



THE SSE ELUCIDATOR

“Elucidate: to give clarity through explanation and analysis.”

Light Bulb Ban

New Efficiency Standards Eliminate Edison’s Invention

Some good news: All facilities will soon be helping to reduce greenhouse gas (GHG) emissions.



But it will require some re-lighting investments by those facilities that still use incandescent lights.

Reason: Congress has banned the incandescent light bulb that made Thomas Edison so proud.

Energy needed for light, not heat

Tucked away in the new energy bill that President George Bush signed in December is a provision mandating the phase-out of the incandescent light bulb by 2014.

The same bill that boosts car mileage standards to 35 miles per gallon also includes energy efficiency standards that force the elimination of Edison’s bulb, which uses nearly 90% of its energy consumption to produce heat, not light.

The new federal law requires that light bulbs use 25% to 30% less energy. The first light to go the way of the chariot will be the 100-watt bulb. Its last day will be in 2012; the 40-watt bulb phases out in 2014. By 2020 all bulbs must be 70% more efficient than today.

“BY 2020 ALL BULBS MUST BE 70% MORE EFFICIENT THAN TODAY.”

Replacement options include: compact fluorescent lights, halogen bulbs and LED lights.

The law also gives states the right to exceed federal energy standards. So far California and Nevada have

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laws that require a faster phase out of the incandescent bulb.

The Department of Energy is encouraging citizens to take a pledge to replace at least one incandescent bulb with a compact fluorescent light bulb.

Bright Idea:

Comparison of incandescent light bulbs and fluorescent light bulbs



	INCANDESCENT	FLUORESCENT
Energy used (watts)	60	13
Light output (lumens)	850	800
Average cost (dollars)	\$0.25 to 0.60	\$2 to 4
Annual savings (dollars)	\$0	\$8
Annual carbon savings (pounds)	0	roughly 100
Life (hours)	1,000	5,000 to 10,000
Mercury in the bulb (milligrams)	none	4
Mercury emissions (milligrams)	10	2.4
Number of bulbs sold annually*	1.5 to 2 billion	130 to 150 million

*Includes all wattages

For more information on light bulbs or the energy bill visit: <http://www.energy.gov/> or <http://www.epa.gov/>

STAIRWAY SAFETY

According to the Home Safety Council's national report on home injuries, the State of Home Safety in America™ (2004), falls accounted for nearly one-third of all unintentional home injury deaths each year. Falls from stairs and steps were the second leading cause of death due to falls. The following information is from the Home Safety Council's steps to stairway safety:



- ◆ Use the handrail. (All stairways and steps, no matter how short, should have handrails on both sides.)

- ◆ Install bright lights and on/off switches at the top and bottom of each stairwell and over porches and entryways.



- ◆ Paint the bottom basement step white to make it more visible. Mistaking the lowest step for floor level can cause you to lose your balance and fall.



- ◆ Keep stairways and steps clear of all objects. Never use the stairs as temporary storage or for displaying decorative items.

- ◆ Wear footwear with traction. Avoid wearing socks or smooth-soled slippers, which can slide out from under you on bare floors.



- ◆ Be sure to remove your reading glasses when walking up or down stairs. If you were bifocals adjust your glasses so you can see clearly.



- ◆ In homes with young children, use safety gates at the tops and bottoms of stairways.

- ◆ Avoid carrying vision blocking loads. Carry a small enough load up and down stairs that you can see where you are stepping and can easily keep one hand free to hold onto a handrail.



- ◆ Check stairs for worn or loose carpeting or protruding carpet tacks. If your steps have a smooth surface, consider installing anti-slip tread to provide safer traction.



- ◆ Avoid placing throw rugs at the top or bottom of a stairway as small scatter rugs can slide or the edges can become curled. If it is necessary to put a rug at the bottom of a stairway, make sure it has a skid-resistant backing and use carpet tape to keep the corners from curling.

- ◆ If you have steps outside your home, keep them free of ice and snow. To prevent a tripping hazard, periodically check steps and walkways for broken or loose bricks, cement or stone.



- ◆ The best way to avoid falls is to take your time. Slow down and use the handrail, rushing is a major cause of falls.

For more information on stairway safety and other ways to create a safe environment in your home visit: http://www.homesafetycouncil.org/safety_guide/safetyguide.aspx

AUTOCLAVE SAFETY



Autoclaves are such a familiar piece of equipment in most laboratory settings that it is easy to forget the kinds of hazards they pose. The autoclave's job is to render its contents sterile, or to reduce the microbial load to an acceptable level. If it fails to accomplish this task, seri-

ous health hazards can result.

