



ARCHDIOCESE OF INDIANAPOLIS

Safety and Loss Control News

June 2017

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Archdiocese of Indianapolis • (317) 236-1558

Prepared by Gallagher Bassett Services, Inc.

Tips for Preventing Lightning Strikes

Lightning, one of nature's most beautiful and powerful phenomena, is also one of its deadliest. With the exception of flash floods, lightning kills more people than any other weather hazard in the United States. In addition to the threat of life, lightning is one of the primary causes of fires and damage to electrical equipment in parish buildings. Lightning has been known to account for up to thirty percent of all parish fires in the United States. The fire hazard can be reduced by the proper installation of lightning protection systems. These systems capture a bolt about to strike, and direct it through a cable, harmlessly to the ground, thereby protecting the structure from damage.

How Can Fires and Equipment Damage Caused by Lightning be Avoided?

Install an effective lightning rod system.

This will provide both an attractive target for the lightning and a path of least resistance for the current to take as it seeks its ultimate decision—the earth.

In a properly installed system, a rod will only attract lightning that comes into the area to be protected, like a parish steeple or roof. When the random motion of the lightning gets into a zone around the lightning rod, it begins to “see” the rod and is attracted to it. The zone of protection, upon which the design of the system is based, is meant to envelop the building. In a properly designed system, the “attraction” provided by the lightning rod is not enough to deter a lightning bolt heading for a neighboring structure.

Be prepared for the cost of installation.

Generally, the cost of a lightning protection system starts at about \$2,000. In a typical installation, lightning rods or “air terminals” as the experts call them are installed on the roof of the parish as handy targets for lightning bolts looking for a landing zone. The “terminals” are brass or copper, about 10 inches high, and are set about 20 feet apart. The number of terminals are then connected to one another and to any metal on the roof or steeple by a cable that can be inconspicuously rooted between the gutters or eaves. The cable is then “grounded” by two or more metal rods driven at least 10 feet into the earth.

Provide an effective maintenance and inspection program.

It is important that the electrical ground is maintained over the years. Over time, the cable or grounding rods may deteriorate to the point where the path to the ground is affected. Under these conditions, the system ceases to work at all or at best, attracts the lightning bolt, but fails to complete its mission. As an example, lightning traveling down the cable of a faulty system has been known to change its path, passing through wood or some other combustible material offering a better path to ground. The resulting fires can be as serious as those occurring in unprotected buildings.

Protect against the added threat, electrical surges.

Twenty years ago a typical parish might have had a few appliances in addition to



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Tips for Preventing Lightning Strikes

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lightbulbs. Now, it's common to find phone systems, computers, television, and security systems in place. The damage that can occur to these expensive electronic systems can be phenomenal considering that the current in a lightning bolt can be as high as 40,000 amps. An effect even more formidable when delivered in the short time span of 1/10,000 of a second. This surge of concentrated energy that can split an oak tree, or pulverize a chimney, can easily destroy the hard drive of a computer.

Even if no fire damage takes place, thousands of dollars in electrical equipment can still be destroyed by rapid spikes of electrical current. To help prevent this possibility, experts strongly recommend electrical surge protection as a required supplement to any lightning protection system installed.

The best protection against lightning damage is unplugging electrical equipment when not in use if possible. Surge protectors are not able to prevent damage to electrical equipment when a direct lightning strike occurs to a power source or telephone equipment.

Additional Information

The brochure *Home/Family/Property Lightning Protection and a list of "Dealer Contractors"* for lightning protection equipment may be obtained by sending a request with a self-addressed, stamped envelope to:

Lightning Protection Institute
25475 Magnolia Drive
Maryville, MO 64468
Toll-free: 800-488-6864, or download at:
www.lightning.org

Protecting Your Property from Power Surges

Power surges are responsible for causing hundreds of millions of dollars in property damage each year in the United States. When a power surge occurs, it may instantly overload and short out the circuitry of electronics that are plugged into a wall outlet or unprotected power strip. Over time, power surges can cause cumulative damage to electronic property, incrementally decreasing the lifespan of televisions, computers, alarms and anything else that is plugged into the outlet. Knowing the ways that you can protect your property will help save money and prolong the life of electronic equipment.

