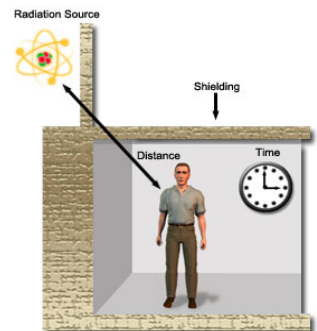
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## HAZARDOUS SUBSTANCES

### Walter Reed Army Medical Center Patients, Staff May Have Been Exposed To Radiation in May

Two packages of radioactive material sat under a counter in the main lobby of Walter Reed Army Medical Center for 44 hours, possibly exposing patients and staff to elevated radiation, according to an investigation by federal regulators.



The packages were delivered May 1 to the hospital's concierge, who stored them under the counter, according to the U.S. Nuclear Regulatory Commission. The intended recipient, the hospital's administrative officer, didn't locate the package until the next Monday, two days later. An NRC spokesman said that the agency is not aware of anyone being harmed.

The administrative officer noticed that the medical center had not received the expected delivery and unsuccessfully tried to find it. On May 3, the next workday, hospital officials continued their search and found the package at the concierge desk.

"The views expressed in this article are those of the author and do not reflect the official policy of the Department of the Army, Department of Defense, or the U.S. Government."

Use of trademarked names does not imply endorsement by the U.S. Army but is intended only to assist in identification of a specific product.

## HAZARDOUS SUBSTANCES (con't)

Walter Reed officials determined that radiation levels at the concierge desk were 2 millirems an hour, which exceeds allowable limits. The average American is exposed to 620 millirems a year. The violations at the hospital follow a similar lapse there last year. The NRC held a hearing on Sept. 1 to determine what, if any, enforcement action the commission will take.

A spokesman for the hospital, said there are no reports of illnesses or adverse effects from the exposure. Hospital officials attended the hearing and provided information on Walter Reed's radiation safety and nuclear medicine programs and the mitigation measures taken since the incident occurred in May.

Source: <http://www.washingtonpost.com/wp-dyn/content/article/2010/08/25/AR2010082505823.html>

### US Grapples with Bedbugs, Misuse of Pesticides



A resurgence of bedbugs across the U.S. has homeowners and apartment dwellers taking desperate measures to eradicate the tenacious bloodsuckers, with some relying on dangerous outdoor pesticides and fly-by-night exterminators.

The problem has gotten so bad that the EPA warned this month against the indoor use of chemicals meant for the outside. The agency also warned of an increase in pest control companies and others making "unrealistic promises of effectiveness or low cost."

Bedbugs, infesting U.S. households on a scale unseen in more than a half-century, have become largely resistant to common pesticides. As a result, some homeowners and exterminators are turning to more hazardous chemicals that can harm the central nervous system, irritate the skin and eyes or even cause cancer.

Ohio authorities, struggling against widespread infestations in the state, are pleading with EPA to approve the indoor use of the pesticide propoxur, which the agency considers a probable carcinogen and banned for in-home use in 2007. About 25 other states are supporting Ohio's request for an emergency exemption.

Read more at: [http://news.yahoo.com/s/ap/20100831/ap\\_on\\_re\\_us/us\\_bedbug\\_conundrum](http://news.yahoo.com/s/ap/20100831/ap_on_re_us/us_bedbug_conundrum)

### New York To Force Household Cleaner Giants to Reveal Chemical Ingredients

For the first time, the State of New York will require household cleaning companies to reveal the chemical ingredients in their products and any health risks they pose. Independent studies show a link between many chemicals commonly found in cleaning products and health effects ranging from nerve damage to hormone disruption. With growing concern about the potential hazards of chemicals in these products, advocates mounted a campaign pressing the State to uphold consumers' right to know and begin enforcing the 33-year-old law.



## HAZARDOUS SUBSTANCES (con't)

The first-of-its-kind policy could have national implications, as momentum builds here and abroad for toxic chemical reform. Congress is considering legislation to overhaul U.S. chemicals policy and in July debated a bill forcing the chemical industry to prove the safety of a chemical before it could be used in products. Internationally, companies are preparing to comply with a similar European law (known as REACH) already taking effect.

Cleaning product manufacturers are taking notice of the changing climate toward toxics in products and many have announced they will disclose the chemical ingredients in its products through product labels and websites.

Studies show links between chemicals in common household cleaners and respiratory irritation, asthma, and allergies. Occupational exposures to some ethylene glycol ethers, often used as solvents in cleaning products, are associated with red blood cell damage, reproductive system damage, and birth defects. Some solvents in cleaning products are also toxic to the nervous system.

