

M The Ontario Fire Service **essenger**

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West Lincoln Tragedy

Inside:

**Candle fires on
the rise**

**Home sprinklers
one step closer**



Ministry of Community Safety and Correctional Services / Ministère de la Sécurité communautaire et des Services correctionnels

The Ontario Fire Service Messenger

Published in the interest of fire protection and fire prevention in Ontario.

Comments, suggestions, questions and articles are welcome. Please send them to the attention of:

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Bernard Moyle, Ontario Fire Marshal



Taking pride in our fire protection team

As front-line workers, firefighters are the more visible employees of the fire department. At the mention of "fire department", most members of the public will automatically visualize firefighters responding to a fire or other emergency. It is not surprising given that they often appear on television where they are seen battling blazing fires or helping victims and their families. Recently, we saw them efficiently deal with a huge fire at a propane facility in Bowmanville. We also saw them cope with the terrible tragedy in West Lincoln where eight people died in a fire. In addition to their primary responsibility of suppressing fires, firefighters respond to a wide variety of other emergencies, such as medical emergencies, hazardous materials incidents, and vehicle extrication. We admire their courage and are grateful for their presence. These front-line workers deserve all the recognition and respect they receive, rewards that are often earned at a high price, such as injuries and illnesses, sometimes death.

A fire department's fire protection team also includes many other persons who serve as part of the team, support the front-line workers and make the system work. It is also important to recognize the contributions and dedication of those who work behind the scenes. Although they may occupy less prominent positions, the role they play is of vital importance.

Communicators take the calls, assess the information, make split second decisions, and provide information to firefighters. They must remain calm in stressful situations and effectively communicate with others so that precious seconds are not wasted. The communicator is on the job throughout an emergency, from the beginning, when the call comes in, to the end, when the vehicles return, ready once again for the next call for help.

Fire prevention inspectors/officers have expert knowledge about the Fire Code and its application to a wide range of occupancies. Their knowledge and good judgment is called upon to make assessments and decisions about the fire and life safety of buildings in their community. These decisions may involve immediate threats to life, building closures, and fire and environmental issues. Fire prevention inspectors/officers ensure fire protection systems in buildings work so that people can evacuate safely in the event of an emergency. They contribute greatly to public safety.

Public educators teach school children and older adults about fire safety. They also try to find a wider audience for their public safety messages by using the various media outlets in their community. Their dedicated efforts to have every home equipped with smoke

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Back Ray's Ride for Cancer



West Lincoln Fire. The Fire Marshal called the fire that claimed the lives of seven children and their mother, the 'worst fire I've seen in 40 years'.



Holiday Fire Safety Campaign. Fire Marshal Moyle and fire departments launched this year's holiday fire safety campaign in five centres across the province.



Brampton's Fire/Life Safety Education Centre. The new education centre in Brampton allows the fire department to take a proactive approach to public education in the community.



Update ONTARIO

News from around the province

'Worst fire I've seen in 40 years'

Fire Marshal Bernard Moyle called the devastating West Lincoln fire that claimed the lives of seven children and their mother "the worst fire I've seen in my 40 years in the fire service."

The fire occurred on the night of November 8. Under an automatic aid agreement with West Lincoln, the Pelham Fire Department was first to arrive on scene. The West Lincoln Fire Department arrived

shortly after. Both are volunteer departments and did a tremendous job responding so quickly.

However, the structure was already fully engulfed in flames when the crews arrived and rescue efforts were impossible.

At the time of writing, the investigation of the fire was still ongoing and the cause had not been determined. Initially the investigation proceeded slowly because



OFM officials survey the remains of the West Lincoln house fire that killed seven children and their mother on November 8. (Picture courtesy of Bev Gilbert)

of the severe damage from the fire. Investigators seized a number of exhibits from the home that were sent to the Centre for Forensic Sciences for examination. Included in the exhibits being investigated are plastic remnants thought to be from a smoke alarm. Electrical components were also seized for examination and x-ray.

In response to the fire, the OFM developed public education materials to increase public awareness of home fire safety. Also, media releases about the West Lincoln fire included messages about the importance of smoke alarms and home fire escape plans. Media were encouraged to disseminate these messages to the public.

"While all of us in the fire service are devastated by this tragedy, we have to remind the public of the importance of fire safe practices in their homes," said Moyle. "We have to be vigilant in getting safety messages out if we are to prevent fire tragedies in the future."

The OFM sent a fire safety alert to all directors of education in school boards across the province. The alert included a fire safety check-list that was to be sent home with all students. The students were asked to go through the check-list with their parents to ensure that fire safe practices were being taken in the home.

A letter was also sent to fire chiefs in the province urging them to step-up fire prevention and public education activities. It included a list of resources available to fire departments to assist with these activities.

These materials, along with links to public service announcements, are available on the OFM web site at www.ofm.gov.on.ca.

The Messenger needs your news

If you have an item you would like to see published in Update Ontario, please send it to: The Editor, The Ontario Fire Service Messenger, Office of the Fire Marshal, Place Nouveau Building,

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Tel: 416-325-3120, fax: 416-325-3162 or email chris.slosser@jus.gov.on.ca.

Candle fires on the rise

Candles caused 17% more Ontario home fires between 2000 and 2003 than between 1995 and 1999, according to data from the OFM. There were an average of 285 candle fires per year between 2000 and 2003, compared to 243 for the earlier time period.

A similar trend is occurring in the United States. National Fire Protection Association (NFPA) data show that candles started fires in 18,000 homes in 2001, a 15% rise from 2000, and more than triple the number in 1990.

"The increase in candle fires is unacceptable," Fire Marshal Bernard Moyle said. "The fire service has to make a concerted effort to ensure this trend reverses. Public education efforts about fire safety and candle safety must be stepped up."

The NFPA cites a variety of reasons for the increase. First, candles have become popular: according to the National Candle Association in the U.S., seven out of 10 households use candles. Second, many people

don't realize how quickly something can go wrong, and don't know how to use candles safely.

In the U.S., one-third of candle fires occurred after candles were left unattended, abandoned or inadequately controlled; one-quarter occurred when combustible material came too close to the flame. In Ontario during 2003, one in three candle fires started in the bedroom and over a quarter started in common rooms such as living rooms and family rooms. Another important factor may be poverty. As many as one-third of people killed in candle fires in the U.S. were using them for light because their power had been shut off.

While the number of candle fires has increased, the overall number of residential fires is dropping, which means that candle fires are responsible for a growing proportion of residential fires. On average, candle fires resulted in twice as many fatalities per year in Ontario between 2000 and 2003 than between 1995 and 1999. There

were a total of 2,351 candles fires in Ontario between 1995 and 2003, resulting in 216 injuries.

Excerpts of this article are reprinted from a NFPA media release dated September 20, 2004.



Chelsie Ouellet (middle), a grade 7 student from Oxdrift Public School west of Dryden, was selected 2004 Fire Chief For a Day. 120 students from Dryden and area schools completed fire safety lessons in their school to enter the draw for the honour. Pictured with Chelsie are Ken Kurz (left) from the Dryden Fire Department and Irmy Fransom, community relations representative, McDonald's Restaurants, Dryden. (Picture courtesy of the Dryden Fire Department)

Taking pride in fire protection team

continued from the front cover

alarms and its occupants prepared with a home escape plan help reduce Ontario's fire losses.

In some fire departments, the two functions, fire prevention inspectors/officer and public educator, are performed by the same person. Every fire that is prevented by their efforts represents one less tragedy in the community, one less time firefighters have to risk their lives.

Training officers provide training to firefighters to keep them up to date with the latest information, technological changes, and occupational health and safety concerns. Training officers possess in-depth knowledge of the latest

techniques and technology and have the ability to impart that knowledge to others. This training benefits not only the front-line firefighters who learn how to deal with the hazards of their occupation and protect themselves from occupational health and safety risks, but also the community, who can feel confident that their firefighters will have the knowledge and skills to face whatever challenges arise.

Working behind the scenes are those in specialized roles, such as the fire department mechanic, who ensures that vehicles and equipment are safe and will work efficiently and effectively when needed. Administration and clerical staff members provide ongoing support

and play an important part in the smooth operation of the fire department.

To round off the team, competent senior management provides leadership to the members of the team and ensures the public fire safety interests of their community are protected.

We can be proud of our fire protection team. Ontarians owe a debt of gratitude to all its members: the senior managers, firefighters, communicators, fire prevention officers, public educators, training officers, mechanics, and administration and clerical staff members. It is a privilege for all of us to have one of the best fire service teams in the world, one that has had such a positive impact in reducing our fire losses and has earned the trust and admiration of our society.

Holiday fire safety campaign launch

Typically, the holiday season sees an increase in the number of home fires in the province. Between November 1, 2003 and January 31, 2004, 41 people died in fires.

In an attempt to prevent this

seasonal increase, Fire Marshal Bernard Moyle and fire chiefs in Kitchener, Barrie, North Bay, Peterborough and Toronto launched a province-wide holiday safety campaign designed to combat deadly cooking fires during the holiday season during the week of December 7 -10.

The Fire Marshal traveled to each of these locations throughout the week to hold media conferences in conjunction with local fire departments to raise awareness of home fire safety during the holiday season.

"The holidays are the most dangerous time of year for fires in Ontario," said Moyle. "We need to step up our efforts to put an end to the deadly holiday trend we've seen in recent years."

During the media conferences, two new television public service announcements (PSAs) about cooking and fire safety were shown to the media. The media were also given copies of radio and newspaper PSAs.

Fire department staff staged cooking safety demonstrations during the conferences to highlight the common mistakes people make when cooking and how to rectify them.

The media conferences also highlighted the danger of cooking while intoxicated.

Fire Marshal Moyle also conducted separate interviews with Toronto's Global TV and City TV to further raise public awareness of holiday fire safety.



The holiday fire safety campaign was launched in Kitchener-Waterloo on December 7. On the top, left, Chief Don Trask addressed the media. In the middle, left, Fire Prevention Officer Shane Edwards provided a safe cooking demonstration in Barrie. At the bottom, left, pictured with Fire Marshal Moyle are Chief Ted McCullough and Fire Prevention Officer Sheri Korn at the North Bay conference.

