Earth, Wind, and Fire: Managing Risk in Today's Schools Part 1: Fire!

By Richard Weeks, RSBA

Upon returning from duty in Iraq, a U.S. Marine recited a story to his parish priest. The Marine was based at a remote site outside Baghdad in 2008 and was assigned to help rebuild roads, bridges, and other infrastructure. Each morning as his unit left the base, they would pass a solitary sign on the side of the road just outside the gate. Placed there by the base commander, it imparted his last words of advice to the Marines each day. The message on the sign was succinct: Complacency Kills.

If one word can characterize what may be troubling about risk management in today's schools, it is *complacency*. We take for granted the improbability that our school buildings have drinking water loaded with contaminants, contain air quality that imperils the health of staff and students, or are in danger from fire or severe weather.

Complacency is a negative behavior that could entrap us into letting our guard down. In *The School Business Administrator*, authors Kenneth Stevenson and Don Tharpe write: "A successful school business administrator has a probing and questioning mind. The professional business administrator has the viewpoint of a scientist in running the administration, constantly appraising conditions. He/she is not content with existing conditions, but

seeks a better answer or a better way of doing things" (Stevenson and Tharpe 1999, p. 97).

In that vein, this article, the first of two on risk management in today's schools, looks at fire.

Sounding the Alarm

According to a survey by the Federal Emergency Management Agency, a staggering 44,100 fires were reported on American school properties during 2003–2005 (FEMA 2007). At middle and high schools, 47% of fires were incendiary or suspicious in origin, and 25% of fires at kindergarten and elementary schools were attributed to cooking and open flames. School heating sources caused 7% of fires, and 6% were blamed on electrical distribution.

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The average financial loss per fire was $14,948, invariably paid by the school's insurance carrier, less the deductible. There were a reported 193 injuries at these fires and, fortunately, no loss of life.

Throughout much of the world, school fires are fairly common due to faulty structures, negligence, and arson as a means of political revenge. The last major American school fire recently observed its 51st anniversary. Shortly before classes were to be dismissed on Monday, December 1, 1958, fire broke out at the foot of a stairway in Our Lady of the Angels School in Chicago, Illinois. Ninety pupils and three nuns perished when smoke, heat, and fire cut off their normal means of escape through open stairways and corridors. Seventy-seven were seriously injured.

To the American public, the tragedy was as riveting as the 1999 Columbine High School shootings two generations later. Although much has changed since that fire—such as the adoption of building codes that require fire-warning and sprinkler systems—many management lessons should be revisited. It is true that both human nature and fire do not change. This article uses that sad December day in Chicago as a framework to better understand and manage the peril of fire.

Everyone Has Responsibilities

As recorded in the National Fire Protection Association investigation report two months after the fire, "It is a cardinal rule of life safety that at the first indication of fire (which is usually smoke) all occupants of the building and the fire department should be alerted simultaneously" (Babcock and Wilson 1959, p. 175). Smoke was first reported to the teacher in Room 206 by one of her students at 2:20 p.m. The teacher across the hall in Room 205 proceeded to the principal's office. Our Lady of the Angels had a rule that only the mother superior could activate the fire alarm system. Once at the office, the teacher discovered that the mother superior was teaching class in another part of the school due to another teacher's absence. It is estimated that 13 minutes elapsed between the first smell of smoke and activation of the school's fire alarm. The teacher decided to pull the alarm herself and reached up seven feet to activate the manual device. She flicked the switch several times before the alarm activated. No one at the school ever telephoned the fire department (Babcock and Wilson 1959).

Unfortunately, some school principals today micromanage their schools, not unlike the mother superior. Yet everyone in a school has the responsibility to take action if there is suspicion of fire.

Younger students can alert older students and staff who can reach out to pull an alarm. (When in doubt, it's best to pull the alarm and sort out the matter with public safety officials later.) Personnel should contact the fire and police departments, as well as the district superintendent's office to report a possible fire. Despite annual inspections of your alarm systems, don't assume that the decades-old systems are connected or functional to those departments. Don't assume that they were installed correctly or are working in new school buildings.

Conduct fire drills in all types of weather, randomly throughout the days of the week, requiring students to become familiar with the escape routes from all areas of the school. Post graphic, schematic drawings of the floor plans and escape patterns on walls throughout the building at the height of the students in the school.

Fire prevention should be part of a broader program of a school's preparedness, with safety plans in place for everyone's reference. The Department of Homeland Security offers a program that can train and certify school personnel in fire protection safety techniques. Visit its Website (www.dhs.gov) for information.

Maintaining Your Fire Suppression Systems

The first commercially successful closed sprinkler system was invented in 1872 by Henry S. Parmelee to protect his piano factory in New Haven, Connecticut. A group of insurance companies joined together in 1896 to form the National Fire Protection Association and wrote the standard code for fire protection sprinkler systems that is used today (Grant 1996). It took the disaster at Our Lady of the Angels to compel states to impose that code requirement on school buildings.

Despite the economic downturn, school districts cannot allow their annual maintenance program for fire alarm and fire suppression systems to lapse. A report by a

certified inspector should indicate checks on the pressure gauges for water flow, water-flow switches, and availability of water in the lines. Access to the outside sprinkler water intake pipes should be clear of vehicles, dumpsters, and snow piles. If there were a catastrophic loss of water in the school, the fire department would attach its water tank truck to these pipes to ensure that adequate water is flowing to the system to suppress a fire.

Many individuals are responsible for ensuring that these systems function. When building new schools, the architect works with a fire sprinkler contractor, who in turn employs a fire protection engineer to design the appropriate systems, estimate project costs, handle the procurement for the systems, and work with fire sprinkler fitters to install them correctly. When it is time for your school district to accept the newly installed systems, your municipality's building inspector and the fire department's systems inspector will be present.

So who inspects the fire system maintenance contractors who issue your annual inspection reports? If you have any questions regarding the vendors or the reports, contact your state fire marshal's office. It will be able to provide you with information on the contractor's service records, references, and licenses.

Who's Watching the Stove?

A cafeteria worker staring at a pot of water heating on a stove doesn't make it boil any faster. By not keeping a watchful eye on the open flame, her negligence could burn down the school.

According to the Federal Emergency Management Agency, carelessness contributes to 25% of fires at elementary schools. Those fires don't always start in kitchens; there are open flames at school assemblies, in theater productions, in science labs, and on birthday cakes.

School business administrators must maintain hood suppression systems that are installed in areas of the schools where open flames are commonly used, typically kitchen stoves and science laboratory demonstration tables. The systems use a chemical-based solvent to extinguish fires. The "hoods" of the systems should be routinely cleaned to remove grease. An annual report will confirm that the solvent tank is adequately full to suppress a fire.

Being Proactive

Your local fire department will routinely visit your schools and issue compliance reports regarding fire safety in and around the properties. Here are some frequent concerns that it will expect you to correct:

- Trash and other flammable debris that are stored outside and adjacent to the buildings that could easily be ignited.
- Dry brush and wood too close to school buildings. "Buffer zones" need to be maintained to prevent fire from leaping onto the buildings.
- Electrical outlets overloaded with multiple appliances, computers, and space heaters. Hire an electrician to provide more electrical service to the buildings and to distribute it more evenly throughout the classrooms.
- Excessive paper displays on bulletin boards in classrooms and hallways. Many states now require displays in school hallways to be enclosed in glass cabinets.

School business officials cannot afford to be complacent when it comes to fire safety. Take action before a spark sends your students' education up in smoke.

Next month we'll look at the school environment.

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