*Source:*

[http://www.healthnewsdigest.com/news/Legal\\_370/New\\_York\\_To\\_Force\\_Household\\_Cleaner\\_Giants\\_To\\_Reveal\\_Chemical\\_Ingredients.shtml](http://www.healthnewsdigest.com/news/Legal_370/New_York_To_Force_Household_Cleaner_Giants_To_Reveal_Chemical_Ingredients.shtml)

### **Hexavalent Chromium Exposure and Control in Welding Tasks**

Studies of exposure to the lung carcinogen hexavalent chromium (CrVI) from welding tasks are limited, especially within the construction industry where overexposure may be common. In addition, despite the OSHA requirement that the use of engineering controls such as local exhaust ventilation (LEV) first be considered before relying on other strategies to reduce worker exposure to CrVI, data on the effectiveness of LEV to reduce CrVI exposures from welding are lacking. The goal of the present study was to characterize breathing zone air concentrations of CrVI during welding tasks and primary contributing factors in four datasets: (1) OSHA compliance data; (2) a publicly available database from The Welding Institute (TWI); (3) field survey data of construction welders collected by the Center for Construction Research and Training (CPWR); and (4) controlled welding trials conducted by CPWR to assess the effectiveness of a portable LEV unit to reduce CrVI exposure. In the OSHA (n = 181) and TWI (n = 124) datasets, which included very few samples from the construction industry, the OSHA permissible exposure level (PEL) for CrVI ( $5 \mu\text{g}/\text{m}^3$ ) was exceeded in 9% and 13% of samples, respectively. CrVI concentrations measured in the CPWR field surveys (n = 43) were considerably higher, and 25% of samples exceeded the PEL. In the TWI and CPWR datasets, base metal, welding process, and LEV use were important predictors of CrVI concentrations. Only weak-to-moderate correlations were found between total particulate matter and CrVI, suggesting that total particulate matter concentrations are not a good surrogate for CrVI exposure in retrospective studies. Finally, in the controlled welding trials, LEV reduced median CrVI concentrations by 68% (p = 0.02). In conclusion, overexposure to CrVI in stainless steel welding is likely widespread, especially in certain operations such as shielded metal arc welding, which is commonly used in construction. However, exposure could be substantially reduced with proper use of LEV.

*Source: Journal of Occupational and Environmental Health (Available with AIHA Membership)*

## PERSONAL PROTECTIVE EQUIPMENT

### Fit Testing Respirators for Public Health Medical Emergencies

Concerns about limiting pandemic infectious disease transmission when vaccines are not yet available prompted the Food and Drug Administration (FDA) to develop guidance for marketing respirators for use in public health medical emergencies. This project describes the results of filtering facepiece fit tests using 35 untrained, inexperienced subjects meeting the face size criteria of the National Institute for Occupational Safety and Health bivariate panel, in preparation for an FDA 510(k) application. Quantitative fit factors were measured for each subject on two replicates of each of two N95 filtering facepiece respirators (A and B) using the TSI Portacount Plus with N95 Companion. Subjects received no training or assistance with donning and had no prior experience with wearing respirators. The panel consisted of 20 females and 15 males; 80% were between 18 and 34 years of age. Almost all subjects properly placed the respirator on the face and formed the nose clip. Straps were improperly placed 25% of the time. Users reviewed the donning instructions 73% of the time and performed a seal check 80% of the time. Leaks were observed during 80% of the fit tests, most frequently at the chin during the head up and down exercise. For Respirator A, all but one subject had a 95% fit factor greater than 2 (the minimum required by FDA); one subject had a 95% fit factor of 1.5. All subjects had a 95% fit factor greater than 2.5 for Respirator B. Geometric mean fit factors ranged from 19-28 for these two respirators, and a majority of subjects were able to achieve a fit factor of 10 most of the time. However, fewer than 25% of subjects received the fit factor of 100 expected in workplace settings.

*Source: Journal of Occupational and Environmental Health (Available with AIHA Membership)*

## PREVENTIVE MEDICINE

### Frog Skin May Help Beat Antibiotic Resistance



Frog skin may be an important source of new antibiotics to treat superbugs say researchers. So far, more than 100 potential bacteria-killing substances have been identified from more than 6,000 species of frog. A team at the United Arab Emirates University are tweaking the substances to make them less toxic and suitable for use as human medicines.

Drug resistant bacteria, such as MRSA, are becoming an increasing problem worldwide. Yet there is a lack of new treatments in the pipeline. Among the substances found by the researchers is a compound from a rare American species that shows promise for killing MRSA. Another fights a drug-resistant infection seen in soldiers returning from Iraq. The idea of using chemicals from the skin of frogs to kill bacteria, viruses and other disease-causing agents is not a new one.