In the middle is Fire Chief Lee Grant addressing the media at the Peterborough conference on December 9. On the top, right, Fire Marshal Moyle answers media questions following the Toronto conference; in the middle, right, Deputy Chief Rick Simpson addresses Toronto media; and bottom, right, Fire Chief Ron Hickey launches the Barrie media conference.

Grimsby celebrates 125th anniversary

BY CHRIS HALLIDAY,
GRIMSBY FIRE CHIEF

Grimsby Fire Chief Chris Halliday, Fire Marshal Bernard Moyle and Grimsby Mayor Bob Bentley unveiled a new memorial garden commemorating the 125 anniversary of the Grimsby Fire Department on October 6.

"The garden is a way for us to recognize all the firefighters that have served the Town Of Grimsby over the last 125 years," said Halliday. The commemorative garden is adorned with trees, shrubs, an interlocking pathway, and two park-style benches.

Within the centre of the garden is a large stone with a bronze plaque recessed into it. Mayor Bob Bentley and Chief Halliday unveiled the

plaque that reads, "This garden is dedicated to active firefighters and to all who have served on Grimsby Fire Department. Established 1879." The garden beautifies the east side of the fire department headquarters and provides an area where the public can rest and enjoy the flowers and nature.

Over 80 firefighters, members of council, and dignitaries attended the hour-long dedication and unveiling of the commemorative garden. During the ceremony, Fire Marshal Moyle praised the dedication and hard work of volunteer firefighters.

"Volunteers are a special people," said Moyle. "I can't think of a better way to pay tribute to their commitment. I am also very impressed with the firefighters for their pride



A memorial garden commemorating the 125 anniversary of the Grimsby Fire Department was unveiled on October 6. Pictured standing behind the memorial plaque are (left to right): Grimsby Deputy Fire Chief Tim Leach, Fire Marshal Bernard Moyle, Grimsby Chief Fire Prevention Officer Mike Cain and Grimsby Fire Chief Chris Halliday. (Picture courtesy of the Grimsby Fire Department)

in the history that they share".

The Grimsby Fire Department was established in 1879.

Dr. Young leaves emergency position

Dr. James Young is leaving his position as Commissioner of Emergency Management for Ontario to join the federal Department of Public Safety and Emergency Preparedness as senior advisor to the Deputy Minister effective January 31, 2005.

"Dr. Young has brought exceptional leadership as well as world-renowned expertise to his distinguished career in the Ontario civil service," said Monte Kwinter, Minister of Community Safety and Correctional Services. Minister Kwinter is pleased that Dr. Young's extensive experience managing

emergency preparedness and response will now be available to help protect all Canadians.

Dr. Young played a lead role in coordinating the Ontario government's responses to the SARS emergency and the power blackout in 2003. He also had responsibilities as Assistant Deputy Minister, Public Safety Division, for the Ministry of Community Safety and Correctional Services, and Commissioner of Public Safety and Security. For 14 years, he was Chief Coroner for the Province of Ontario. Dr. Young was appointed to the newly created post of Commissioner of

Emergency Management for Ontario in April 2004. He was also responsible for Emergency Management Ontario, the Office of the Fire Marshal and the Centre of Forensic Sciences. Dr. Young has also provided his expertise in countless provincial, national and international investigations and emergencies.

"We have been extremely fortunate to have Dr. Young as a key leader among our Ontario public service team," said Tony Dean, secretary of the Cabinet. "We wish him every success in his new role and look forward to working with him in the future in new, collaborative emergency measures that the federal government has underway."

Excerpts of this article are reprinted from a Ministry of Community Safety and Correctional Services media release dated December 7, 2004.

Home sprinklers soon may be mandatory



Members of the Ontario fire service attended the second reading of Bill 141 in the Legislature on November 25 as a show of support for the bill. Pictured above are those who attended, and Brampton-Centre MPP Linda Jeffrey who sponsored the private member's bill.

Ontario is a step closer to mandating the installation of fire sprinkler systems in newly constructed houses with the passing of the second reading of Bill 141 on November 25.

Bill 141, the Home Fire Sprinkler Act, 2004, is a private member's bill introduced by Brampton-Centre MPP Linda Jeffrey. If passed by the Legislature at third reading, it will amend the Building Code Act, 1992 to ensure that all new detached, semi-detached and row houses would include a fire sprinkler system. The bill would not affect existing homes.

"There is compelling statistical evidence of the need and effectiveness of residential fire sprinklers," said Jeffrey. "I believe as legislators, we have a responsibility to ensure that we take a leadership role to protect Ontarians, and that is why I have introduced this bill."

More than 220 jurisdictions in North America require residential sprinklers in homes, none in Ontario. Since sprinklers became man-

datory in Vancouver, the city has experienced no fire deaths in a home protected by functioning sprinklers.

Between 2000 and 2003, 414 people died and \$1.57 billion in property was lost to fires in Ontario.

"While the benefits of installing sprinkler systems seem obvious to fire protection

professionals, many homeowners, builders, and fire officials are only aware of the myths surrounding them," said Brian Maltby, Division Chief with Brampton Fire and Emergency Services. "They think sprinklers are expensive or are not aesthetically pleasing."

It is estimated that the installation of a home sprinkler system in a new home would cost approximately 1 to 1.5% of the home's cost.

Fire sprinklers are activated when the temperature in a sprinklered room reaches 74°C (165°F). If a fire starts, the heat rises to the ceiling. A glass bulb or a solder link in the sprinkler head breaks at 74°C releasing a cap on the sprinkler head which allows water to flow through a specially designed diffuser to extinguish the fire.

When a sprinkler activates water damage is limited as the flow of water is typically less than one-tenth the water used by fire departments and at much less pressure. Also, only the sprinkler(s) directly over the fire is activated; the entire

system does not activate simultaneously. In 95% of all documented sprinkler activations, one sprinkler head was sufficient to control the fire.

Now that Bill 141 has passed second reading, parliamentarians will review it in committee, after which it will return to the House for third reading. The date of the third reading is not determined, and will depend on how long committee review takes. If MPPs vote to pass the third reading of Bill 141, it will become law.

"Most homeowners aren't aware that eight of every 10 fire deaths occur in the home, or that installing smoke alarms and residential sprinklers can reduce the risk of a fire-related death by 82%," continued Maltby, a member of the Ontario Home Fire Sprinkler Coalition. The coalition is an ad-hoc committee of the Fire Marshal's Public Fire Safety Council. It works to raise public and political awareness about the importance of home sprinkler systems to fire safety, and has worked closely with MPP Linda Jeffrey on the development of Bill 141.

And the winner is...

The grand prize winner of the Fire Marshal's Public Fire Safety Council's "Keeping Our Kids Safe" program is Lisa Buccioni.

Lisa has won a trip for two to Orlando, Florida for teaching fire safety lessons in her grades 1 and 2 school classes in Mississauga.

The program is part of the Council's Autumn Watch Seasonal Safety campaign, in which curriculum



Council Chair Bernard Moyle and Council Coordinator Anne Miller draw the grand prize winner on December 16.

See Prizes on page 20

Light bulbs could pose fire hazard

The Office of the Fire Marshal has been informed that Globe Mini-Spiral 13-watt self-ballasted light bulbs may pose potential fire and electric shock hazards.

At this time, it appears that there were two incidents that occurred in Alberta and one in Ontario. In two of these incidents, the light bulb started to smoke. In one incident, burning particles from the light bulb ignited a vacuum cleaner located below.

Though not authorized to bear the mark of Underwriters' Laboratories (UL), these self-ballasted fluor-

escent light bulbs bear an unauthorized UL mark. Affected light bulbs were manufactured from January 2002 to April 2003.

Consumers are urged to immediately remove these light bulbs from service. Globe Electric Company Inc., the product distributor, is offering to send to each consumer who contacts their representative two free 13-watt replacement light bulbs for each affected light bulb that the consumer currently has. Customer service can be reached at (514) 694-0444 ext. 151 or by e-mail at customerservice@globe-electric.com.

com.

Details regarding this potential hazard may be found at the following web site links in news releases from Underwriters' Laboratories of Canada (<http://www.ofm.gov.on.ca/english/Publications/Communiques/2004/2004-28at1.asp> and the Electrical Safety Authority (<http://www.ofm.gov.on.ca/english/Publications/Communiques/2004/2004-28at2.asp>).

Reprinted from OFM Communiqué No. 2004-28, dated December 7, 2004.

Jr. firefighter program pays off years later

A former junior firefighter with the Whitby Fire and Emergency Services' Junior Fire Department prevented a fire in her home thanks to the training she received through the program.

On October 12, 2004, Jenna Smith, 19, was in her home when she heard smoke alarms sounding. She ran upstairs to discover a pot of oil burning on the stove. Without hesitation, she grabbed the fire extinguisher and discharged it on the fire. She then removed the pets from the home and called 911.

With the pot still burning and smoke filling the house, Jenna

discharged the rest of the extinguisher on the fire, then left the home.

Years ago, Jenna was enrolled in Whitby's Junior Firefighter program. The program teaches fire prevention and fire safety to children aged 11 and 12 years. During the program, children receive classroom and hands-on lessons on first aid, CPR, fire extinguisher training and home escape planning. The goal of the lessons is to teach children how to react in emergency situations.

"Jenna's calm demeanor and actions probably saved her family

home from extensive damage," said Captain Randy Tureski, from the Whitby Fire and Emergency Services. "All the knowledge she learned in our junior firefighter program she applied very effectively."

Whitby's Junior Fire Department program celebrated its 32 year in 2004 with thousands of 11 and 12 year old boys and girls having received fire safety education.

Thanks to Captain Jeff Dinsmore, Chief Fire Prevention Officer with the Whitby Fire and Emergency Services, for the information in this article.

Questions & Answers: the Ontario Building Code & the Ontario Fire Code

- Q.1** Under what three conditions does the Ontario Building Code apply?
- Q.2** What are the four components of life safety that form the basis for retrofit requirements?
- Q.3** True or False: The Fire Code applies to all new construction.
- Q.4** True or False: The Fire Code supersedes by-laws respecting fire safety.
- Q.5** True or False: The Fire Code requires all buildings to have an approved fire safety plan.

