

risk reporter

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Injury rate climbs with unsafe ladder usage

From repairing a roof to changing a light bulb, everyday maintenance at a place of worship requires frequent use of a ladder. However, this essential piece of equipment also possesses serious risk of injury. The *American Journal of Preventive Medicine* reports, on average, 135,000 people have injury-causing accidents involving ladders each year.

Falls cause the majority of ladder injuries. Consider these examples: a worship center volunteer in Wisconsin fell from a 16-foot extension ladder when it slipped, resulting in head injuries, broken bones and nerve damage. In Oklahoma, a deacon brought his own ladder to church to work on a sign; the ladder broke, and he sustained a broken pelvis from the fall.

Proper safety precautions, including ladder selection, maintenance and usage, can help reduce the risk of injury.

Choose wisely

"When selecting a ladder, consider the type of work it will be used for, the weight it will carry and the general condition of the ladder," said Frank Hardy, owner of Fish Window Cleaning in O'Fallon, Mo.

Ladders are constructed under five duty ratings:

- **Type IAA** – Industrial: a special heavy-duty ladder with a load capacity of 375 pounds
- **Type IA** – Industrial: an extra-heavy-duty ladder with a load capacity of 300 pounds
- **Type I** – Industrial: a heavy-duty ladder with a load capacity of 250 pounds
- **Type II** – Commercial: a medium-duty ladder with a load capacity of 225 pounds
- **Type III** – Household: a light-duty ladder with a load capacity of 200 pounds

The ladder should be tall enough to reach three feet above the highest point accessed by the ladder, such as a rooftop. A congregation might require a combination of straight, extension and stepladders.

Ladders are constructed from three common materials: metal/aluminum, wood and fiberglass.

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Keep the following information in mind when selecting a material:

- Metal ladders should not be used near power lines or while doing electrical work. Look for slip-resistant rubber or plastic feet and slip-resistant steps.
- Wood ladders require refinishing. Avoid wood ladders with large knots. Steps should be reinforced with metal rods or braces securely attaching the step to the side rail.
- Fiberglass ladders might have loose or missing components, cracks and chips.

In general, if purchasing a new ladder, a fiberglass model is recommended over metal or wood.

Maintain properly

Proper maintenance will help protect and prolong the life of a ladder.

"We inspect our ladders before each use and clean them thoroughly after," said Nealon Thompson, deputy fire chief for the Apple Valley Fire Department in Minnesota. "I also recommend a more thorough monthly and quarterly ladder inspection."

During an inspection, ladders should be clean and free from dirt or grease that might conceal defects.

Wood ladders should be protected with a clear sealer, such as varnish, and should not be painted because paint could hide defects. Look for splinters, broken rungs, cracks, rot, loose joints and hardware in poor condition.

Inspect metal ladders for rough burrs and sharp edges. Look for faulty welds, cracks and loose joints and bolts. Replace worn or frayed ropes and make sure the hooks and locks are in good condition.

Fiberglass ladders should have a surface coat of lacquer maintained. Look for any cracks, chips, missing components and loose joints and bolts.

"When a defect is found on a ladder during inspection, we clearly mark the ladder with a red tag and bring it into the main office for further evaluation," Hardy said. "The ladder is either repaired or destroyed."

Store ladders in their closed position in a sheltered, well-ventilated area. Straight and extension ladders

should be stored horizontally on racks or hooks with support points at the top, middle and bottom of the ladder.

Use carefully

Offer training for maintenance staff and volunteers who frequently use ladders.

Ladder setup

"When setting up a ladder, select a site with solid, even ground," Thompson said. "Avoid ice or slippery, wet surfaces. Then look for and avoid any overhead obstructions, especially power lines."

In addition, a ladder should not be placed in front of a door that is not locked or blocked. Avoid using a ladder during inclement weather conditions.

To set up an extension ladder, raise it to the desired height and properly engage the locks on both sides of the ladder. Set up straight and extension ladders using the one-to-four ratio. The base of the ladder should be spaced one foot away from what it leans against for every four feet in height to the point where the ladder rests.

Never use a stepladder as a straight ladder. When setting up the ladder, make sure its legs are fully extended with the braces locked.

Ladder usage

"When using a straight or extension ladder, we recommend having someone at the bottom of the ladder to keep it steady for the person climbing," Thompson said.

"Face the ladder when climbing or descending and use both hands," Hardy said. "We require our employees to carry equipment and tools on belts in order to keep their hands free."

Use a hanger or shelf for paint cans and other tools. Be sure the soles of shoes are clean and dry.

"We enforce the 'three-points' rule when working on a ladder," Thompson said. "The climber must maintain three points of contact at all times. This means three out of their four limbs must be touching the ladder."

"The body of the person working on the ladder should stay centered between the rails of the ladder," Hardy said. "Do not lean to one side to reach an area; get down and move the ladder into appropriate position."

Do not climb higher than the third rung from the top on straight or extension ladders or the second step from the top of stepladders. Do not leave a raised ladder unattended.

Scaffolding is not for amateurs

Scaffolding should be assembled by an experienced person. The footings should be sound; do not set scaffold footings on soft or frozen ground or unstable objects, such as loose bricks. Inspect the scaffolding prior to each use. Guardrails must be attached on all open sides and ends; use a toe board to prevent items from falling off the scaffold. Fall protection devices, such as a harness, should be used on scaffolds elevated 10 feet or more.

- **For more information**, reference the Church Mutual Risk Alert for Ladder Safety available at www.churchmutual.com; select "Safety Resources" and click on "Risk Alerts." A Church Mutual video, "Preventing Workplace Injuries Is No Accident," also is available at the Web site; select "Safety Resources" and click on "Videos."
- **For more information**, visit www.osha.gov.