It is not a straightforward process to use these chemicals in humans because they are either destroyed in the bloodstream or are toxic to human cells. After identifying the key chemicals, researchers have altered their molecular structure to make them less dangerous to human cells while retaining their bacteria-killing properties. They hope their work means some of the substances could be in clinical trials within five years. They are also investigating how to help the chemicals resist breakdown by the body before they have a chance to act. Experiments have shown the changes they have made so far do make the antibiotics last longer in the bloodstream.

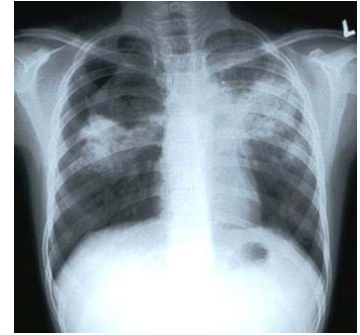
*Source:* <http://www.bbc.co.uk/news/health-11101278>

### Raid TB Test Shows High Accuracy

A two-hour molecular diagnostic test detected tuberculosis bacteria, including rifampin-resistant strains, with sensitivity and specificity well over 90%, researchers found. Sensitivity exceeded 98% in samples from patients with smear-positive *Mycobacterium tuberculosis* infections and the false positive rate was 0.8%.

Read more at:

<http://www.medpagetoday.com/InfectiousDisease/Tuberculosis/22011>



### New Smog Rules not Just for Big Cities



Parts of the country that haven't worried about air pollution may soon be in the fight California has faced for decades: cleaning up smog. Stricter rules proposed by the Obama administration could more than double the number of counties across the country that is in violation of clean air standards. That would likely have a big impact on other parts of the nation since California already sets stringent standards for cars, ships and trucks.

More than 300 counties - mainly in southern California, the Northeast and Gulf Coast - already violate the current, looser requirements adopted two years ago by the Bush administration. For the first time, counties in Idaho, Nevada, Oregon, the Dakotas,

Kansas, Minnesota and Iowa might be forced to find ways to clamp down on smog-forming emissions from industry and automobiles, or face government sanctions, most likely the loss of federal highway dollars.

The tighter standards will be costly but will ultimately save billions in avoided emergency room visits, premature deaths, and missed work and school days. The proposal presents a range for the allowable concentration of ground-level ozone, the main ingredient in smog, from 60 parts per billion to 70 parts, as recommended by scientists during the Bush administration. That's equivalent to a single tennis ball in an Olympic-sized swimming pool full of tennis balls.

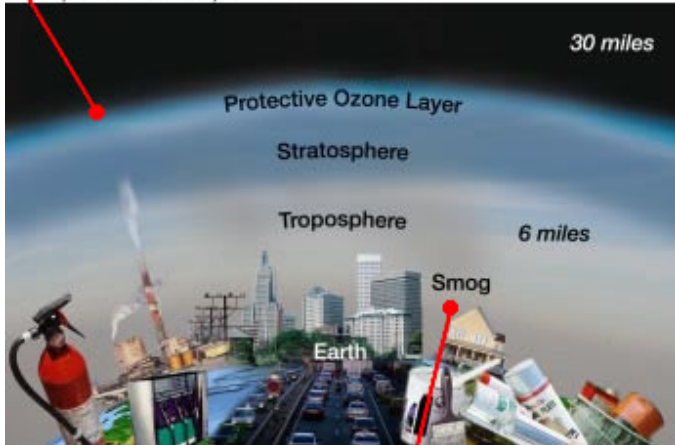
Read more at:

<http://www.cbsnews.com/stories/2010/01/08/national/main6071026.shtml?tag=cbsnewsSectionsArea;cbsnewsSectionsArea.1>

# NANOTECHNOLOGY

## Method to Trace Persistent CFCs

Too little there...Many popular consumer products like air conditioners and refrigerators involve CFCs or halons during either manufacture or use. Over time, these chemicals damage the earth's protective ozone layer.



Too much here...Cars, trucks, power plants and factories all emit air pollution that forms ground-level ozone, a primary component of smog.

Ultrafine measurements of atmospheric gases could help track down persistent sources of CFCs thought to be slowing the recovery of the ozone layer.

The use of the refrigerants and aerosol propellants was restricted by a global treaty in 1987, but they have stayed in the air longer than many expected.

A UK-German team has now shown how it is possible to chemically "fingerprint" CFCs to potentially trace their origin. The researchers worked on samples of atmosphere retrieved from high in the stratosphere (up to 35km; 115,000ft) by French space agency balloons.

Using mass spectrometers, they were able to detail the ratios of different types (isotopes) of chlorine atoms present in fantastically small concentrations - just 500

parts per trillion - of chlorofluorocarbon-12. CFC-12 is one of the dominant man-made ozone-eating gases and was widely used in refrigerators, air conditioning systems, fire extinguishers and spray cans before being phased out under the Montreal Protocol.

