

Office Noise

Jim Gindlesperger

Is office noise simply annoying, or is it more serious? That's what Cornell University researchers wondered, and their studies have shown that even low-level noise increases stress, worsens certain medical conditions, and decreases motivation.

In their study, workers showed increases in stress hormone production as noise levels increased. Workers in noisier offices made fewer attempts to solve difficult tasks, indicating a decreased motivation. They also made fewer ergonomic adjustments to their work areas, increasing their risks for musculoskeletal injuries.

Interestingly, many of the test subjects did not feel the additional stress. This could be serious, because elevated stress hormones are known to worsen medical conditions such as high blood pressure and diabetes even when the stress is not felt.

Obviously, a completely quiet office is rarely possible, but there are some things we can do to control noise-related stress:

- ✓ Develop mutually agreeable rules for the use of radios, speaker phones, etc.
- ✓ Don't hold "mini-conferences" in hallways or outside someone's cubicle.
- ✓ Personalize your office space with plants, photos, or anything that relaxes you, making you less prone to stress.
- ✓ Don't react to noise by increasing your own noise level. A "fight fire with fire" approach only makes things worse.
- ✓ Create an ergonomically friendly work space. The EH&S web site has hints on how to do this, or a visit by a representative can be arranged.
- ✓ If practical, install drapes, carpet, or other noise dampening accessories.
- ✓ Develop good nutrition and sleep habits, which will reduce stress levels.

The bottom line is that we do have some control over the noise and stress levels in our offices if we all do our part.

Biological Safety Cabinets

Andrew Lawson

Biological Safety Cabinets (BSCs), which are classified as Class I, II, or III, can be an effective tool to minimize hazards when

performing tasks which involve biological materials such as: bacterial, viral and fungal agents; tissue and cell cultures; recombinant DNA; and all other biological material that have the potential to generate aerosols. BSCs can protect the experiments inside the cabinet from being contaminated with airborne particles (Class II and III cabinets), protect the researchers who are performing the work, and protect the surrounding laboratory from being exposed to airborne particles, if used properly. To utilize these cabinets properly the following steps should be taken:

- Ensure that your cabinet is certified annually by an outside contractor (Filtech 412-461-1400)
- Turn off UV lamp and turn the blower on and allow to run for five minutes prior to beginning work
- Disinfect the interior surfaces of the BSC using an iodophor compound, not alcohol, before beginning your work
- Put all items that you will be using in the BSC prior to beginning your work
- Keep all grills clear of items
- Keep clean items away from dirty items and work from clean areas to dirty areas
- Avoid sudden movements while working
- Moving in and out the cabinet should be done toward the cabinet and away from the cabinet, not side-to-side
- Avoid generating cross drafts around the cabinet

By performing these steps, the BSC will be more effective in serving its purpose.

Buyer Beware

Celia Rajkovich

Chinese Chalk is an illegal and dangerous pesticide that is often applied on floors and other surfaces to control crawling insects. It has the same appearance as safe chalk used in classrooms but this chalk contains chemicals that can cause health effects such as: vomiting, stomach pains, convulsions, tremors, coma, and death due to respiratory failure.

This product is imported from China and it is unregistered in the United States. Therefore its ingredients and packaging are unregulated and illegal. The colorful boxes

used to package these products have been found to contain high levels of lead and other heavy metals. Children in New Jersey, New York and Chicago have been poisoned by this product. It is found in immigrant-owned markets, larger thrift stores and flea markets.

Please ensure the children and pets in your home are safe from all hazardous items including: insecticides, rodenticides, herbicides, drugs and vitamins, soaps and cleaners, cosmetics, poisonous plants and exotic pets.

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Campus Power Failures

Mark Banister

As fate would have it, I completed my first version of this article just one day before a major power outage shut down power to ten campus buildings. The outage showed us that our plans for this type of emergency were good, though we did learn some things that will help us in future responses.

The most obvious thing to address is how we should react when a building's power goes out. If you are working with hazardous materials, and your fume hood or ventilation power goes out, you MUST stop your work immediately. Close all chemical containers or vessels and, when in a fume hood, pull the sash all the way down. After the power remains out for a minute or so, the emergency power in the building should come on. This emergency power will provide sufficient lighting for evacuation of the building (should it be indicated) and for the maintenance of fire alarm systems. It will NOT provide full power to the building or area.

