Oregon State Fire Marshal · 2004 Annual Report

School fires

OSFM published comprehensive data about fires in schools for the first time in a 1990 report about juvenile firesetting in Oregon and again in 2000. Staff have continued to track school data and, recognizing the size of the problem, have worked with partners to develop informational campaigns. These efforts are described in more detail in the Highlights section of this report.

In 2004, the United States Fire Administration presented national statistics about fires in schools for the first time. Oregon and national data show similar patterns. National data cover 2002 and Oregon data cover 2000 through 2004 in order to have a large enough sample for purposes of comparison.

Oregon findings (2000-2004)

- 33.5 percent of all school structure fires and 25.3 percent of middle and high school structure fires were incendiary or suspicious. Youths are involved in one out of every three of these fires.
- The leading area of fire origin was the school lavatory.
- School fires peaked in July, increasing at the end of the academic year and declining at the beginning. The month of December shows the lowest number of reported fires.

There were an estimated 1,448 fires at non-adult schools from 2000-2004, causing $16.1 million in property damage and nine civilian injuries. Of these, 578 were structure fires.

Nearly a quarter of school structure fires were confined to the object where the fire started, such as a fire confined to a trash can (22 percent) or a small cooking fire (3 percent).

The majority of school fires occurred outdoors on school property, including open areas or fields (21 percent), trash fires (5 percent), vehicle fires (3 percent) and other outdoor fires.

National findings (2002)*

- 37 percent of all school structure fires and 52 percent of middle and high school structure fires were incendiary or suspicious.
- The lavatory was the leading area of fire origin.
- Fires peaked in July, driven by a sharp increase in fires at elementary schools. Elementary, middle, and high schools had above average fire incidence in the spring and fall. Fire incidence was lowest during November through Februrary.

There were an estimated 14,300 fires at non-adult (day care through high) schools in 2002, causing $103.6 million in property damage and 122 injuries. Six thousand (42 percent) were structure fires.

Nearly half of school structure fires were confined to the object where the fire started, such as a small cooking fire (17 percent) or a fire confined to a trash can (26 percent).

The majority of school fires occurred outdoors on school property and include trash fires (23 percent), other outdoor fires, including open fields or woods (18 percent), and vehicle fires (7 percent).

Fatalities from school fires are rare, but injuries per fire were higher in school structure fires than non-residential structure fires on average.

Educational institutions are governed by strict inspection and fire and life safety codes. Most schools built since the late 1970s are required to have sprinkler and other protection systems. This is a likely explanation why no deaths from school structure fires were reported in these last five years.

**School Fires*, Topical Fire Research Series, Volume 4 - Issue 6, December 2004, FEMA/USFA/National Fire Data Center (using data from NFIRS).

School fires - comparison overview	Oregon (2000-04)	National (2002)
School type - Middle, Junior, High	49%	48.3%
School type - Kindergarten or Elementary	40%	36.9%
School type - non-adult other	7%	6,5%
School type - Preschool or day care	4%	8.4%
Incendiary/suspicious all school structure fires	33.5%	37%
Incendiary/suspicious middle & high school structure fires	25.3%	52%
Bathroom leading area of origin, structure fires	38%	23%
Injuries/1,000 school structure fires	10.4	22.0
Fatalities/1,000 fires	0.0	0.0
Fires at non-adult schools	1,448	14,300
Property damage	$16.1 million	$103.6 million

School fires in Oregon - 2000-2004 data

As shown in the table below, the highest percentage of school structure fires originate in the bathroom. Forty-nine percent of bathroom fires are incendiary or suspicious and are typically set in the trash can. Bathrooms present youths with a place to set a fire without having constant adult supervision.

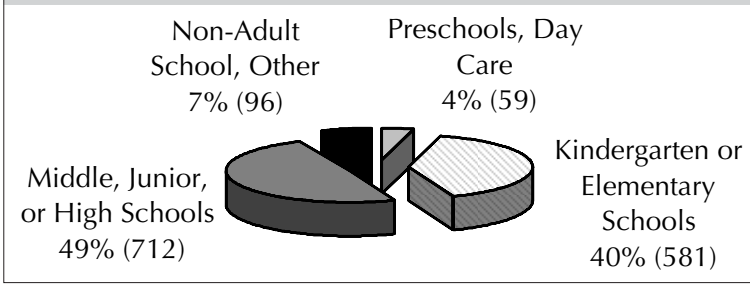
Exterior wall surfaces, and hallways and corridors are the second leading area of origin for school structure fires. Open areas or fields are the leading area of origin for all school fires.