Read more at: <http://www.bbc.co.uk/news/science-environment-11166140>

# DEPLOYMENT HEALTH

## More Service Members Received Medical Care for Injuries



This report summarizes the numbers, incidence rates, trends, and demographic and military characteristics of U.S. military members affected by spontaneous tendon ruptures from 2000 to 2009.

Read more at:

[http://afhsc.army.mil/viewMSMR?file=2010/v17\\_n07.pdf#Page=14](http://afhsc.army.mil/viewMSMR?file=2010/v17_n07.pdf#Page=14)

## Georgia: Hostage-taking at Military Hospital Ends-Linked to Deployment Stress

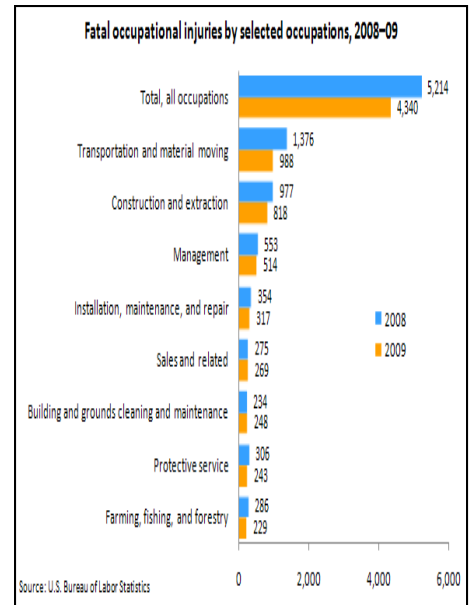
A former Army soldier seeking help for mental problems at a Georgia military hospital took three workers hostage at gunpoint before the authorities persuaded him to surrender peacefully. Kevin Larson, a Fort Stewart spokesman, said no one was hurt and no shots were fired in the standoff at Winn Army Community Hospital at the fort, about 40 miles southwest of Savannah. Military officials said the hostages were able to calm the gunman and keep him away from patients until he surrendered. The gunman was arrested by military police. Brig. Gen. Jeffrey Phillips, a senior Fort Stewart commander, said the former soldier was seeking help for mental problems that were "connected, I'm quite certain, to his past service."

Source: [http://www.nytimes.com/2010/09/07/us/07brfs-HOSTAGETAKIN\\_BRF.html?\\_r=1&ref=us](http://www.nytimes.com/2010/09/07/us/07brfs-HOSTAGETAKIN_BRF.html?_r=1&ref=us)

## Fatal Occupational Injuries Decline During 2009

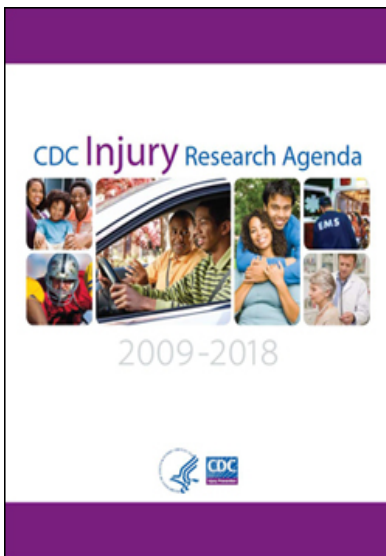
Preliminary results from the Bureau of Labor Statistics' National Census of Fatal Occupational Injuries show the lowest number of workplace fatalities since the CFOI program was first conducted in 1992. Last year's preliminary count of 4,340 workplace fatalities is down from the final count of 5,214 in 2008. Economic factors played a major role in this decrease. Total hours worked fell by 6% in 2009 following a 1% decline in 2008, and some industries that have historically accounted for a significant share of fatal work injuries, such as construction, experienced even larger declines in employment or hours worked.

Comparing preliminary figures from 2009 and 2008 shows that workplace fatalities among wage and salary workers declined by about 18 percent from last year, while fatal injuries among self-employed workers, who are not covered by OSHA, remained about the same. According to the BLS, the overall fatality rate was 3.3 per 100,000 full-time equivalent workers. The fatality rate for Hispanic workers remained higher at 3.7 per 100,000 full-time equivalent workers in 2009.



Source: <http://www.osha.gov/as/opa/quicktakes/qt09012010.html#1>

## Study: Workers Rate Safety Most Important Workplace Issue



More than eight out of 10 workers ranked workplace safety first in importance among labor standards, even ahead of family and maternity leave, minimum wage, paid sick days, overtime pay and the right to join a union, according to a new study from the National Opinion Research Center at the University of Chicago.

The study, "Public Attitudes Towards and Experiences with Workplace Safety," drew on dozens of surveys and polls. The analysis sought to gain a picture of Americans' experiences with workplace safety issues.