Protecting Your Property

Surge protectors are an inexpensive device used to protect electronic equipment from power surges. Although they are not designed to stop high-powered surges such as lightning strikes (there are a number of good lightning protection systems on the market that can help your organization address this exposure), they are valuable to reducing surges that may be caused by the local electric company and from the constant switching on and off of high powered electrical devices (refrigerators, air conditioners, elevators, etc.) within the facility. Some of the protective devices to consider include:

Point-of-Use Surge Protection Devices (SPDs)

These devices, combined with a good grounding system, can protect electronic and electrical appliances from common power surges. A surge protection device does not stop a surge, but rather diverts it to the ground. These devices resemble a common power strip. (Keep in mind that not all power strips are equipped to provide surge protection.) Prior to purchasing a surge protection device, make sure it states that it provides surge protection. There are also special outlets that can be installed that provide power surge protection. These types of outlets are good for locations where there isn't room for a plug-in surge protector, such as near a countertop or microwave oven.

Point-of-Use Devices Combined with Other Devices

Combining a point-of-use device with another device such as a service entrance surge protector or an electrical panel surge protector provides two tiers of protection against power surges.

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Trampoline Risks Outweigh Fun

Helping children and teens grow in faith is a vital mission of every parish. Youth group meetings, Bible study and special activities are all important elements offered by parishes to help children build a life-long relationship with Christ. When it comes to planning special activities for parish youth, leaders and staff directly involved with youth ministry have a higher duty of care as they are responsible for the health and safety of children during parish-sponsored activities. With this in mind, it is important that special events are planned with consideration to the safety of every child involved.

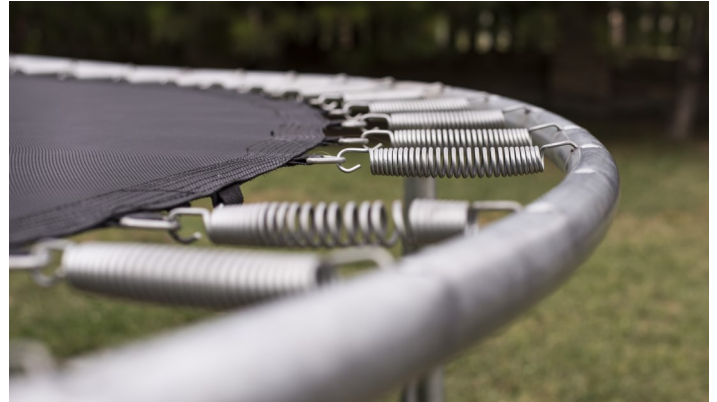
Trampolines are hugely popular with both youth and adults. Trampoline use has increased tremendously over the last decade, mostly due to their easy accessibility and affordability. Many households have trampolines in their backyards, providing hours of fun for children and adults. The recent emergence of commercial indoor trampoline parks has also increased the widespread popularity of trampoline activities. A commercial indoor trampoline park is equipped with trampoline surfaces mounted on the floors and walls of the facility. Jumping, performing acrobatic stunts, and the option of playing dodgeball games are just some of the entertainment options offered by these facilities.

While trampolines are a lot of fun, they are dangerous and considered a serious injury hazard. Even with safety rules in place, injuries and death still can occur from trampoline use. The U.S. Consumer Product Safety Commission (CPSC) estimates that in 2010 there were 92,159 hospital emergency room-treated injuries associated with trampolines. It is also estimated that nearly two-thirds of trampoline injury victims were children 6 to 14 years old.

Most trampoline-related emergency room visits are for treatment of injuries from trampoline jumpers colliding with one another, falling on the trampoline springs or frame, falling or jumping off the trampoline or attempting somersaults and stunts. Crippling injuries and/or death, including paralysis from spinal cord injuries have also occurred due to falls off of the trampoline. In addition, more than half of trampoline injuries occur when two or more persons are using the trampoline at the same time.

Forty percent of all trampoline-related injuries are sprains and strains, most frequently affecting the leg or foot. Nearly one-third of injuries are fractures, many of which require surgery. Younger children appear to be at the greatest risk for fractures, while older children often suffer sprains and strains. Head and neck injuries account for approximately 10 percent of injuries associated with the trampoline. Fifteen percent of head injuries involve fractures, concussions and closed-head trauma. Deaths from trampoline use are rare (on average, less than one per year).