Managing Your Risks

Volunteers must be willing and able

Aside from faith, many pastors will tell you the biggest asset their religious organization has is volunteerism. Volunteers clean the sanctuaries, assist with office functions and help with maintenance projects.

A wonderful fact about volunteers is they are willing to do just about anything. Unfortunately, they are not always able. When it comes to maintenance projects, such as those that involve electricity, the use of power tools or the need to be on the roof or in the rafters, politely declining the offer of help from those who overestimate their abilities is required.

A couple of months ago, there was a sizeable amount of media attention provided when Max McGee, the former Green Bay Packer, died after falling off his roof. Many questioned why the 75-year-old was on his roof removing leaves from his gutters.

There was little attention given to these events:

- A retiree volunteered at his church to make safety enhancements suggested by the fire marshal. This required additional circuits be added to the breaker box located in the attic. The volunteer was electrocuted by live wires.
- A volunteer was cutting a limb from a tree while standing on a 16-foot ladder. About two-thirds of the way through the cut, the limb swung down, hitting the ladder and knocking the man to the ground. He sustained a concussion and cervical fractures that required spinal fusion surgery.
- A 71-year-old volunteered to caulk along the eaves of his church. He was working alone. He was found lying on the ground next to the ladder with a fatal head injury.

Before quickly accepting someone's help, think about the task at hand and make the determination if the volunteer is your best option.

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Risk Control Manager



seasonal spotlight winter

Plan now for a spring HVAC tuneup

A heating, ventilation and air conditioning (HVAC) system is the key element for indoor climate control and air quality. By circulating air throughout a building, an HVAC system keeps congregations cool in the summer and warm in the winter and provides clean air by cycling out odors, bacteria and other pollutants.



As a vital component to the comfort and air quality within a place of worship, it is important to perform routine HVAC maintenance to ensure the equipment will operate properly. This includes a professional full-equipment inspection every year.

"The best scenario is to have your heating system checked in the fall and the air conditioning checked in the spring," said Mike Smith, service manager for Hannabery

HVAC, based in eastern Pennsylvania. "Annual servicing includes cleaning the system, checking for any problems or potential problems and adjusting for peak efficiency.

"If preventive measures are taken ahead of time, the HVAC equipment will operate more effectively," Smith said. "In addition, clean equipment requires less electricity to operate and keeps repair costs to a minimum."

One item that most maintenance staff can handle, but many neglect, is changing the air filter.

"One of the most basic and important services to perform is air filter maintenance," said Matt Ashwood, president and CEO of Bonded Filter Company, a professional air filter sales and service organization headquartered in Nashville, Tenn. "Changing the HVAC air filter keeps the dirt out of expensive equipment and prevents equipment breakdowns."

As a filter sifts particles out of the air, it can become loaded to excess if not properly monitored. The filter becomes deformed, unloading dust back into the building. Filters should be monitored and changed every 90 days, with more frequent monitoring during the spring season.

"As trees begin to bloom in May, there is a lot of pollen in the air. If the filter hasn't been changed in quite some time, the equipment will shut itself down," Ashwood said.

- **For more information**, reference the Church Mutual Risk Alert for Heating Boiler Inspection, available at www.churchmutual.com; select "Safety Resources" and click on "Risk Alerts." Hartford Steam Boiler provides free boiler inspections for Church Mutual customers.

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A Perspective

Aerial lifts are frequently used to perform work in areas that cannot be accessed using a ladder. The high ceilings of worship centers and gymnasiums provide an especially difficult obstacle for seemingly simple tasks, such as changing a light bulb. Aerial lifts can offer a safe and simple solution to this obstacle. However, when working with an aerial lift, awareness of the hazards involved is important.



Risk Reporter spoke with Chris Kibler, director of safety for Atlanta-based Home Depot, about the possible risks encountered when using lift equipment and what steps they take to help eliminate these risks.

Risk Reporter: Do you require any special training for employees to use lift equipment?

C. Kibler: All employees are required to undergo training in order to use our power lift equipment. The two-part course consists of a one-hour electronic training session followed by a hands-on session with a designated trainer for each piece of equipment.

Risk Reporter: Is there any special safety equipment that employees must use when operating a lift?

C. Kibler: We require that any employee operating a lift wear a full body harness. Also, because our lifts consist of an open platform with no guardrails, we require employees to tie-off to the equipment using a retractable lifeline. The lifeline includes 20 feet of strapping that is rolled up into a mechanism; it will lock in place if jerked in a falling motion.

Risk Reporter: What other in-store precautions do you take when using lift equipment?

C. Kibler: When we use the equipment in stores during customer hours, a spotter must be present. A spotter is an employee on the ground level with flags so customers are aware of the equipment. Patrons are not always cognizant of their surroundings, and although we always have our employees' safety in mind, it is important that our customers are aware of potential dangers as well.

We also implement a "Zone of Safety" around any moving piece of lift equipment, which is an area 10 feet in the direction of travel and 4 feet on either side, where customers are not allowed. Operators are instructed to immediately stop if anyone enters that zone. In addition, we use barricades to block off an aisle from customers if a lift is being used.

- **For more information** regarding aerial lifts, reference the Church Mutual Risk Alert for Personnel Aerial Lifts available at www.churchmutual.com; select "Safety Resources" and click on "Risk Alerts." Or visit the OSHA Web site at www.osha.gov for guidelines and regulations.

Tips for aerial lift safety

- Always use equipment as intended, following operating and safety guidelines
- Perform an inspection of the lift prior to each use
- Review and follow OSHA guidelines for equipment operation
- Establish an accident protocol
- Use all safety equipment when lift is in operation, including outriggers
- Keep the equipment secured to prevent unauthorized use