Despite widespread public concern about workplace safety, the study found that the media and the public tend to pay closest attention to safety issues when disastrous workplace accidents occur. Even during those tragedies, the fate of workers often is overlooked, such as during the recent oil well disaster in the Gulf of Mexico.

Media coverage and the polls focused on the environmental impact of the disaster while overlooking the worker safety aspects. If optimal safety had been maintained, not only would the lives of the 11 workers been saved, but the whole environmental disaster would have been averted.

U.S. DOL reported in a preliminary count that the number of workers who died on the job in 2009 fell 17% from the previous year. Despite a decrease in workplace fatalities, the study found reports of incidents of injury

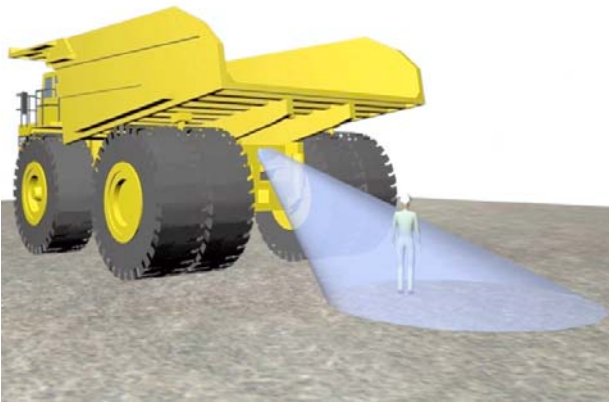
## SAFETY (con't)

at work to be high. Although most workers say they are satisfied with safety conditions at work, they also report job-related stress, a contributing factor to injury. The most recent NORC study on job-related stress, done in 2006, reported that 13% of workers find their jobs always stressful, while 21% find their jobs often stressful.

The new study, which was conducted for the Public Welfare Foundation, found that about 12% of workers reported an on-the-job injury during the past year and 37% said they have required medical treatment at one time for a workplace injury.

Source: <http://ehstoday.com/safety/news/workers-rate-safety-most-important-issue-9650/>

### Next Generation Mining Safety Technology Saves Lives with Sensors



Although they won't attain field readiness in time to help workers trapped by the mine collapse in Chile, a number of new technologies will enter service in the next few years that could drastically increase mine collapse survival rates. These technologies differ in their use, but all use advanced sensors to help miners locate fallen colleagues, alert rescue teams and flee to safety. The sensors will help navigate drills directly to trapped miners, enable robots and escape vehicles to speed through the darkened labyrinths carved from the living rock and allow rescue teams to find miners in tunnels filled with black smoke and deadly gas.

In future mines, the sensors will come in a variety of shapes, sizes and uses, but will primarily fall into two categories: sensors that help guide machinery, and sensors that help locate individual miners.

Read more at: [http://www.msnbc.msn.com/id/38884331/ns/technology\\_and\\_science-tech\\_and\\_gadgets/](http://www.msnbc.msn.com/id/38884331/ns/technology_and_science-tech_and_gadgets/)

### Fire Protection at Colleges

In an effort to prevent injuries and illnesses in fires that occur in college residence halls, off-campus housing or fraternity/sorority houses and to raise awareness of life-saving fire prevention knowledge as students return to school, the American Society of Safety Engineers (ASSE) and the ASSE Fire Protection Practice Specialty (PS) are providing free fire prevention and safety tip sheets.

According to the National Fire Protection Association (NFPA), U.S. fire departments responded to an estimated 3,570 structure fires in dormitories, fraternities, sororities, and barracks in 2003-2006. These fires caused an annual average of seven civilian deaths, 54 civilian fire injuries and \$29.4 million in property damage. Though a number of student-related fire tragedies occur both on and off-campus, the majority of fatal fires occur off-campus. According to the U.S. Fire Administration (USFA), out of the 139 campus-related fire fatalities that occurred from January 2000 to the present, 84 percent occurred off-campus.

The USFA notes that there is a strong link between fire deaths and alcohol--stating that in more than 50 percent of adult fire fatalities the victims were under the influence of alcohol at the time of the fires. The USFA also



## SAFETY (con't)

states that in cases where fire fatalities occurred on campus, alcohol was a factor. Drinking alcohol impairs judgment and motor skills, and can hinder efforts to evacuate during a fire.

According to the U.S. Centers for Disease Control (CDC) Fire Deaths and Injuries Fact Sheet, most victims of fires die from smoke or toxic gases, not from burns. Additionally, according to the USFA, smoke inhalation alone accounts for 40 percent of residential building fire injuries. Smoke inhalation occurs when one breathes in the products of combustion during a fire. Combustion results from the rapid breakdown of a substance by heat, burning. Smoke is a mixture of heated particles and gases.