Answers on page 25

Teacher recognized for Risk Watch program

BY KEITH WELLS,
FIRE PREVENTION OFFICER,
TOWNSHIP OF KING

The York Region Risk Watch Coalition presented Anne Marie Taylor with the "Teacher of the Year" award for her contribution and commitment to the Risk Watch program at the Holland Landing Daycare on December 7.

"Anne Marie has done a remarkable job developing a number of different lesson plans she teaches to pre-school aged children covering the eight key lessons of the Risk Watch program," said Keith Wells, Chair of the York Region Risk Watch Coalition. Anne Marie conducted pre-test and post-test results in her classroom and provided the results to the coalition.

One of the initiatives that Anne Marie developed to reinforce her lessons was a character called Ranger Rex. Ranger Rex is a stuffed animal that Anne Marie had brought into her classroom from home.

Each student in the class was given an opportunity to take Ranger Rex home with them for a weekend. During Ranger Rex's stay at the student's home, Ranger Rex would go around the house with the child and their parents to

conduct a home safety inspection. At the end of the weekend, the parents and the child would write down the things that they did on the weekend to make them safer, and the student and Rex would share it with the class.

"Including pre-school and day care facilities in the existing Risk Watch program started as a pilot project at the request of the Health Department in York Region, which is an active member of the Risk Watch coalition," said Wells.

"The expansion of the project into the daycare facilities has been a positive experience and the teachers that are involved have embraced the program and have done wonders with it. Anne Marie is a perfect example. They truly are a pleasure to work with."

The pilot program included six daycare centres across York Region and involved 126 children. The



Anne Marie Taylor was presented with the Risk Watch "Teacher of the Year" award for York Region on December 7. Pictured above at the award presentation are (left to right) Jack Hauseman, East Gwillimbury Councilor; James Young, East Gwillimbury Mayor; Brad Morrissey, East Gwillimbury Fire Prevention Officer; Anne Marie Taylor; and Keith Wells, Fire Prevention Officer, Township of King and Chair of the York Region Risk Watch Coalition. (Picture courtesy of East Gwillimbury Emergency Services)

post-test evaluation showed that 82% of the children that participated in the Risk Watch program during the pilot project showed an average increase of 19% in their scores from the pre-test scores.

The coalition is now looking at the logistics of expanding the program into several more daycare facilities across York Region.



Fire Marshal joins Wall of Fame

Fire Marshal Bernard Moyle was inducted into the Wall of Fame of Toronto's Runnymede Collegiate Institute on October 29, 2004. The Wall of Fame pays tribute to former Runnymede students who have gone on to make significant contributions to the com-

munity.

The Fire Marshal was a student at Runnymede from 1953-55. Pictured on the left, Fire Marshal Moyle holds the certificate he received in a presentation at Runnymede on October 29.

Fire Code gave FPOs teeth

Ontario's fire fatality rate has dropped dramatically since the early 1980s. Using the tools provided by the Fire Code, fire prevention officers have played a significant role in this decline.

The last two decades have seen a significant decline in the number of fire fatalities and the number of fire losses in Ontario. The structural fire fatality rate (per million population) has dropped by 40% between 1983 and 2003, while the number of structural fires reported with loss declined by 30% between 1983 and 2003 (data for 2004 are not yet available).

Fire prevention officers (FPOs) have played a significant role in this decline, particularly since the enactment of the Ontario Fire Code in 1981.

Prior to the existence of the Fire Code, the work of FPOs "was a little 'hit and miss'," said Krystyna Paterson, Manager of Fire Safety Standards at the OFM. "Under what was then the Fire Marshals Act (FMA), FPOs had the power to enter a building they thought was

a fire hazard, but there were no province-wide standards for them to fall back on. They could invoke a national fire standard or standards from other jurisdictions, but there were no hard and fast rules or guidelines to direct them."

But the Ontario Fire Code changed that. The Fire Code provided specific requirements that building owners must follow in order to meet minimum fire safety standards. "The Fire Code provided uniform standards in the province and placed the obligation to meet those standards on building owners," said Paterson. "At the same time, the FMA provided a means of enforcing the standards, including expanded authority provided to

fire prevention officers."

"The Fire Code gave FPOs the tools required to make a real dent in the number of fires and fire fatalities in the province," said Deputy Fire Marshal Doug Crawford. "It gave FPOs the teeth they needed to ensure property owners met fire safety standards."

FPOs are responsible for much more than building inspections. Other duties include evaluating and monitoring fire safety plans; developing, implementing and evaluating public education programs; public relations and communicating with the public; and prosecuting offenders of fire safety legislation.

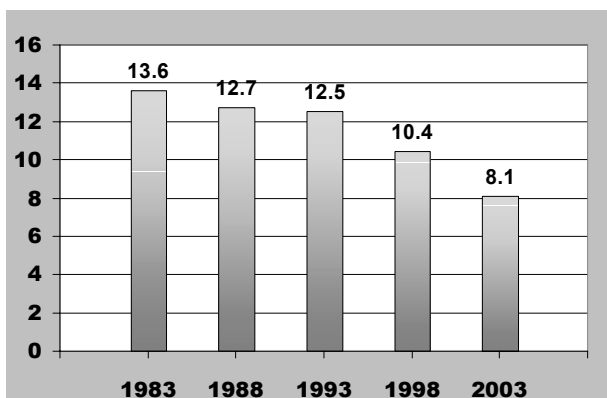
"We've seen a dramatic decrease in the rate of fire fatalities since the early '80s, thanks in large part to the dedication of FPOs to ensure Fire Code standards are met," said Deputy Fire Marshal Crawford.

Thanks to Alison Wilson, the OFM's coordinator of statistical services, for providing statistical information for this article.

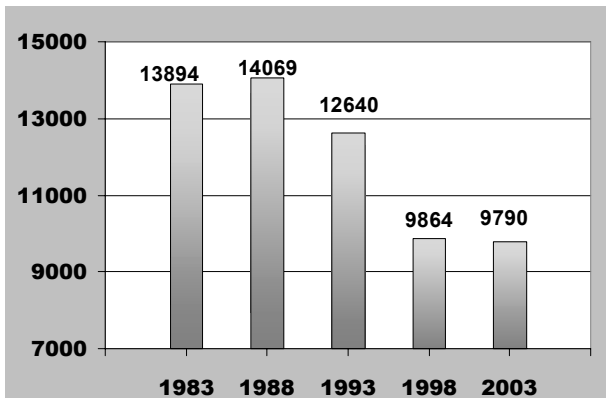


Deputy Fire Marshal Doug Crawford

Ontario Structural Fire Fatality Rate (per million population)



Number of Structural Fires in Ontario Reported with Loss



HUSAR team plays support role

First ever full deployment takes place at CNE

There's one misconception that Ron Jenkins, a team leader with the Toronto Heavy Urban Search and Rescue (HUSAR) team, wants cleared up: when the HUSAR team is called in to assist with the emergency response at an incident scene, it is not coming in to take over the response; it's there to help.

"When we arrive at an incident, we're not going to take command," said Jenkins, platoon chief with Toronto Fire Services. "We're under the direction of the incident commander already on site; we're a sector under their command. We're there to provide assistance to the emergency response already underway, not to come in and take control."

Jenkins was speaking at the Toronto HUSAR team's first ever full

deployment of base operations at the CNE's Queen Elizabeth Building in Toronto during the week of October 4 to 8.

The exercise was the first time the team has tested their entire operations to see what the full deployment footprint looks like.

"The exercise gives us a chance to test all our equipment, all our electrical systems - everything - to make sure it's all working," said Jenkins.

The Toronto HUSAR team is equipped to respond to a variety of emergency situations. Its base camp includes a power tent containing generators so the camp can supply its own power; dog tents for dogs used in search-and-rescue missions; a communications tent; a command tent; a medical tent; a HAZMAT tent; sleeping quarters; and eating quarters with a water purifi-

cation system.

While there are three HUSAR teams in Canada (the other two are based in Vancouver and Calgary), the Toronto team is the only team in the world with the capability of deploying in sub-zero temperatures. However, it is not yet ready for international deployment as the United Nations has yet to inspect the team's full deployment.

The Toronto-based team, which began operations seven years ago, consists of two teams of 60 personnel who are representatives from the fire and police services, Emergency Medical Services (EMS) and emergency responders. Each team member receives 400 hours of training to ensure they are capable of performing all possible duties; so that, for example, members from the fire service are trained to perform EMS duties and vice versa. The Ontario government provides annual funding of \$300,000 to support the team.

"The United Nations standards for deployment require that we are traveling to an incident scene within four hours of being notified," said Robert Head, HUSAR team leader and platoon chief with Toronto Fire Services. Head said that the team travels by road to any incident scene within 15 hours

traveling time. It travels by plane to any scene over that traveling time.

"HUSAR is a provincial and a federal resource," said Terry Boyko, HUSAR project manager and Toronto deputy fire chief. "This team does not belong to Toronto. It responds to incidents across the province and the country." Jenkins added that team members are available to provide presentations to communities to provide information about the assistance the team can offer in emergency scenarios.



The Toronto HUSAR team held its first ever full deployment at the CNE from October 4 to 8. Pictured at the top left is an overview of the camp filling the floor of the Queen Elizabeth Building. Bottom left is one of the camp's sleeping quarters, which sleeps 10. Above, right is Robert Head, Toronto HUSAR team leader, giving a tour of the camp's communications tent.

ONTARIO FIRE WATCH: Fatal Fire Summary

The OFM compiles statistics on all fatal fires that occur in Ontario. These statistics can assist the fire service to determine fire trends, plan fire prevention initiatives and target public education activities. Due to the methods and criteria used in reporting fire deaths, statistics are subject to change.

September 2004: 9 fatal fires resulting in 11 fire deaths

Age Group	Male	Female	Total
0-15	1	0	1
16-64	4	3	7
65 and over	0	3	3
Total	5	6	11

Fire Cause	Time of Day
Accidental	2 0001-0800
Undetermined	0 0801-1600
Under Investigation	7 1601-1800
Incendiary	0 1801-0000

Locations of fatal fires: Hamilton (1); Kawartha Lakes (1); Killaloe, Hagarty and Richards (1); Kirkland Lake Town (1); Plympton-Wyoming (1); St Isidore De Prescott (1); St. Catharines (1); Toronto (1); Wellington North (1).