Leading areas of origin of school fires

Structure Fires		All School Fires	
Bathroom*	38%	Open Area, Field	23%
Exterior Wall Surface	5%	Bathroom	17%
Hallway, Corridor	5%	On or Near Roads/Parking Lots	7%
Kitchen	4%	Trash/Rubbish Area	6%

*One out of five bathroom fires are in trash cans.

All school fires by school type



R Loss rates for school structure fires

Civilian injuries/1,000 fires	10.4
Fatalities/1,000 fires	0.0
$ Loss/fire	$27,375
Total estimated dollar loss for 2000-2004	$11,032,125

Causes of school structure fires The leading cause of school structure fires, on average, was incendiary/suspicious activity. Arson fires accounted for 33.5 percent of all school structure fires and 25.3 percent of middle and high school structure fires. The data show that youths were involved in one out of every three incendiary/suspicious school structure fires.

The greatest percentage, 49 percent, of fires occurs in middle and high schools.

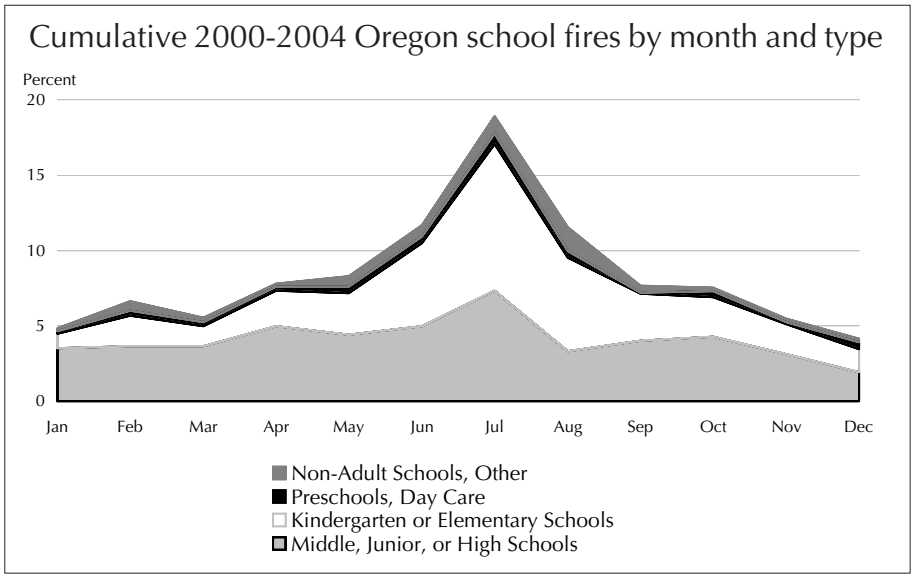
Leading causes of school structure fires 2000-2004

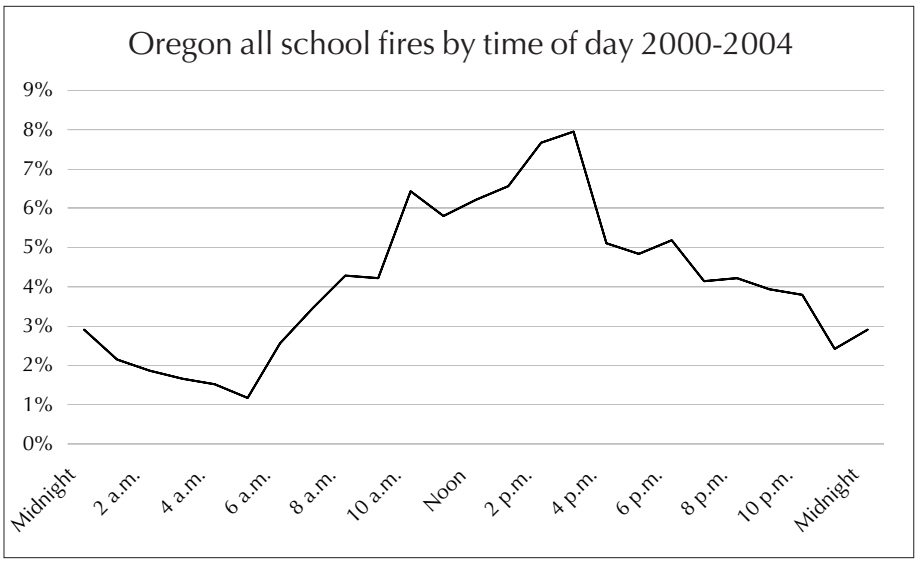
Ignition Factor	Preschools Day Care	Kindergarten or Elementary Schools	Middle, Junior, or High Schools
Reckless Act	0.5%	1.0%	1.6%
Operational Deficiency (Human Caused)	0.7%	0.5%	2.1%
Mechanical Failure, Malfunction	1.4%	2.1%	2.2%
Misuse of Material (existing heat source)	0.2%	1.9%	3.6%
Misuse of Heat Source	1.4%	1.6%	8.0%
Incendiary/Suspicious	0.0%	8.0%	25.3%

When fires start July is the peak month for school fires. Elementary schools had above-average fire incidence during June through August. Over half of all fires in elementary schools occured in these months. Middle and high schools had above-average incidents during April through October. Fire incidence was at its lowest in December.