To help reduce risk of injury and death, residence halls should be equipped with properly operating self-closing doors that are not propped open; clearly marked exits; corridors that are kept clear and are not blocked; heating and ventilation systems that are routinely inspected and repaired for any deficiencies; and properly operating fire alarm and extinguishing systems, where required.

There are many steps you can take to prevent on and off-campus fires. Simple actions such as not overloading extension cords, power strips or outlets significantly reduce risk. Cooking safely, avoiding open flames and correctly discarding of smoking materials are just a few additional ways to reduce the risk of fire. Students should know where all exits are located and develop a fire escape plan for off-campus housing. Students living in on-campus dormitories or residence halls should follow all emergency evacuation procedures and participate in all fire drills. Know how to operate a fire extinguisher, fire alarms and smoke detectors. ASSE provides free fire safety tips on statistics, prevention, fire escape planning, fire safety equipment for off-campus and Greek housing, information on recent incidents, a parent guide to fire safety, what you need to know when your child leaves home for college, a list of key resources and an on/off campus fire safety flyer. These are available at [www.asse.org/newsroom/safetytips](http://www.asse.org/newsroom/safetytips) under on/off campus fire safety tips.

### **Free Tools for Employers to Prevent Distracted Driving**

To assist employers in communicating the dangers of distracted driving to workers and in formulating company policies on the use of mobile electronic devices, the U.S. Department of Transportation has posted free resources at <http://www.distracteddriving.gov/campaign-tools/employers/>. These include a full set of materials for the 2010 Drive Safely Work Week (DSWW) campaign (part of the Network of Employers for Traffic Safety (NETS) program) in addition to supplementary posters and sample employer policies. The theme of the 2010 DSWW campaign is "Focus. Safe driving is serious business," and the materials emphasize the dangers of distracted driving, particularly the use of cell phones and texting while driving. For more information on NETS and its programs, please visit <http://www.trafficsafety.org>

## ERGONOMICS

### **Sierra Army Depot Palletized Loading System**

The Sierra Army Depot Safety Office teamed up with members of the 423rd Transportation Company to mitigate hazardous operations on the palletized loading system (PLS). Basic PLS operating functions were dissected and the only real hazard identified was getting up onto the PLS to conduct basic maintenance checks. There were marginal handholds for climbing up to check engine oil, transmission fluid, and coolant level.



## ERGONOMICS (con't)

The 423rd Transportation Company Team and the Sierra Safety Team brainstormed the risk and performed a job hazard analysis. The teams concluded that the best ergonomic solution was to install an additional climbing handle on the cooling fan housing. The handle was designed, fabricated, and installed on the PLS at Sierra Army Depot.

The newly designed safety handle mitigates ergonomic risk factors. It balances body load forces by establishing solid three-point contact when climbing on a PLS to conduct maintenance checks. The mechanic no longer has to grab the inadequate angled bracket just above the fan blade, which could lead to losing grip and falling.

Grabbing the safety handle instead of the angle bracket puts less stress on the wrist tendons when climbing onto the cooling fan housing. Existing bolt holes were used to avoid extra time prepping and welding on chemical agent resistant coating paint.

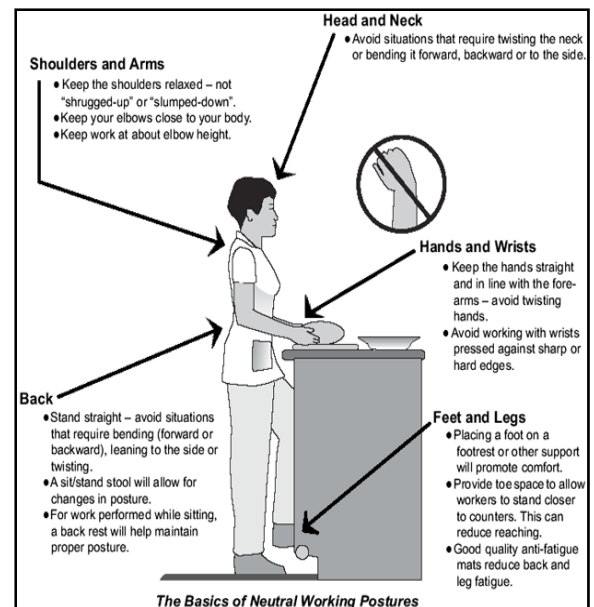
Source: [www.ergoworkinggroup.org](http://www.ergoworkinggroup.org)

### Re-Engineering for Older Workers

Using available technology, companies can collect and analyze detailed job and task data to develop a clearer picture of what it takes to be effective in each job and to categorize risks by body part.