October 2004: 5 fatal fires resulting in 5 fire deaths

Age Group	Male	Female	Total
0-15	0	0	0
16-64	4	1	5
65 and over	0	0	0
Total	4	1	5

Fire Cause	Time of Day
Accidental	0 0001-0800
Undetermined	0 0801-1600
Under Investigation	2 1601-1800
Incendiary	3 1801-0000

Locations of fatal fires: Georgina (1); Ingersoll (1); Kenora City (1); Toronto (1); Windsor (1).

Communicators attend seminar at Fire College



Thirty-six communicators who receive incoming calls for emergency services attended the first Ontario Fire Service Communicators' Seminar held at the Ontario Fire College, November 1-3. (Picture courtesy of the Ontario Fire College)

BY AMY MCKEE,
INSTRUCTOR, OFC

The people pictured above represent those who 'answer the call'

for fire and police departments around the province. They are a small representative group of those individuals who are on the front line of incoming calls for fire and

emergency services, 24/7, 365 days a year.

From November 1-3, 2004, 36 communicators attended the first Ontario Fire Service Communicators' Seminar at the Ontario Fire College (OFC). Collectively they represented six volunteer, 13 composite, and 16 full time departments. Fire Marshal Bernard Moyle addressed the group and emphasized the importance of their current role as well as the future role they will have in the Ontario fire service. The seminar included sessions on stress management, critical incident stress, the communicator standards, orienting new communicators, and emerging trends in technology.

This was the first seminar to be offered to communicators and dates have been set for next year, ensuring this will become an annual seminar offered at the OFC.

Fire and Life Safety Conference set for Dryden

The 2005 Fire and Life Safety Conference, entitled "Changes in Latitudes, Changes in Attitudes", will take place in Dryden on April 22 and 23. For more information contact the Dryden Fire Department at 807-223-1178.

Province-wide tour kicked off Fire Prevention Week

BY GINA PONTIKAS,
OFM INFORMATION COORDINATOR

From October 3 – 7, 2004 Fire Marshal Bernard Moyle toured the cities of Ottawa, Hawkesbury, Stittsville, Kingston, Grimsby and Brampton meeting with fire chiefs in each location to help launch their local Fire Prevention Week (FPW) campaigns.

The theme of this year's campaign was "Test Your Smoke Alarms!" and highlighted two important fire safety messages - install smoke

alarms and test them regularly; and develop and practice home escape plans.

In Ottawa, the Fire Marshal joined Mayor Bob Chiarelli and Ottawa Fire and Rescue Chief Rick Larabie at city hall for a practice fire drill. Moyle also visited Hawkesbury and Stittsville to tour local fire stations and participate in local Fire Prevention Week activities.

The Fire Marshal also helped kick-off the Kingston Fire and Rescue's new smoke alarm program. While in Kingston, he spoke to a class of Grade five students about the importance of working smoke alarms.

In Brampton, a live fire demonstration took place in a

home slated for demolition to show the effectiveness of home sprinklers.

Many fire departments across the province held fun, interactive and educational FPW activities in their communities. To name a few, The Town of Caledon Fire and Emergency Services held a contest for Caledon school children participating in fire safety education.

The City of Hamilton Fire Services organized a Children's Fire Safety Display at a local museum and the "Fire Safety for Dummies", an interactive learning display at a local mall. Hamilton's CH Television featured a weekday news program on the topics of arson and juvenile firesetting throughout Fire Prevention Week to help heighten awareness and promote fire safety.

In the Town of Oakville, ap-

See Fire on page 13



Pictured on the top, left, Gillian Boyd, Public Education Officer with the Caledon Fire and Emergency Services, staffed the Fire



Prevention Week display at the Canadian Tire store in Bolton. Pictured with her is Cynthia Bigrigg. In the middle, left, Dave Docherty from Windsor Fire and Resuce takes kids through a fire truck as part of Windsor's Fire Prevention Week activities. On the bottom, left, Richard Ferguson, Fire Protection Technologist with the Richmond Hill Fire Department, demonstrated how to use a fire extinguisher. Top, right, Fire



Hamilton Emergency Services, performs the "Mystical Dave's Fire Safety Magic Show", in which every illusion has a fire safety message, at the Hamilton Children's Museum. Bottom, right, two girls attend Oakville Fire Department's Fire Prevention Week kick-off. (Thanks to each department for providing pictures)



Richmond Hill raises \$5,000 for charity

BY MELISSA PRESLEY,
PUBLIC EDUCATION OFFICER, RICHMOND HILL
FIRE DEPARTMENT

Each year the Richmond Hill Fire Department donates proceeds from its Fire Prevention Week open house to a local charity. Every year



Richmond Hill Fire Department's Chief of Fire Prevention, Randy Pyle (left), and Public Education Officer Melissa Presley presented the \$5,000 donation to the Canadian Centre for Abuse Awareness on air at Toronto's Q107 radio station with DJ John Derringer (middle). (Picture courtesy of the Richmond Hill Fire Department)

the open house starts with a "world famous" pancake breakfast, served by The Optimist's Club of Richmond Hill, followed by a great lunch thanks to the help of M & M Meat Shops. This year, parents enjoyed a silent auction, draws, demonstrations and safety booths, while children enjoyed games, face painting, entertainment and prizes that were offered throughout the day. Money raised during the open house went to the Canadian Centre For Abuse Awareness, which works to eliminate child abuse.

The open house activities raised \$5,000 for the centre. This money would not have been raised without the generous donations of local businesses and groups such as The Optimist Club of Richmond Hill. The residents of Richmond Hill make Richmond Hill's open house a huge success year after year.

Son stops dad from entering fire

This past October, 24 classes, with a total of 586 students, from the Dorset Drive Public School in Brampton attended the Brampton Fire Life Safety Education Centre. Students were taught fire safety prevention and what to do in the event of a fire.

On December 21, a family with a child who had attended the fire safety lessons had a fire in its home started by unattended cooking.

During the fire, the father, Johny Raju, wanted to go back into the home to retrieve some important documents. His eight year old son Shobith remembered what he had learned with his grade 3 class and grabbed his father's leg, insisting that he not return to the burning home. Shobith's actions prevented potential injury or death to his father. The family credits instructors at the Brampton Fire Life Safety Education Centre for preparing Shobith with the knowledge needed to respond appropriately during an emergency.

Thanks to Dorset Drive Public School Principal Kathy Filkin and the Brampton Fire Department for providing this information.

Fire Prevention Week

continued from page 12

proximately 2,500 residents visited the fire service's training campus for fire safety education, squirting fire hoses, face painting and a sprinkler activation demonstration.

Both the Whitby Fire and Emergency Services and the Richmond Hill Fire Department held open houses.

A highlight of Windsor Fire and Rescue Services Fire Prevention Week was the joined efforts of the fire services, Meals on Wheels and the Victorian Order of Nurses, who helped install smoke alarms and

batteries in 125 homes for older adults and persons with disabilities. The Fire Marshal's Public Fire Safety Council (FMPFSC) and the Public Education and Media Relations Section of the OFM developed and provided Fire Prevention Week public service announcements (PSAs) to most Ontario newspapers and radio stations. Fire Prevention Week PSAs and newly developed PSAs for the holiday season are available on the Fire Marshal's Public Fire Safety Council's website at www.firesafetycouncil.com/english/pubsafet/psaart.htm.



Pictured above, firefighter Pat Fitzpatrick from Whitby Fire and Emergency Services, teaches fire extinguisher skills to the next generation of firefighters at Whitby's open house on October 6. (Picture courtesy of Janice Laswick)

A proactive approach to public education

Brampton's Fire/Life Safety Education Centre means the fire department doesn't have to wait for an invitation to talk about fire safety.

By mid-afternoon on any given day, George Hitchcock, Division Chief with Brampton Fire and Emergency Services, will have had up to 60 kids traipse past his office, buzzing about fire safety.

Hitchcock's office is part of the Fire/Life Safety Education Centre Brampton opened on May 29, 2003. The centre is a 6,000 square foot building devoted to providing fire prevention and life safety messages to the Brampton community. It includes a full-sized model of an average home called Stephanie's Place, named after the daughter of former figure skating star Barbara Underhill, Stephanie Gaetz, who died tragically at her home.

The model home, which includes a bedroom, bathroom, living room and kitchen, provides Hitchcock and his staff with a real-life setting to identify fire and safety hazards around the home, and to teach life safety skills using practical, hands-on approaches.

"The education centre allows us to reach more kids," Hitchcock said. "In the past we had to wait to be approached by a school to get invited into a classroom. Now we can be more proactive. We can go out and bring kids here."

The idea to build the centre first came in the mid-1990s and was based on a small education centre at the Peel Children Safety Village in Brampton. "We were involved with the Safety Village and saw the

great results from educating children there," said Brampton Deputy Fire Chief Andy MacDonald. "We also knew that Cambridge Fire Department was doing great work at their Fire Safety Centre. We wanted to use these kinds of programs as a base and build from there."

Every Tuesday, Wednesday and Thursday, the centre offers two 90 minute fire and life safety education programs to classes of 25-50 kids from area schools. The Bramalea City Centre provides free busing, delivering school classes to and from the centre.

"First we'll show the kids fire and life safety videos, then we take them into Stephanie's Place to look around the room and identify hazards," Hitchcock said. "We'll figure out why certain things are hazards and how to fix them.

We'll also talk about and practice fire safety, including the importance of smoke alarms, home fire escape plans, what to expect when calling 911, stop, drop and roll, and crawling low under smoke."

"Our fire safety messages are so much more hands-on when we've got these kinds of resources," said Chris Gougeon, a Fire/Life Safety Education Officer at the centre. "And we reach so many more people than before."

Gougeon estimates that 12,000 kids come through the centre a year, and when those students take the fire and life safety messages home with them to their families, he estimates an additional 25,000 –



Brampton Fire/Life Safety Officer Tina Hickey demonstrates fire safety to a group of elementary school students in Stephanie's Place.