The hot, pressurized steam that autoclaves generate to do this job makes them serious burn hazards as well. The conditions created inside steam autoclaves are so extreme, autoclaves can easily malfunction if they are not carefully maintained. Autoclave maintenance is an important aspect of a properly functioning autoclave. Follow the manufacturer's recommendations for preventative maintenance and ensure all contractors are approved by the manufacturer. Maintenance should include periodic efficiency tests to ensure the autoclave is functioning properly.

Each autoclave has unique characteristics. Review and understand the owner's manual before using any autoclave for the first time and as needed thereafter.

Important Safety Practices

There are several practices that will minimize the chance of a serious accident occurring but also increases the functionality of the autoclave.

1. Before using the autoclave, check to make sure no items were left inside by the previous user that could pose a hazard.
2. Clean the drain strainer before loading
3. Load the autoclave properly as per manufacturer's recommendations.
4. Before loading containers of liquids into the

autoclave, the caps must be loosened to avoid having the bottles shatter during pressurization.

5. Individual glassware pieces should be in heat resistant plastic trays on a shelf or rack and never placed directly on the autoclave bottom or floor.

6. Use a tray with a solid bottom and walls to contain the contents and catch spills.

7. Add $\frac{1}{4}$ to $\frac{1}{2}$ inch of water to the tray so the bottles will heat evenly.

8. Check plastic materials are compatible with being autoclaved.

9. Make sure the autoclave door is fully closed and latched and the correct cycle is selected before starting the cycle.

10. Wear heat resistant gloves when operating the autoclave door after a cycle. If there is a sharps hazard, wear heat and cut resistant gloves.

11. If the door must be opened prior to the "cool down" cycle being completed, stand behind door when opening and beware rush of steam. Be sure to wear eye and face protection.

12. For non liquid glassware loads allow the material to cool for 15 minutes prior to touching it with ungloved hands. If the material is waste, wear at least latex or equivalent gloves to place the waste in the proper medical waste container.

13. For liquid loads allow the material to cool for one hour before touching with ungloved hands. Inform others that a heat hazard is present.

14. At a minimum, when removing items from the autoclave, wear a rubber apron, rubber sleeve protectors, and heat resistant gloves

Prohibited Autoclave Activities

Do not autoclave items containing corrosives (e.g. acids, bases, phenol), solvents or volatiles (e.g. ethanol, methanol, chloroform) or radioactive materials.

SCHOOL BUS SAFETY: FOR YOU AND YOUR CHILD



as the automobile

In all that time there has been an uneasy co-existence between school buses and motorists. School buses make frequent stops to load and unload students. It is the nature of their business. By law, when a school bus stops to drop off or pick up students, motorists must stop too. But motorists often don't want to stop. Motorists want to get where they are going, with little interruption and as quickly as they can.

A school transportation-related crash is a crash which involves, either directly or indirectly, a school bus body vehicle, or a non-school bus functioning as a school bus, transporting children to or from school or school-related activities.

Since 1996 there have been about 417,705 fatal motor vehicle traffic crashes. Of those, 0.33 percent (1,387) were classified as school transportation-related.

Since 1996, 1,536 people have died in school transportation-related crashes — an average of 140 fatalities per year. Most of the people who lost their lives in those crashes (72%) were occupants of other vehicles involved. Non occupants (pedestrians, bicyclists, etc.) accounted for 20 percent of the deaths, and occupants of school transportation vehicles accounted for 7 percent.

Since 1996, 159 school-age pedestrians (younger than 19) have died in school transportation-related crashes. Over two-thirds (67%) were killed by school

buses, 6 percent by vehicles functioning as school buses, and 28 percent by other vehicles involved in the crashes. One-half (50%) of all school-age pedestrians killed in school transportation-related crashes were between the ages of 5 and 7.

Tips to Avoid School Transportation Related Accidents

During your morning and afternoon commutes:

- ◆ Be on the look out for children who may stray into traffic while waiting for and when getting on and off of the school bus
- ◆ Be aware of the school zones and follow the posted speed limits
- ◆ Respect and obey school crossing guards
- ◆ Watch for pedestrians when picking up and dropping children off at the school parking lot
- ◆ Use your headlights during limited visibility

The general rule on undivided roads and highways, is that if you are approaching a school bus that has stopped in the road, STOP! No matter which direction you are approaching the bus from, you MUST stop until at least one or more of the following things have occurred:

- ◆ The school bus resumes in motion
- ◆ You are signaled by the school bus driver to proceed
- ◆ The visual signal used by the bus (usually blinking lights) is turned off

This rule applies to all roads that do not have driving medians or barriers. The rule applies to roads with turning lanes (these are not considered to be medians or barriers), and the rule applies no matter how many lanes the road has.