Take a good look at your company's last holiday photo. Chances are, there are a whole lot more gray-haired employees than there used to be. It's just one informal sign of a long-predicted trend, the aging of the American workforce. The cause is twofold: A faltering economy has chipped away at 401(k) plans, thereby postponing employees' retirement dates. Add years of low birthrates to that, and you have the silver roots of a trend. There is no getting around the numbers. By some estimates, the U.S. economy will require 58 million workers by 2025. However, based on current birth rates, the number of new workers joining the workforce will make up less than half of the projected jobs. That means the gap must be filled by workers over the age of 65. Therefore corporate productivity is greatly dependent on the health and safety of older employees.

The key to preparing for this ongoing change is to understand the fundamental needs of aging employees. The good news is that the older the worker, the more experience and wisdom he or she brings to the office, the field, or the factory floor. However, to maximize the contributions of older workers and prepare the workplace for the long haul, employers need a more comprehensive plan than simply adjusting the lights or altering shelf heights. To avoid the almost certain increase in injury cost and severity, they need an enterprise-wide system to help them identify and act on gaps between the physical capabilities of their workforce and the current physical demands of their job landscape. In fact, the biggest risk aging workers face is that of musculoskeletal disorders (MSD), the most common cause of work-related disability.



## ERGONOMICS (con't)

As employees age, their strength and range of motion decreases, thereby making them more susceptible to MSDs. Once injured, their recovery time is substantially longer than their younger counterparts'. Therefore, the employee who has been repetitively lifting and shelving over the course of a decade may have to shift responsibilities. Likewise, an employee who is recovering from a shoulder injury may need to find a role off the production floor and in the office until healed.

To ensure fewer injuries and maximize employee productivity over the long haul, companies would benefit from developing a comprehensive system that catalogues the physical requirements and essential functions associated with every job. This kind of system, along with an understanding of the capabilities and/or limitations of the aging workforce, will enable managers to better understand which jobs are suitable for certain employees to perform. This in-depth understanding of job requirements can also help companies:

1. Better understand job-related risks and re-engineer jobs to reduce risk of injury (for all employees, including those with gray hair).
2. Match employees and jobs with greater success and safety.
3. Enhance return-to-work opportunities.
4. Share job- and risk-related information across the organization.

This comprehensive system is made up of a few essential parts: capturing job-related data and entering the job data into a centralized location to make it accessible and usable, and providing relevant stakeholders with access to both sets of data in this location (i.e., HR, Facilities, Worker's Compensation, Safety, Disability Management, etc.).

Read more at: <http://ohsonline.com/articles/2010/09/01/re-engineering-for-older-workers.aspx?admgarea=ht.Ergonomics>

### Designing Your Own Workspace Improves Health, Happiness and Productivity



Employees who have control over the design and layout of their workspace are not only happier and healthier -- they're also up to 32% more productive. Studies show the potential for remarkable improvements in workers' attitudes to their jobs by allowing them to personalize their offices. The findings challenge the conventional approach taken by most companies, where managers often create a 'lean' working environment that reflects a standardized corporate identity.

Research involved more than 2,000 office workers in a series of studies looking at attitudes to -- and productivity within -- working space. This included two surveys of workers' attitudes carried out via online questionnaires, as well as two experiments which examined workers' efficiency when carrying out tasks under different conditions.

The surveys assessed the level of control workers had over their space -- ranging from none at all to being fully consulted over design changes. Workers were then asked a series of questions about how they felt about their workspace and their jobs. Results consistently showed that the more control people had over their office

spaces, the happier and more motivated they were in their jobs. They felt physically more comfortable at work, identified more with their employers, and felt more positive about their jobs in general.

Two further studies, one at the University and another in commercial offices saw participants take on a series of tasks in a workspace that was either lean (bare and functional), enriched (decorated with plants and pictures), empowered (allowing the individual to design the area) or disempowered (where the individual's design was redesigned by a 'manager'). People working in enriched spaces were 17% more productive than those in lean spaces, but those sitting at empowered desks were even more efficient -- being 32% more productive than their lean counterparts without any increase in errors.

Source: <http://www.sciencedaily.com/releases/2010/09/100907104035.htm>

### Four Lab Studies Jump-Start Health Effects Research

A large, multi-lab endeavor identifies the most common byproducts formed during drinking water disinfection and develops methods to study and understand their health impacts..

Scientists developed a method to make contaminated water that closely matches the mixture of byproducts and other chemicals created when drinking water is disinfected. The liquid can be used for health effects research studies.

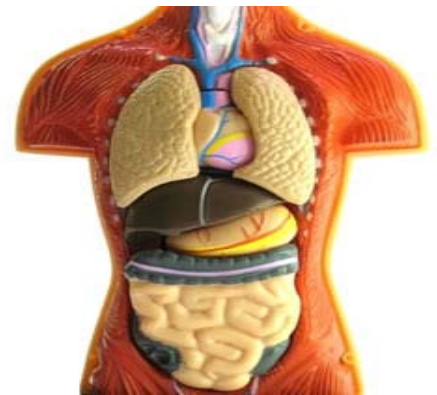
More than 100 chemical byproducts were identified and the levels of 75 of the most harmful and highly regulated one were measured. It was the first time many of the chemicals had ever been detected. This study is important because it lays the foundation for future research to explore health effects from the degradation products of water disinfection processes, a much needed area of research.