30,000 people are receiving those messages every year.

Gougeon said this is a great way to spread fire safety messages to hard-to-reach communities. "A lot

See Community on page 15

Community support key to centre's creation

continued from page 14

of people in Brampton are newcomers whose first language is not English," Gougeon continued. "Spreading safety messages to people through their kids is one of the few methods we have to reach these communities."

Prior to the construction of the centre, Brampton had three firefighters going to schools on request to make fire safety presentations. But Hitchcock said that Stephanie's Place and other resources at the centre allow for much more focused, interactive and meaningful public education programs and activities.

MacDonald estimates that the centre has cost about \$1.5 million to build. Approximately \$300,000

cash and in-kind materials and services were donated by corporate sponsors, and the bulk of the rest of the money was provided by Brampton Council.

"Right from the beginning, we had tremendous support from everyone in the community," said MacDonald. "Once we were able to build some momentum and get the support of some corporate backers and service groups, our fire chief, our commissioner, and Fire Marshal Moyle made presentations to Council. Once Council was on board, the momentum just kept on going."

MacDonald says another key to getting the centre built was the support of Barbara Underhill. "Following the tragic death of her own child, Barbara has done incredible work supporting projects

focusing on prevention and life safety. She lent her considerable celebrity to our efforts, made presentations to numerous community groups, and really gave credibility to our idea."

MacDonald said the key to building a centre like Brampton's is to first build community support for the idea among Council, corporate partners and community service groups.

"We want to see one of these centres in every community across the province," said MacDonald. "We hope to see someone build a centre in their community that's bigger and better than ours, and we'd be happy to help any way we can."

"One of the concerns people had when we started was will anybody use the centre once it's built," MacDonald continued. "Well, now that we're up and running, we're booked solid for months in advance. We can provide solid evidence to anyone trying to do this in their community that if they can build it, the people will come."

OFM News Update

Eddy Coretti was the successful candidate in a recent competition for the position of administrative assistant, Southwest Region, Field Fire Protection Services effective December 20. Eddy has been with the OFM since April, 2003 as the administrative assistant for the Monitoring and Evaluation Unit.

Keri Gysbers began as the administrative manager in Field Fire Protection Services on November 1. She is on a six-month assignment from the Human Resources Branch.

Lorne Hooper retired from the OFM after 33 years. Lorne joined the OFM in November 1981 as a fire safety officer. He had pre-

viously been an inspector with the Liquor License Board of Ontario. He spent his career with the OFM as a fire safety officer and fire protection adviser in the Ottawa area until his retirement on July 31.

Jean Kirkland joined Field Fire Protection Services on November 29 as an administrative assistant. Jean has over 30 years administrative experience in both the private and public sectors and was previously with the Ministry of Northern Development & Mines.

Vincent Liu was the successful candidate in the recent competition for the program specialist, Performance Measurement and Benchmarking project, Field Fire Protection Services effective December 16. Vincent, formerly with the Ministry

of Municipal Affairs and Housing, had held the position on a contract basis for the past six months.

Bob Pollard will retire as an instructor at the Ontario Fire College. His last day was December 31. All the courses that he instructs and coordinates are very positively received by students, and he leaves them in very good shape for his successor. He has accepted a position as a professor in the Pre-Service Firefighter Education and Training Program at Georgian College, starting in January, 2005. All the best Bob!

Doug Tennant joined the OFM on November 8 in Field Fire Protection Section as the operations manager, Thunder Bay. Doug was previously the fire chief of Severn Township.

**Climbing
the Ladder:
Education &
Training**

The objective of **Climbing the Ladder** is to keep you informed and up to date on issues related to education and training within the Ontario fire service, and to adequately address your questions and concerns. If there is a particular issue you want covered, send the topic to the Editor of the Messenger and it will be passed on to the appropriate person in the OFM Academic Standards and Evaluation section.

Grad of Fleming's first pre-service class wins award

A graduate of the first class of the Pre-Service Firefighter Education and Training program offered at Sir Sanford Fleming College in Peterborough was selected from approximately 500 college students as the winner of Fleming College's Law and Justice Centre Award. The award is given for academic achievement and significant contribution to the college community.

Dan Caird completed the 12 month program in December 2003, and by winning the award, he was selected as the class valedictorian for all college graduates. In addition to achieving excellent academic results, while enrolled in the program, Caird worked as a volunteer firefighter with the Havelock Fire Department; volunteered with the Peterborough/Northumberland Victim Services; volunteered as a fundraiser for the Kawartha Sexual Assault Centre; and competed as a member of one of Fleming College's extrication teams.

"The Pre-Service Firefighter program was a fantastic exper-

ience," said Caird. "It gave me the opportunity to apply all the knowledge I learned in class to practical situations."

Caird's was the first class to graduate from the new program at Fleming, which is a collaboration between the Peterborough Fire Department, Sir Sanford Fleming College, the OFM and the Ontario Association of Fire Chiefs (O AFC). It is intended to provide in-depth training to those entering the fire service.



Dan Caird

"One of the best things about the program was that the practical facilities are right there. We could take the theory learned in class in the morning out into the training facility that afternoon," Caird said.

"And the instructors were firefighters from the Peterborough Fire Department, so they had first hand experience that was invaluable to the students," Caird, who now works for the Ajax Fire and Emergency Services, continued. "They gave us a real appreciation for the job and what to expect once out working in a department."

The program was launched in

2001 when the OFM and the O AFC began encouraging local fire services to partner with community colleges to provide in-depth training for firefighters.

Later that year, Peterborough Fire Chief Lee Grant approached Sir Sanford Fleming College to suggest the program there. "He realized how important it is for his firefighters to be involved in recruitment," Linda Skilton, Academic Team Leader for Sir Sanford Fleming's Centre for Law and Justice, said of the Peterborough chief, "and thought this would be the best way for them to be involved." Twenty-five Peterborough firefighters are involved in teaching the program.

The program curriculum is based on the OFM and the O AFC's pre-service firefighter curriculum. It includes courses on fire service fundamentals; communications and public relations; incident management; an introduction to psychology; fire suppression, safety inspections and physical fitness.

For more information visit www.ofm.gov.on.ca/english/Education/enhanced.asp or www.flemingc.on.ca.

Who's in the OFM Certification Office?

Many in the fire service have talked to, or will talk to, Uyen Ha and Sheila Callaghan in the OFM's Certification Office. The following is meant to introduce them and the certification services they provide to members of the fire service.

**BY UYEN HA, PROGRAM COORDINATOR,
OFM'S CERTIFICATION UNIT**

Uyen Ha is program coordinator in the OFM's Certification Unit. Her primary responsibilities are to provide support and assistance to the Certification Council, and to manage the administrative processes for the Certification Office.

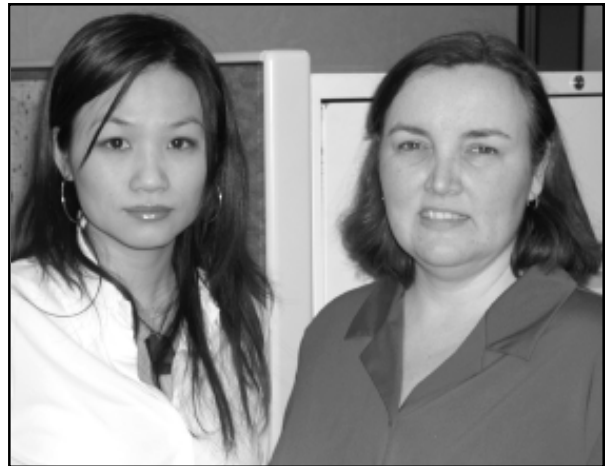
After graduating from York University with an Honours Bachelor of Arts in History/Law and Society, Uyen worked at the Management Board Secretariat with the Ontario Internship Program before joining the OFM.

"When I started with the Office of the Fire Marshal in February 2002, our unit was receiving only

firefighter and fire prevention officer certification applications," said Uyen. "Since then, the Company Officer Certification Program has been launched, and a number of programs/courses have received accreditation from IFSAC and the Pro Board – all of which increases the activity in the Certification Office." In 2004, the Certification Office issued 2,075 certificates in the *Firefighter, Fire Prevention Officer, Company Officer Certification Programs, Advanced Fire Cause Determination and Investigation course, Public Fire and Life Safety Educators' Certification Program, OFM Fire Investigator Certification Program* and the *Supervisor's and Program Specialist's*

OFM Certificate Program.

"Since joining the Certification Unit, I have had the opportunity to develop and manage a number of program/course databases to track and provide reports; revise and help maintain the certification/accreditation portion of the OFM website; revise communication/marketing materials; assist in the



Uyen Ha and Sheila Callaghan work in the OFM's Certification Office.

development of the programs/courses; and review certification applications prior to their approval," said Uyen.

"It has been great for me to see the fire service's dedication to education and training and to witness the progress that the programs have made in a short period of time."

Because of the growth in the Certification Office, Sheila Callaghan, program assistant, joined the OFM about a year ago to assist in processing certification applications. She also provides support by editing certification documents and following-up on applications. Her contribution has allowed the Certification Office to meet the increasing demands placed on it. Prior to joining the OFM, Sheila was an administrative assistant in customer service with the Emergency Health Services Branch of the Ministry of Health and Long-Term Care.

Fire service certification update

Firefighter Certification Program

	Departments	Firefighters
Enrolled	190	15,369
	Career Firefighters	Firefighters
Total Certified	1,377	579

Fire Prevention Officer Certification Program

	Departments	Fire Prevention Officers
Enrolled	75	453
Total Certified		61

Company Officer Certification Program

	Departments	Company Officers
Enrolled	51	1,023
Total Certified		3

Fire Code Opinion

The OFM provides clarifications and opinions on Ontario Fire Code matters to assist users in understanding the requirements and their intended use. The chief fire official of the municipality is not obligated to abide by these opinions. The chief fire official has the authority to enforce the Fire Code within the jurisdiction and should be contacted prior to implementing the provisions of these opinions.