Seventy-five percent of school fires occurred during the school week and 25 percent occurred on weekends. Fifty-four percent of fires occurred between 8 a.m. and 5 p.m., the hours students are most likely to be in school. Forty-one percent occurred during a six-hour peak time interval, between 10 a.m. and 4 p.m.

Like most fires, those in schools are largely preventable through increased supervision, education and technological innovation.





School arson campaigns

In 2003, the Fire Marshals Round Table hosted a panel discussion with the Oregon School Board, Department of Education staff, law enforcement and school safety officers to discuss the school arson problem.

In 2004, OSFM staff consulted with two insurance carriers who were concerned about the rising costs of property loss due to fires in schools they insured. Through a proactive partnership between the fire service, the school community and private industry, two new and innovative arson prevention programs are now available.

Scott Neufeld, Risk Consultant, Special Districts Association of Oregon

Special Districts Association of Oregon (SDAO) insures both school and fire districts for property loss. They awarded $500 to thirty fire departments as an incentive for fire departments to partner with their local school districts on a school arson prevention program. SDAO provided an informational videotape and brochure covering fire reporting, risk reduction and evacuation procedures, a checklist on smoke alarm maintenance and a reward poster. They also provided a reward for information relating to the arrest of person(s) involved in setting a fire on a school campus.

The fire districts selected for the grant were: Alsea RFPD, Amity Fire District, Banks Fire District #13, Brownsville RFPD, Canby RFPD, Clatskanie RFPD, Colton RFPD, Columbia River Fire and Rescue, Dayton FD, Harrisburg Fire/Rescue, Helix RFPD #7-411, Jackson County FD, #5, LaGrande RFPD, Lakeview RFPD, Lebanon FD, Mapleton FD, Molalla RFPD #73, North Lincoln Fire & Rescue District #1, Polk County FD #1, Rogue River RFPD, Scappoose RFPD, Siletz RFPD, South Gilliam County RFPD VI-301, Stanfield FD #7-402, Stayton FD, Tillamook FD, Umatilla RFPD #7-405, Vernonia RFPD, Willamina FD, Yamhill Fire Protection District.

Marsh USA Inc., a property/casualty insurer for 140 of Oregon's 235 school districts, developed an on-line training course to help school administrators identify risk, the characteristics of youth-set fires, the costs of school arson, available resources and prevention measures. The School Arson Vulnerability Assessment Tool helps schools develop action plans to prevent the opportunity for arson.

School arson is one of the highest causes of property loss in school districts in Oregon. In 2004, the school property loss for Marsh USA Inc. amounted to over $11,000,000. Through the proactive partnership between the fire service, the school community and private industry, this problem is being addressed.

For more information on these programs
School districts insured by Marsh, USA Inc., can obtain information about the on-line training program from Mark Runyon, 503-248-6196, Mark.L.Runyon@marsh.com.

School districts insured by Special Districts Association of Oregon can obtain information about the grant and arson award program from Scott Neufeld, 503-371-8667, neufeld@adao.com

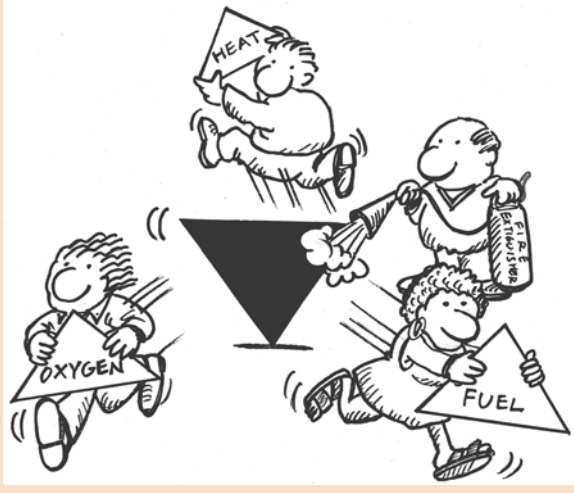


Illustration from *It's Up to You!* by James Cloutier

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