Drinking water disinfection processes often lead to the formation of byproduct chemicals in water; some of these chemicals are known carcinogens and may be associated with health problems. Prior human studies have suggested that exposure to some of the chemicals may have reproductive and developmental effects as well.

The large group of scientists worked together to create the large volumes of water that concentrated and stabilized the disinfection byproducts (DBPs). The existing methods for concentrating organic compounds – namely resin extractions and the use of organic solvents – had hindered previous attempts to produce the large volumes of water needed for these studies.

The new method uses reverse osmosis technology to concentrate natural organic matter in water. This water is then treated with chlorine to form the DBPs. Concentrating, then disinfecting, creates the large volumes of water with more stable DBP products, including chemicals that are typically lost to the air – such as, volatile organic compounds. The mixture was stable for more than 100 days, making the mixture suitable for use in animal studies.

The water was analyzed to determine the primary DBPs and the types and levels were compared to the list of regulated, unregulated priority and unknown chemicals targeted by federal agencies. From this, they identified many new halogenated disinfection byproducts, including haloacids, haloamides, halofuranones and



nonhalogenated DBPs. This finding is important because haloamides in particular are extremely toxic to cells and genes in mammals.

Source: <http://www.environmentalhealthnews.org/ehs/newscience/disinfection-byproducts-studied-to-pinpoint-health-effects/>

### The Use of Noise Dosimeters in the Workplace

The industrial environment has changed drastically in recent decades with an increased level of automation within the workplace. This has given rise to many changes in employee work patterns. It used to be the case on the majority of production lines, an employee would stay in one place during his or her shift. Monitoring the worker's noise exposure with a traditional sound-level meter was the answer.

However, with the increase in completely automated production lines, employees now may supervise several machines. This means they move around from workstation to the next, varying their exposure to noise in a much more dramatic way than previously. This article examines how noise dosimeters play a more important role in these types of noise assessments.

The only way to monitor precisely an individual's exposure to noise is by using either a sound-level meter or a dosimeter. A sound-level meter is a hand-held device that allows a competent third party to take measurements at the operator's ear with the instrument pointing at the noise source. By repeating this exercise for all operations an employee performs during the day, you can calculate his daily exposure.

Where it is difficult to get close to employees with a sound-level meter, as in the case of forklift truck drivers, or where workers are exposed to many different noise levels, they should wear a noise dosimeter. This is the case more often than not in the modern workplace, where if you are using a standard meter you would have to measure the noise levels at each location, find out how long the worker stays at that location, and then calculate an overall exposure. This can take hours of calculations to perform and will not always result in accurate measurements.

Read more at: <http://ohsonline.com/articles/2010/09/01/the-use-of-noise-dosimeters-in-the-workplace.aspx?admgarea=ht.HearingProtection>



## REGULATORY AND RESEARCH ORGANIZATIONS

### Some Seek OSHA Health Care Infectious Disease Standard

As often happens with a potential OSHA rulemaking effort, the agency's May 2010 request for information on infectious disease control in health care settings has drawn comments for and against a rulemaking. The comments of PPE providers urge OSHA to issue a regulation for this area, as California did recently with its standard on infectious diseases transmitted through aerosol and droplet routes, while comments from health care organizations generally say current Joint Commission, CMS, and other standards are already sufficient, so no action by OSHA is warranted.



3M Company filed comments that 3M has been asked about respirators in the past decade that could protect against TB, hantavirus, coronavirus, anthrax spores, smallpox, Legionella, avian flu, H1N1 flu, and more. Saying CDC's respirator recommendations are not sufficient, apparently because of a lack of understanding about respirators, a 3M executive stated, "OSHA needs to take control of this area and develop criteria for selecting respirators for reducing exposure to infectious agents."

Read more at: <http://ohsonline.com/articles/2010/08/15/some-see-osh-health-care-infectious-disease-standard.aspx?admgarea=ht.Respiratory>

### NIOSH Updates List of Hazardous Drugs in Healthcare Settings

NIOSH has published an updated drug list of antineoplastic and other hazardous in healthcare settings <http://www.cdc.gov/niosh/docs/2010-167/>. (NIOSH Pub.No. 2010-167). This list includes drugs reviewed by NIOSH up to June 2007 and replaces the original list found in Appendix A of the 2004 Alert: Preventing Occupational Exposure to Antineoplastic and Other Hazardous Drugs in Health Care Settings <http://www.cdc.gov/niosh/docs/2004-165/>