Photoluminescent Exit Signs

Q: Are photoluminescent exit signs permitted in lieu of traditional exit signs under Part 9 of the Fire Code?

A: Photoluminescent exit signs use photoluminescent materials that absorb and radiate light. These signs do not require electrical power, but they need to be charged by light sources in their surrounding area prior to radiating light. Some of these signs have now achieved listing under UL/ULC 924, "Standard for Safety Emergency Lighting and Power Equipment".

Sections 9.3 and 9.5 of the Fire Code specify wording, letter sizing and contrast criteria for exit signs, as well as the need for sign illumination. There are no requirements for an emergency power supply for illumination of these signs. Sections 9.2, 9.4 and 9.6 of the Fire Code include additional requirements for normal and emergency power supply in accordance with referenced sections of the 1986 or 1990 Building Code. This includes a requirement for exit sign lighting to be connected to emergency power supply circuits required for building emergency lighting.

Photoluminescent exit signs were not a consideration when the various Sections of Part 9 of

the Fire Code were written. However, they are acceptable for use in buildings regulated by Sections 9.3 and 9.5 where they meet the prescribed wording, lettering contrast criteria and letter sizing for externally illuminated signs. These signs are also acceptable in buildings regulated under Sections 9.2, 9.4 and 9.6 if they are externally illuminated and meet referenced sections of the 1986 and 1990 Building Codes, which include emergency power supply requirements for externally illuminated exit signs.

Photoluminescent exit signs that are not provided with an external illumination source connected to building emergency power supply circuits do not meet the exit sign requirements of Sections 9.2, 9.4 and 9.6 of the Fire Code. However, the unique properties of these exit signs to stay visible during power failure conditions permits the chief fire official to use the discretion available in Article 9.1.2.4. of the Fire Code to approve variances from the prescribed criteria in Sections 9.2, 9.4 and 9.6. Any variance from the stated criteria for exits signs in Sections 9.3. and 9.5 can also be dealt with in the same manner.

A recent BMEC Authorization (#04-06-298) may serve as the basis for the approval of these exit signs under OFC Article 9.1.2.4. This Authorization can be viewed at www.obc.mah.gov.on.ca/userfiles/HTML/nts_4_8751_1.html.

The Use of Mesh Filters for Grease Removal in Commercial Cooking Equipment

Q: Some maintenance technicians are replacing Type 1 grease filters in commercial cooking equipment with mesh filters. Are mesh filters acceptable under Article 2.6.1.12. of the Fire Code as grease filters in the exhaust hoods of commercial cooking equipment?

A: Sentence 2.6.1.12.(1) of the Fire Code requires that commercial cooking equipment be provided with exhaust and fire protection systems in conformance with the 1994 edition of NFPA 96. Chapter 3 of this standard requires that listed

grease filters be used and that mesh filters shall not be used as grease filters.

Sentence 2.6.1.12.(2) of the Fire Code, however, does permit existing exhaust or fire protection systems to be approved, which may have resulted in mesh filters being accepted as grease extractors.

Mesh filters differ from proper baffle type grease filters (Type I) in commercial cooking exhaust hoods in that they do not adequately drain off the grease once collected from grease-laden vapours during the cooking process. Because of this tendency to retain grease, they can become a fire hazard. As a result of this increased hazard, mesh filters should not be used as a replacement for Type 1 grease filters, and should be removed whenever found as such.

Oxygen-rich clothing needs ventilation before lighting up

BY MICHAEL NG,
OFM FIRE PROTECTION ENGINEER

In March 2003, the OFM introduced the guideline, "Preparation of a Smoking Policy in Long-Term Care Facilities" to assist owners, managers and staff of these facilities to develop and implement a fire safe smoking policy. The guideline advises that smoking be restricted to designated areas that prohibit the use of oxygen dispensers. Further, it advises that precautions should be taken for residents who intend to enter the designated smoking area soon after an oxygen therapy session.

Concern has been expressed that absorbent materials such as cotton clothing can become saturated with oxygen and remain saturated for a period of time after removal from the oxygen-enriched environment,

making them more readily ignitable and susceptible to an intense fire.

The OFM guideline references both CSA Standard Z305.12-98, "Guide for the Safe Storage, Handling, and Use of Portable Oxygen Systems in Home, Domiciliary, and Healthcare Settings" and CGA Standard P-39-2003, "Oxygen-Rich Atmospheres" on the topic of oxygen saturation. The standards recommend that individuals who have been exposed to high concentrations of oxygen should either change their clothing or ventilate their clothing in a normal atmosphere for at least 30 minutes before exposing themselves to the presence of an ignition source. Although it has been well established that clothing will burn more vigorously in an oxygen-enriched

environment, it is unclear how much time it takes for the oxygen to dissipate to a safe level in normal air.

Michael Ng and Meg McNeil of the OFM undertook demonstrations at the Ontario Fire College to determine how long oxygen-saturated clothing should be ventilated in normal air so that it does not burn at an en-

hanced rate. In brief, the demonstration consisted of:

1. Oxygen saturating seven cotton bathrobe samples in separate plastic bags for a 24 hour period,
2. Removing and subjecting the samples to varying ventilation times (46 seconds, five, 10, 15, 20, 25 and 30 minutes) in normal air
3. Burning each sample with a small flame ignition source on a hanging assembly.
4. Burning an eighth unsaturated bathrobe sample to serve as a benchmark for comparison purposes.
5. Comparing the flame propagation rates between the samples.

The demonstration showed:

- the oxygen-saturated sample ventilated for 46 seconds burned at a significantly enhanced rate when compared to the unsaturated sample;
- the oxygen-saturated samples ventilated for five, 10 and 15 minutes burned at a slightly enhanced rate when compared to the unsaturated sample;
- the oxygen-saturated samples ventilated for 20 minutes and longer did not burn at an enhanced rate when compared to the unsaturated sample.

The demonstration confirmed that the 30-minute ventilation time referenced in the OFM guideline, "Preparation of a Smoking Policy in Long-Term Care Facilities" is reasonable and conservative.

For more information on this demonstration, contact Michael Ng at 416-325-3218.



Fire Marshal Bernard Moyle and then Commissioner of Emergency Management for Ontario Dr. James Young visited the nuclear power station at Bruce Power in Tiverton, Ontario on September 27 to review Bruce Power's emergency measures program. Pictured above are (left to right) Frank Saunders, Bruce Power's Vice President, Safety and Environment; Fire Marshal Moyle; Dr. Young; and Randy Henderson, Department Manager, Emergency Measures Department at Bruce Power. (Picture courtesy of Bruce Power)

O AFC and MFSIA: Joining forces for educational excellence

The following is an open letter released jointly by Rob Browning, President, Ontario Association of Fire Chiefs, and Mike Raine, President, Municipal Fire Service Instructors' Association.

Starting in May of 2005, the Ontario Association of Fire Chiefs and the Municipal Fire Service Instructors' Association will be joining forces to better serve the educational requirements of today's fire chiefs and training officers.

Many of the issues facing the Ontario fire service today are requiring more of a collaborative effort between these two great associations. The constant demand for the maintaining of our professional skills and competencies make this partnership a good

opportunity for everyone involved.

The O AFC Conference and the MFSIA Educational Seminar will share in two days of educational opportunities and also have the opportunity for separate specific training and association business. This type of collaborative fire service initiative is overdue and one that is welcomed by both associations.

Both the training officers and their respective fire chiefs can attend for the first time Canada's largest Fire Service Trade Show,

where many, if not all, of the fire service equipment suppliers will be on hand to work with both groups in making better equipment purchasing decisions.

These first steps are the beginning and foundation of a new trend, whereby in partnership, we can foster greater educational opportunities for all fire chiefs and training officers in the Ontario fire service and so create a prosperous future for all.

Sincerely,

Rob Browning and
Mike Raine

First certificates awarded

The first certificates for the OFM's Supervisor's/Program Specialist's Certificate Training Program have been awarded to five OFM employees for successfully completing the program.

Congratulations to Jim Fisher and Pierre Yelle, from the OFM's Fire Investigations and Evaluation section; and Dave Crowe, John O'Halloran, and Wayne Bennett from the OFM's Field Fire Protection Services.

Pictured at the top are (left to right) Trevor Bain, OFM Operations Manager; Pierre Yelle; Jim Fisher; and Bernie Silvestri, Assistant Deputy Fire Marshal. Pictured in the middle are Paul Leslie, OFM Operations Manager; John O'Halloran; and Tony Minto, Assistant Deputy Fire Marshal. Pictured at the bottom is Ted Wieclawek, OFM Operations Manager; Dave Crowe; and Tony Minto.



Prizes awarded for safety lessons

continued from page 6

approved lesson plans about safety were taught in classrooms. Every time a safety lesson was taught, teachers could submit a "Lesson Taught!" form to enter a draw for prizes, including class pizza parties, \$200 certificates for classroom supplies, a gas barbecue and a weekend getaway to Toronto.

Winners of the classroom pizza parties include: Jennifer Luxmore-Begin; Su Calpu; E. Kelly-Hanrath; Dianna Wright-Drzazga; France Martineau; Patricia Kelly; Monique Carriere; Frankl Esson; Mark Sokolski; and Mary Mercer.

Winners of the \$200 in classroom supplies are: Charles Epich; Helen Kotsopoulos; Ganielle Lanoue; Sharon Maxwell and Tammy Chase. Winners of the Toronto weekend getaway are: Caroline Parker; Heidi Werner; Laurel Venney; Karen Harrington and Angela Martell.

Fire not a concern, NFPA survey finds

Following a similar study in Canada, a recent survey from the National Fire Protection Association (NFPA) has found that many Americans underestimate their risk of fire. Just like Canadians, many Americans do not think fire will happen to them.

Choosing from a list of disasters, 31% of Americans surveyed in the NFPA study said they felt most at risk of a tornado, while only 27% named fire as the highest risk, followed by hurricane (14%), earthquake (9%), flood (9%) and terrorist attack (5%).

But among all those disasters, fires are actually more common, and many times more deadly. Fire departments responded to 1.6 million fires in the United States in 2003. While tornadoes average 70 deaths a year, fires killed 3,925 people in 2003, most of them in the home.