SCHOOL BUS SAFETY: FOR YOU AND YOUR CHILD (cont.)

The general rule for divided roads is slightly different:

- ◆ Remember, a turning lane does not make the road a divided road. A divided road is one that has a barrier or median
- ◆ On a divided road or highway, only traffic going in the same direction as the bus is required to stop, but all lanes going in the same direction as the bus must still stop.

A PARENTS GUIDE: 15 Basic Tips on School Bus Safety

Getting to the school bus

1. Remind your child to get to the bus stop at least five minutes before the school bus arrives. Children should never run after the school bus to try to catch it if they miss their ride.
2. Your child should stay on the sidewalk; if there is no sidewalk, tell your child to walk on the left side of the street facing traffic.
3. Remind your child that she/he should cross the street only at a corner. If there are no street corners because your family lives in a rural community, you should show your child the safest way to get to the bus stop. When crossing the road, your child must remember to look to the left, then to the right, and to the left once more before crossing.
4. When the school bus is approaching the bus stop, your child must take five steps back from the road.
5. Wait until the bus has stopped and the door opens before stepping onto the roadway.

Riding on the school bus

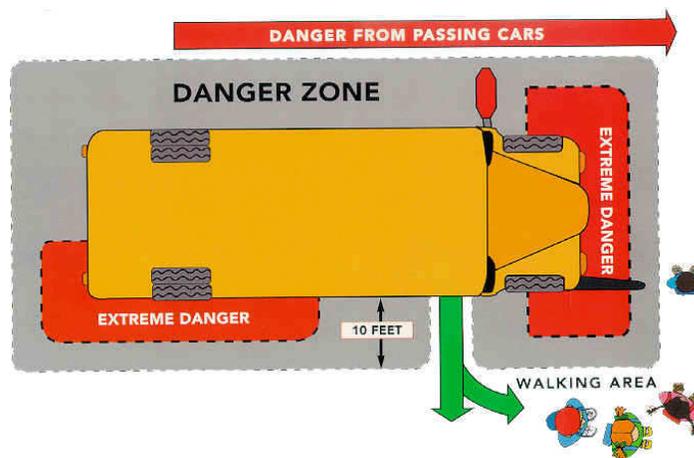
6. When on the bus, your child should find a seat and sit down. Loud talking or other noise can distract the bus driver and is not allowed.
7. Your child should never put head, arms or hands

out of the window.

8. Remind them it is important to keep aisles clear -- books or bags are tripping hazards and can block the way in an emergency.
9. Before your child reaches his/her stop, they should get ready to leave by gathering their books and belongings together.
10. Remind your child to wait for the bus to stop completely before getting up from their seat. Then, walk to the front door and exit, using the hand rail.

After riding on the school bus

11. It is important for you to remind your child to stay away from the three danger zones – the front, sides and back of the bus – by staying at least 10 feet away from the school bus.
12. If students must cross the street, they should always cross in front of the school bus but only after establishing eye contact with the school bus driver.
13. Students should not cross the street until the driver signals that it is safe for the student to cross the street.
14. Remind your child to always keep an eye out for sudden traffic changes.
15. If students drop something near or under the school bus, they should never attempt to retrieve it without the driver's permission.



WORKPLACE VIOLENCE



According to the Bureau of Justice Statistics, an estimated 1.7 million workers are injured each year during workplace assaults; in addition, violent workplace incidents account for 18% of all violent crime in the United States. Liberty Mutual cites “assaults and violent acts” as the 10th leading cause of nonfatal occupational injury in 2002, representing about 1% of all workplace injuries and a cost of \$400 million.

During the 13-year period from 1992 to 2004, an average of 807 workplace homicides occurred annually in the United States, according to the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI). The number of deaths ranged from a high of 1,080 in 1994 to a low of 551 workplace homicides in 2004, the lowest number since CFOI began in 1992. Although the number of deaths increased slightly over the previous year in both 2000 (677) and 2003 (631), the overall trend shows a marked decline.

From 1992 through 1998, homicides comprised the second leading cause of traumatic occupational injury death, behind motor-vehicle-related deaths. In 1999, the number of workplace homicides dropped below the number of occupational fall-related deaths, and remained the third leading cause through 2003. In 2004, homicides dropped below struck-by-object incidents to become the fourth leading cause of fatal workplace injury.

It is not altogether clear what factors may have influenced the overall decreasing trend in occupational homicides for the period 1992 through 2004, and whether the decreasing numbers will be sustained in subsequent years. Since robbery-related violence results in a large proportion of occupational homicides, certain trends (e.g., economic

fluctuations) are likely to have contributed to the decreasing toll. The reduction may partially stem from the efforts of researchers and practitioners to address robbery-related workplace violence (WPV) especially through intervention evaluation research and dissemination and implementation of evidence-based strategies.