It is best to remain in the building unless there is a compelling reason to leave (i.e., fire, emergency power does NOT come on, chemical fumes are building up from lack of ventilation, etc.) As soon as the university emergency responders have determined the best course of action, you will be provided with information on the situation

and instructions through the various departmental offices and building emergency coordinators. (For example, EH&S or the President's office may order evacuation of a building or buildings, if it felt that there is a safety risk in the occupants remaining.) This communication will work only if people remain in their areas.

A critical item for consideration is the effect a loss of power will have to your work or your work areas. All of the university community should examine their work and activities to identify possible deleterious effects a power outage would produce. In this last outage, we found an area where a loss of power would cause damage to an expensive piece of equipment. We have other areas where a power loss could produce dangerous chemical reactions, could damage sensitive chemicals or test organisms, or could allow fumes to build-up to hazardous levels. It is critical that all such areas be identified, preferably in advance, so that the proper steps can be taken. For example, they may be addressed by emergency power supplies.

If you have any operations where the lack of power may produce serious consequences (i.e., explosion, fire, release of hazardous materials), please indicate these to FMS at once (8-2910).

Avoid Hazards in the Lab

Jeff Harris

Here's a list of things to look out for in your lab. These are a combination of commonly found violations, bad practices, and general safety hazards that you should avoid.

Chemical Storage

1. Keep incompatible materials separated. Some examples: Oxidizers & Flammables and Acids & Bases need to be stored separately.
2. Dispose of old and expired chemicals. Many reagents have a long shelf life, but here's a list of some materials that you should definitely keep an eye on:
 - Ethyl Ether (forms peroxides which may become explosive)
 - Sodium Azide (polymerizes and may become energetic)

- Picric Acid (dries & crystallizes becoming shock sensitive)

Here are some other signs that chemicals are too old and should be disposed of:

- Nitric acid, if it has turned yellow.
- There is a build up of salts around the cap of any container.
- When the label on the bottle is too old to read or has fallen off.

Hazardous Waste

1. Always kept within secondary containment bin.
2. Containers capped when not being filled.
3. Waste containers must be clearly labeled. Inadvertent mixing of acid waste with solvent waste can lead to violent reactions.
4. Separate collection of Halogenated & non-Halogenated Solvents.
5. Bromine waste collected in containers of 1-quart or less.

Summer Intern

Jim Gindlesperger



Andrew Chen, who is entering his Junior year as a chemistry major, has joined the EH&S staff for the summer. He will be assisting us on various safety-related projects around campus and has already proven to be a valuable addition. If you see Andrew, please welcome him.

Gas Grill Safety

Jim Gindlesperger



Few things taste better than a meal prepared on the grill. However, liquid petroleum (LP) gas or propane, used in gas grills, is highly flammable. Each year many people are injured as a result of gas grill fires and explosions. Many of these fires and explosions occur when a grill is used after being left idle for a period of time or just after refilling and reattaching the grill's gas container. To reduce the risk of fire or

explosion, always perform the following safety checks:

- Regularly check the tubes that lead into the burner for any blockage from insects, spiders, or grease. Use a pipe cleaner or wire to clear blockage.
- Check hoses for cracking, brittleness, holes, and leaks. Make sure there are no sharp bends in the hose or tubing.
- Move hoses away from hot surfaces and dripping hot grease. If you can't move the hoses, install a heat shield to protect them.
- Check for gas leaks if you smell gas or when you reconnect the grill to the LP gas tank. If there is a leak, immediately turn off the gas and don't attempt to light the grill until the leak is fixed.
- Keep lighted cigarettes, matches, or open flames away from a leaking grill.
- Never use a grill indoors. Keep the grill at least 10 feet away from your house or any building. Do not use the grill in a garage, breezeway, carport, porch, or under a surface that can catch fire.
- Do not attempt to repair the tank valve or the appliance yourself. See a qualified appliance repair person.
- Always follow the manufacturer's instructions that accompany the grill.

Also, use caution when storing LP gas containers. Always keep containers upright. Never store a spare gas container under or near the grill or indoors.

While transporting LP gas containers, keep the container in a secure, upright position, and never keep a filled container in a hot car or car trunk. Heat will cause the gas pressure to increase, allowing gas to escape through the relief valve.

Grills manufactured after October 1, 1995, are required to have three additional safety features to eliminate leak hazards: a device to limit the flow of gas in the event of hose rupture; a mechanism to shut-off the grill; and a feature to prevent the flow of gas if the connection between the tank and the grill is not leak proof. Make sure your grill has these safety features.