Earlier this year, a Canadian study commissioned by Duracell and the Canadian Association of Fire Chiefs (CAFC) revealed that 48% of Canadians feel they have almost no chance of being in a house fire. While 64% of Canadians claimed to have a home fire escape plan in place, 63% of those failed to practice their plan even once.

Only 28% of Canadians surveyed had replaced the batteries in their smoke alarms twice, as recommended by the CAFC, and 19% admitted to never having replaced the batteries – up 8% from last year. (See the September/October 2004 issue of the Messenger for more information on the Canadian study).

The NFPA survey asked which kind of disaster Americans feel most prepared for. The highest percentage of respondents (31%) said they felt most prepared for fire.

Their answers to other survey questions suggest they are prepared, but not prepared enough. Ninety-six percent have smoke alarms, a new high for the nation. But only one-fourth have developed and rehearsed a plan for escaping their home in a fire.

The NFPA survey also points to other challenges. Small communities, poorer households and less educated households had lower rates of smoke alarm ownership. Only 8% of people whose smoke alarms went off responded as recommended: assuming there was a fire and leaving the house immediately.

NFPA statistics indicate that deaths from fire in the United States have been declining steadily over the past two decades. In 2002, fire deaths dropped sharply. In 2003, the death rate returned to previous levels, jumping 16% overall and 18% for deaths from fires in the home.

Excerpts of this article are reprinted from a NFPA media release dated October 3, 2004.

PMBP web site goes live

BY CAROL-LYNN CHAMBERS,
OFM OPERATIONS MANAGER

The Ontario Fire Service Performance Measurement and Benchmarking Project reached another major milestone on November 4, 2004, with the release of www.ofspmbs.ca, the first full version of the web-based performance measurement and benchmarking tool.

On December 2, 2004, the Office of the Fire Marshal hosted a Recognition luncheon for Project Working Group and Steering Committee members, to formally acknowledge the outstanding contributions of our partners on this

collaborative project to date. More than 30 members attended, where Fire Marshal Bernard Moyle and Deputy Fire Marshal Doug Crawford presented each with a unique "glass apple" recognition award as a token of appreciation.

Following the luncheon, the Project Working Group took the next steps to lay the foundation for the future, by formally convening an inaugural meeting of the new Standing Users Group. The Standing Users Group has been established as a key way to sustain momentum and provide ongoing leadership and

oversight to this important management tool for the fire service, in the continued spirit of the partnership.

As of December 20, more than 115 fire departments have requested and received their user ID and password for www.ofspmbs.ca.



On December 2, Deputy Fire Marshal Doug Crawford (left) and Fire Marshal Bernard Moyle presented OFM Operations Manager Carol-Lynn Chambers with a recognition award for her outstanding contribution to the PMBP.

Fire Safety Commission Decision

Decision No. 2002A005-136
Date: September 25, 2002

The following is a synopsis of a Fire Safety Commission hearing. More information may be obtained from the Fire Safety Standards section of the OFM, telephone 416-325-3100.

SUBJECT MATTER

The issue before the tribunal was a residential building that was found by the fire department to be unsafe for occupancy. The fire department ordered that the owner close the property immediately, until a list of fire safety deficiencies have been corrected. The Order to Close the building was approved by the Fire Marshal as required by the *Fire Protection and Prevention Act*. The owner appealed the Order to Close and the matter was referred to the Fire Safety Commission.

GENERAL DESCRIPTION OF PREMISES

The building is three storeys (plus basement) in height, is of combustible construction and has a building area of 69 m². There is an enclosed front porch on the north side of the building with a floor area of 10 m².

The basement contains a furnace room and the owner's apartment. The first floor has a kitchen and two living rooms. A main entrance vestibule is also located on the first floor and provides access to all floors. The second floor has three bedrooms and one washroom. The third floor has two bedrooms and one washroom. The building was vacant at the time of inspection due to a previous fire. It was alleged to have been used as a rooming, boarding and lodging facility. The five bedrooms on the second and third floors could accommodate up to five tenants.

A centrally located exit stair provides access to the second and third floors from the ground floor main entrance vestibule. This stair is contiguous to the corridors on the first, second and third floors. A separate stair serves as an exit from the first floor and basement. A third exit from the first floor is also available through an exterior door in the kitchen.

An electrically powered interconnected smoke alarm system is provided throughout the building, but is inoperative.

REASONS FOR APPEAL

The owner claimed that Section 9.3 and 9.5 should not apply to his building, as there are never more than three persons occupying the

property.

APPELLANT'S POSITION

The owner has vacated the building and has completed some of the conditions as set out in the Order to Close.

RESPONDENT'S POSITION

The fire department identified the building as unsafe and that it be closed immediately for the following reasons:

1. The electrical wiring is unsafe and poses a risk of fire to the occupants.
2. The fire alarm and detection features provided in the building are inadequate and inoperative. In the event of fire, the building occupants lack a means of being notified of a fire condition within the building.
3. The exit features provided in the building are inadequate for the escape of occupants in the event of fire in as much as:
 - (a) Two exits are not provided from occupied storeys as required by subsection 9.3.3. of the Ontario Fire Code.
 - (b) The interior stairwell and doors in the stairwell serving as an exit lack an adequate fire-resistance rating and fire-protection rating and related hardware, necessary for the protection of occupants escaping in event of fire.
 - (c) The interior surfaces of the stairwell exit have a high degree of flame spread that may increase the spread of fire in the exit.

The building is closed until the following conditions be complied with:

1. The contiguous interior exit stairway/corridor is fire separated from the remainder of the building by a fire separation having a minimum 30-minute fire-resistance rating.
2. Closures along the contiguous exit stairway/corridor are provided with a minimum 20-minute fire-protection rating and equipped with self-closing and latching devices.
3. A second exit is provided from the third

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First national public educators forum held

The Council of Canadian Fire Marshals and Fire Commissioners (CCFM/FC) held its genesis Forum of Fire and Life Safety Public Educators of Canada in Toronto from November 21-25.

Public educators identified by fire marshals and fire commissioners

from each province and territory, the Department of National Defence and Human Resources Skills Development Canada, and lead representatives of the Canadian Association of Fire Chiefs (CAFC), participated in the forum.

"This is a great opportunity to hear from my colleagues and their public educators about what educational programs are working and to learn of new fire safety and prevention initiatives," said Ontario Fire Marshal Bernard Moyle. "We all can only prosper from the knowledge to be shared through this type of dialogue."

John McLaughlin, New Brunswick Fire Marshal and Chair of the CCFM/FC Fire Pre-

vention Committee, led the group in a four-day exercise sharing best practices and identifying potential gaps in life and fire safety education design and delivery. The primary objective of the forum was to provide the Council with ideas and direction regarding the future of public education nationally. A report resulting from the discussions at the forum, including recommendations, is expected to be released in 2005.

"The participants in this forum worked very hard to set priorities for the CCFM/FC and the CAFC to consider in the advancement of fire and life safety public education initiatives nationally," said McLaughlin. "I commend each and every one of them for their focus and energy in attaining our objectives."

"It never ceases to amaze me how the fire service in Canada can pull together to make things happen in such a big way," continued McLaughlin. "There is no doubt that the collegial efforts of these professional fire and life safety educators will help set a new and enhanced direction for fire and life safety programs across our country."



Public educators from across the country met in Toronto to identify potential gaps in public education programs. The forum was organized by the Council of Canadian Fire Marshals and Fire Commissioners Fire Prevention Committee. (Picture courtesy of Gina Pontikas)

Fire Safety Commission Decision

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storey or alternatively the third storey shall not contain an occupancy.

4. The integrity of the second floor fire separation is restored to achieve a minimum 30-minute fire-resistance rating.

5. A fire alarm system is installed in compliance with sentence 9.3.4.1.(1) of the Ontario Fire Code, O. Reg. 388/97, as amended.

6. Battery powered smoke alarms are installed in each sleeping room.

7. Fire extinguishers are pro-

vided on each storey as approved by the city's fire department.

8. A fire safety plan as required by section 2.8 of the Ontario Fire Code, O. Reg. 388/97, as amended, has been approved by the city's fire department.

9. Electrical Safety Order Defect Notice is fully complied with.

10. The building is inspected and approved for re-occupancy by the city's fire department.

COMMISSION'S RULING

The Commission ruled that the Order to Close be upheld.

REASONS

The tribunal believes that the property was occupied as a boarding, lodging and rooming house as defined in Section 9.3 of the Ontario Fire Code. It was evidenced that at the time of the inspections, lodging was provided for more than three persons in return for remuneration or the provision of services or both.

The tribunal also believes that the public is entitled to a minimum level of fire safety in any building in the province of Ontario.

New in the OFM Library

The Fire Sciences Library & Audio-Visual Resource Centre provides current fire resources to support the Office of the Fire Marshal as well as fire departments, emergency services and fire related industries. The collection consists of 9,000+ books, standards, statute law, reports; 80+ journals; and over 1,300 audio-visual resources. Check out our latest books and videos.

New Books



2004 Emergency Response Guidebook: A Guidebook for First Responders During the Initial Phase of a Dangerous Goods/Hazardous Materials Incident by Transport Canada (2004)

Fire Marshal's Public Fire Safety Council: Annual Report 2000-2001 by the Office of the Fire Marshal. (2004)

First In, Last Out: Leadership Lessons from the New York Fire Department by John Salka and Barret Neville. (2004)

Office of the Fire Marshal Annual Report 2002/2003 by Office of the Fire Marshal, (2004)

Physical Work Limits for Toronto Firefighters in Warm Environments: Defining the Problem and Creating Solutions by Glen Selkirk and Tom McLellan. (2003)

Protecting Emergency Responders: Community Views of Safety and Health Risks and Personal Protective Needs by Tom LaTourette and D.S. Peterson. (2003)

Rural Firefighting Handbook by Larry Davis and Dominic Colletti. (2002)

Technical Rescue Operations: Planning, Training and Command by Larry Collins. (2004)

New Videos

American Heat: Extreme Firefighting

Program explores firefighting techniques in extreme climatic activities. It focuses on the Mann Gulch wildland fire 1949 and Alaska's Project Code Red. Covers such issues as impaired personal mobility due to heavy clothing in sub-freezing conditions and hydrant and hoses freezing in the extreme cold.