The reduction may be partially explained by the efforts of Federal, State, and local agencies and other policy-makers to develop statutes, administrative regulations, and/or technical information for WPV prevention as a result of improved recognition and understanding of the risks for WPV. Whatever the reasons behind the trend, future research and prevention efforts should focus on identifying, verifying, and replicating successes—such as reductions in robbery-related violence—and identifying and addressing those types of WPV where little or no change has occurred.

The fact that violence-related deaths increased over previous years' totals in both 2000 and 2003 raises questions about the sustainability of the overall downward trend and whether the occupational homicide experience in the United States may in fact be leveling.

“HOMICIDE IS THE LEADING CAUSE OF INJURY DEATH FOR WOMEN IN THE WORKPLACE”

Women's Risk

Homicide is the leading cause of injury death for women in the workplace, accounting for 40% of all workplace death among female workers. Workplace homicides are primarily robbery-related, and often occur in grocery/convenience stores, eating and drinking establishments, and gasoline service stations. Over 25% of female victims of workplace

WORKPLACE VIOLENCE (cont.)

homicide are assaulted by people they know (co-workers, customers, spouses, or friends). Domestic violence incidents that spill into the workplace account for 16% of female victims of job-related homicides.

Female workers are also at risk for nonfatal violence. Women were the victims in nearly two-thirds of the injuries resulting from workplace assaults.

Most of these assaults (70%) were directed at women employed in service occupations, such as health care, while an additional 20% of these incidents occurred in retail locations, such as restaurants and grocery stores.

Prevention

The U.S. Department of Labor, through its Occupational Safety and Health Administration (OSHA) and the BLS, brought increased focus on occupational violence through compliance, surveillance, analysis, and information dissemination efforts. Although no

specific Federal regulations addressed WPV, OSHA began to cite employers where violent incidents occurred under the General Duty Clause [29 USC* 654 5(a)(1)], which requires employers to provide safe and healthful work environments for workers. OSHA also provided and disseminated, through reports and the OSHA Web site, violence prevention guidance for high risk sectors and populations such as health care, social services, late-night retail establishments, and taxi and delivery drivers. The BLS has clarified the injury and fatality risks to workers from violent incidents through its nonfatal and fatal injury surveillance and special analyses of characteristics of occupational violence.

For more information on workplace violence, protection and prevention of workplace violence or workplace violence statistics visit:

<http://www.cdc.gov/niosh> or <http://www.osha.gov>
or <http://www.bls.gov/>

UPCOMING COURSES AND SEMINARS

- Title:** 51st Annual Biological Safety Conference
- Location:** Reno, NV **Date:** 10/19/08 – 10/22/08
- Description:** This years Annual Biological Safety Conference will be held at John Ascuaga's Nugget. Last years conference was attended by 750 professionals from 32 countries offering the opportunity for communication between colleagues throughout the world.
- Web:** For more information visit <http://www.absa.org/confsem.html>.

- Title:** Joint Service Environmental Management Training Conference: "Environment and Energy Management in Transforming DoD"
- Location:** Denver, CO **Date:** 5/5/08–5/8/08
- Description:** JSEM 2008 will be held at the Denver Conventions Center and will address a wide range of perspectives, including policy, implementation, best management practices, data management, and technology
- Web:** For more information or to register visit <http://www.jsemconference.com/2008/index.htm>

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Office of Surety, Safety and Environment (SSE)
U.S. Army Medical Research Materiel Command
MCMR-ZC-SSE
504 Scott Street
Fort Detrick, MD 21702-5012

SSE Staff Contacts:

Cliff Wendel, Chief SSE

Phone: 301-619-8313

E-Mail: cliff.wendel@amedd.army.mil

Geoff Phillips, Safety Officer

Phone: 301-619-8806

E-Mail: geoffrey.phillips@amedd.army.mil

JoLane Souris, Environmental Officer

Phone: 301-619-2004

E-Mail: jolane.souris@amedd.army.mil

Cavelle Williams, Safety Protocol Review

Phone: 301-619-6035

E-Mail: cavelle.williams@amedd.army.mil



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<http://mrmc-www.army.mil>

Reminder

*For all accidents, no matter how minor,
specific forms documenting the incident must be submitted to your Safety Office.*

Military: DA Form 285-AB-4

Civilian: DOL Claims Forms CA-1 or CA-2

All employees requiring medical attention must visit your local Occupation Health Clinic as soon as possible post mishap.