Due to the injury risks associated with trampolines, the American Academy of Pediatrics has recommended that trampolines never be used at home, on playgrounds, in physical education classes, or for athletic competition. The U.S. Consumer Product Safety Commission has stated that children under six years old should not use trampolines in any setting, due to their immature motor skills.



Trampoline injuries don't just happen to children. In March of 2012, New York Yankees baseball player Joba Chamberlain, underwent surgery to repair damage to his ankle, which happened while jumping on a trampoline with his 5-year old son. Following the surgery, Chamberlain spent six weeks in a cast.

The American Academy of Orthopedic Surgeons (AAOS) supports the position that trampolines pose a high risk of injury and should not be used in home environments or outdoor playgrounds. John Purvis, M.D., spokesperson for the AAOS states:

"Although trampolines can be fun for both kids and adults, they pose a high risk for injuries, especially when two or more people jump at one time. Orthopedic surgeons recommended that trampolines not be used in home environments or in outdoor playgrounds because of the high risk of injuries from this activity."

The risk of injury, permanent paralysis and death from trampoline use far outweigh the few moments of fun this activity offers. Trampolines pose a serious injury hazard for those who use this type of recreation. It is strongly recommended that dioceses prohibit the use of any type of trampolines within their facilities. In addition, field trips or planned activities involving Trampoline Parks should be prohibited as well.

To view the American Academy of Orthopedic Surgeons (AAOS) position statement on trampoline safety, log on to www.aaos.org.

Additional resources include:

- U.S. Consumer Product Safety Commission—<http://www.cpsc.gov>
- American Academy of Pediatrics—<http://www.aap.org>
- Foundation for Spinal Cord Injury Prevention—<http://www.fscip.org>

Article sources:

Grace Rattue. (2012, March 28). "Trampoline Advice Issued by Orthopedic Surgeons." *Medical News Today*. Retrieved from <http://www.medicalnewstoday.com/articles/23497.php>.

Foundation for Spinal Cord Injury Prevention, Care and Cure, "Trampoline Injury Facts." <http://www.fscip.org/tramp.html>

U.S. Consumer Product Safety Commission, "CPSC Safety Alert—Trampoline Safety." Publication 085 R042012, <http://cpsc.gov/cpscpub/pubs/085.pdf>

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If there are any subjects you would like to see addressed in this newsletter, or questions about a topic presented, please contact Ms. Amanda Weller, Gallagher Bassett Services, Inc., 2850 Golf Road, Rolling Meadows, IL 60008, Telephone: 815-236-5170, Email: Amanda.weller@mjgsolutions.net.

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Protecting Your Property from Power Surges

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- **Service Entrance Surge Protection Devices:** These devices mount in or onto the main electrical panel or at the base of the electric meter. It protects items such as motors, lights, outlets, light switches, and all other “hard wired” items within the facility that don’t plug into an electrical outlet and can’t be connected to a point-of-use surge protection device. If a power surge is created by a lightning strike, the service entrance surge protection device reduces the power surge to a lower level before it gets to the point-of-use surge protection device. Consult an electrician for advice on how to install this type of device.

Additional Tips

- Prior to purchasing surge protectors, make sure they are listed as UL Standard 1449. This is a national benchmark that indicates the product has been thoroughly tested.
- Choose a point-of-use surge protector that has an indicating light and/or audible alarm that alerts you to when it needs to be replaced. Check the surge protector periodically to make sure it is working properly.

- Select a surge protector that comes with a manufacturer’s warranty. Some warranties cover only the device; others also cover any damaged equipment connected to the device.
- Make sure the outlet that the surge protector device is plugged into is properly wired with a proper ground.
- Do not plug surge protectors into extension cords, another surge protector or into circuits protected by a ground fault current interrupter (GFCI).
- If the surge protector smells hot or burned, immediately discontinue using it.
- Make sure that all of the appliances you are using on the same electrical circuit are compatible. For example, don’t use a hair dryer on the same breaker or circuit as your computer.
- Reserve a separate circuit for sensitive electronics such as computers.
- Turn off and unplug equipment from the wall if you suspect that a large surge might be coming, such as a lightning strike during a thunderstorm.

-Information excerpted from: “Protect Your Property from Power Surges,” by Staff Writer State Farm Employee, 2/7/11; “Protecting Commercial Facilities from Power Surges;” and “Using Point of Use Surge Devices Correctly.”