Firefighter I and II Review

This DVD and CD visually demonstrates and explains the 90-plus testable skills required by the National Fire Protection Association to pass the firefighter certification exam. The DVD includes videos that review the steps and procedures of each testable skill and a 150-question practice test. The CD-ROM is a self-test and assessment tools consisting of approximately 1,000 questions and other study aids including digital flash cards.

Heat! Working in Hot Environments

This program discusses the risks involved in working in hot environments and explains how individuals can protect themselves through preventative measures. It describes the signs and symptoms of heat injuries and explains methods to alleviate heat injuries and demonstrates first aid treatments.

Fire Service Rescue Series (consists of 10 programs)

Program One: Rescue Apparatus and Equipment

Program Two: Rope Rescue

Program Three: Confined Space Rescue

Program Four: Structural Collapse Rescue

Program Five: Trench/Excavation Rescue

Program Six: Vehicle and Machinery Rescue

Program Seven: Water and Ice Rescue

Program Eight: Wilderness Search and Rescue

Program Nine: Elevator Rescue

Program Ten: Fireground Search and Rescue



The Fire Sciences Library & Audio-Visual Resource Centre is located at the head office of the OFM, 5775 Yonge St., 7th Floor, Toronto. We welcome visitors to come to the library and borrow from our collection. We will also courier material directly to clients. Hours are Monday – Friday 8:30am to 4:15pm. Visit our Web site by clicking on Resource Centre at www.ofm.gov.on.ca or call 416-325-3235/3236 (Library) or 416-325-3121 (AV). Email: firesciences.information@ofm.ca

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A.2 containment; means of egress; fire alarms and detection; suppression

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Belleville firefighter bikes for cancer research

Ray Ellis cycles to Firefighter Combat Challenges across the country to raise funds.

After 18 years as a firefighter, Ray Ellis of the Belleville Fire Department is used to long, exhausting days working for the safety of his community.

Now Ellis has taken on a new exhausting challenge for people's health and safety. For the last two years, Ellis has been competing in Firefighter Combat Challenges, competitions across North America aimed at challenging the fitness of firefighters. Last summer Ellis

started traveling to challenges located across the country on his bike to raise funds for cancer research. Ellis calls his ride Ray's Ride for Cancer.

"I started Ray's Ride for Cancer for two reasons," said Ellis. "The first was to bring the public's attention to the cancer hazards firefighters are faced with everyday on the job. The new fabrics and liquid chemicals that are being developed to make our life easier are giving off more deadly toxic smoke every day."

"Second, my family has been hit very hard with cancer," Ellis continued. "My situation is no different than yours. Each of us will be affected by cancer somehow in our lifetime.... Statistics say that one in three will contract some form of cancer. That is a statistic that must be changed."

Last year, Ellis rode from Belleville to Petawawa for a competition in July, then to Quinte West for the competition there. He rode to Longueuil, Quebec in August, then to Sherbrooke, Quebec for the Canadian National Championship.

"The 2005 season will take me from Belleville to Windsor for the

competition there, then on to Edmonton for the Canadian Nationals in September," said Ellis. Ellis will leave for Windsor on August 8, arriving August 13. He plans to arrive in Edmonton on September 6 or 7.

"My goal is to ride 160 kilometres a day," Ellis said. "Last year was a feeling out process. People at all the competitions were very receptive when I arrived."

Ellis said that when he was biking last year, it was just him on the road every day. This year he'll have a motor home accompanying him.

So far, Ray's Ride for Cancer has raised about \$6,600 for the Canadian Cancer Society. People interested in sponsoring Ray's Ride can visit Ellis' web site at www.raysride.com.

Tax receipts are available for donations over \$20.



"Statistics say that one in three will contract some form of cancer," says Ellis. "That is a statistic that must be changed."



Belleville firefighter Ray Ellis started biking to Firefighter Combat Challenges last year as part of Ray's Ride for Cancer.

M **The Ontario Fire Service** **Messenger**

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November/December 2004

Fire Behaviour and the Chemistry of Combustion



Teaching Plan

Practical Self-Check

Introduction:

Firefighters are bound by the technical and ethical standards of the profession. Possessing both theoretical and technical knowledge is an absolute must if you are going to be a true professional.

This session deals with fire behaviour, its classification, and the four basic methods of extinguishment.

Learning Outcomes:

The firefighter will:

- a) define fire
- b) explain the reasons for studying fire and its behaviour
- c) explain the elements of the fire triangle and the fire tetrahedron and their relationship to one another: fuel – oxygen – heat – molecular chain reaction
- d) define and describe the stages of fire
- e) describe the types of fire
- f) define the following terms relating to fire – phenomenon of BLEVE, flashover, backdraft, rollover, pyrolysis, flash point, fire point and ignition temperature
- g) identify the four classes of fire and give two examples of fuels in each class
- h) define the four methods of heat transfer
- i) describe the methods of extinguishment
- j) describe the five sources of heat energy
- k) describe the effects of heat on solid, liquid and gaseous fuels
- l) describe the nature of the products of combustion produced during a fire
- m) describe the factors that influence the production of toxic gases
- n) identify the most common combustion gases produced during a fire and describe their sources and effect on fire
- o) describe the physical properties of each of the common combustion gases
- p) describe the burning characteristics of the four classes of fire
- q) describe common fire service extinguishing agents
- r) describe the extinguishing agents appropriate to each class of fire along with the advantages and disadvantages of each
- s) describe the ways different types of building construction affect fire behaviour
- t) identify structural features which influence fire spread and safety
- u) describe the influence of the following factors on total fire safety:
 - how building construction affects fire behaviour
 - how structural features influence fire spread and safety

Expectations of the Participant:

- a) listen actively
- b) participate in group discussions
- c) ask questions for clarification and understanding
- d) answer instructor questions
- e) be a team player

Key Points and Terms	Student Learning Activity	References and Resources	Trainer/Facilitator Activity
Reasons for studying fire: • firefighter safety • methods of extinguishment • methods of spread • methods of preventing • effects on people, building materials & clothing	Read IFSTA, Chapter 2: Fire Behaviour	IFSTA Essentials of Fire Fighting, 4th Edition	• lead lesson • record on flip chart • answer questions • involve learners • emphasize the importance of knowing how fire burns and reacts
The Fire Tetrahedron • heat □ sources □ amount □ intensity • fuel □ matter □ solid □ liquid □ gas • effects of heat on matter □ expansion □ fusion □ vaporization □ pyrolysis • oxygen □ sources □ supports combustion • chemical chain reaction □ molecular bonds □ free radicals □ oxidation reaction □ exothermic □ self-sustaining	Read IFSTA, Chapter 2: Fire Behaviour • listen • take notes • ask questions	IFSTA Essentials of Fire Fighting, 4th Edition	• lead lesson • record on flip chart • answer questions • involve learners • explain the concept that only gases burn • explain the significance of each process • explain the difference between supporting combustion and being flammable • explain the concept of being exothermic and self sustaining (i.e. no external source of ignition required at this point)

Key Points and Terms	Student Learning Activity	References and Resources	Trainer/Facilitator Activity
Combustion • complete • incomplete			• explain how we almost never deal with complete combustion
Stages of Fire • ignition • growth • fully developed • decay			• explain the special significance of a fire in decay stages
Classification of fire • "A" • "B" • "C" • "D"			• give examples of each
Special fire situations • backdraft □ temperatures □ O² starvation □ smouldering □ smoke colour □ pressure □ amount of flame □ O² introduction • flashover □ 480°C - 650°C □ pyrolytic action □ fast heat increase □ room and contents • rollover □ superheated air □ ignition temperature • BLEVE □ increased pressure □ flame impingement □ area above liquid level	Read IFSTA, Chapter 2: Fire Behaviour • listen • take notes • ask questions	IFSTA Essentials of Fire Fighting, 4th Edition	• lead lesson • record on flip chart • answer questions • involve learners • cover backdraft thoroughly; point out the dangers and how to avoid • explain the dangers and preventative measures of flashover; outline survival techniques • define BLEVE • explain BLEVE theory and how cooling the area above the liquid can help avoid it

Key Points and Terms	Student Learning Activity	References and Resources	Trainer/ Facilitator Activity
Methods of extinguishment • cooling □ reduce temperature □ reduce vapour production • fuel removal □ shut-off fuel □ remove solids □ least used method • smothering □ remove O² • chemical flame inhibition □ special agents	Read IFSTA, Chapter 2: Fire Behaviour • listen • take notes • ask questions	IFSTA Essentials of Fire Fighting, 4th Edition	• lead lesson • record on flip chart • answer questions • involve learners • remind learners that only gases burn
Methods of heat transfer • convection □ liquids □ gases □ heat rises □ direct flame contact • conduction □ solids • radiation □ heated waves • direct flame contact			• explain each of the methods and examples of where they can be found in actual fire situations, i.e. for conduction the example could be a steel beam heating a combustible surface some distance away from the actual fire
Spontaneous combustion • chemical • biological			• discuss how for a biological reaction the agent(s) must have been formerly living matter

Summary:

As mentioned earlier, it is imperative that firefighters understand how fires burn so that you can understand what is happening when fire reacts in a certain way. Only through this understanding can you learn how to protect yourself and others from the many dangers involved in fire fighting.

This knowledge also allows us to take measures necessary to prevent fires. That, after all, is the ultimate goal of the fire service.

Evaluation:

- 1) Practical self-check
- 2) Any testing the trainer wishes to provide

Practical Self-Check

Directions: The firefighter will relate to a supervisor the principles of fire behaviour as they apply to a structure fire.

	Level of Performance		
	Yes	No	N/A
Fire behaviour and spread • conduction, e.g. metal pipes • convection, e.g. flashover • radiation, e.g. exposures Rollover • cause • method to prevent Flashover • cause • method to prevent Backdraft • cause • method to prevent BLEVE (Boiling Liquid Expanding Vapour Explosion) • cause • method to prevent Method of extinguishment • cooling, e.g. water • oxygen removal • fuel removal • interruption of chemical chain reaction			

Notes: