

CANASA

Fire Prevention Session
February 3, 2010



- Single stage Fire Alarm System
 - Meeting place at the “hydrant” on the opposite side of the driveway
- Washrooms
 - Gentlemen’s to the north of here
 - Ladies to the south

Welcome

- Brian Maltby will chat about;
 - F.P.P.A, 1997
 - Ontario Fire Code
 - NFPA, CAN/ULC Standards
 - Ontario Building Code
- Brian Scott will provide an overview of the programs offered and conduct a tour of the Fire and Life Safety Education Centre

Overview

- High-level approach, for two reasons;
 - I am not a subject matter expert!
 - What takes four months to understand, we are attempting to do in an hour and a half!
 - Significant amount of material that we likely will not get to.
 - (Questions are welcomed at any time, as long as they are easy!)

Approach

- The minister may make regulations that are considered advisable for the purpose of establishing a fire code for Ontario governing fire safety standards for equipment, systems, buildings, structures, land and premises including regulations.
- A regulation, including the fire code, supersedes all municipal by-laws respecting fire safety standards for land and premises.

Fire Protection & Prevention Act, 1997

- **Offences**

- Every person is guilty of an offence if he or she;
 - Hinders, obstructs, or interferes with the Fire Marshal or Assistant to the Fire Marshal,
 - Prevents an inspector from entering land or premises, refuses to answer questions on matters relevant to the inspection.
 - Provides the inspector with information that the person knows, or ought reasonably to know, to be false or misleading.
 - Refuses or neglects to obey or carry out the directives of the Fire Marshal or Assistant to the Fire Marshal.

**Fire Protection & Prevention Act,
1997**

- **Penalty**

- An individual convicted of one of the offences listed above is liable to a fine of not more than \$20,000 or imprisonment of a term of not more than one year, or both.
- An individual convicted of an offence for contravening the fire code is liable to a fine of not more than \$50,000 or imprisonment of a term of not more than one year, or both.
- A corporation convicted of one of the offences listed above is liable to a fine of not more than \$100,000.
- A director or officer of a corporation who knows that the corporation is violating or has violated a provision of the fire code is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or both.

Fire Protection & Prevention Act, 1997



Ontario Fire Code

- **Division A, Part 1**

- **Responsibility**

- Unless otherwise specified, the owner is responsible for carrying out the provisions of the fire code.

- **Defined terms**

- **Owner** means any person, firm or corporation having control over any portion of the building or property under consideration and includes the persons in the building or property.
- **Check** means visual observation to ensure the device or system is in place and is not obviously damaged or obstructed.
- **Inspection** means physical examination to determine that the device or system will apparently perform in accordance with its intended function.
- **Test** means the operation of a device or system to ensure that it will perform in accordance with its intended operation or function.

Ontario Fire Code

- **Division A, Part 1**

- "Checking", "inspection" and "testing" of fire safety devices shall be conducted in accordance with the this code.
- Any appliance, device or component that does not operate as intended shall be repaired or replaced.
- Records of test and corrective measures shall be retained so that at least the current and the immediately reports are available, and at least two years.
- Initial verification or test reports for fire protection systems installed after November 21, 2007 shall be retained throughout the life of the system.

Ontario Fire Code

- **Qualifications**

Any person who performs the work on a fire alarm system shall

(a) have successfully completed a program or course acceptable to the Fire Marshal,

(b) produce for inspection, upon request by the owner or the Chief Fire Official, a copy of a certificate or document attesting to the successful completion of a program or course referenced in Clause (a), and

(c) perform the inspection, test, repair, replacement or alteration in accordance

Ontario Fire Code

- Division B, Part 2

- Exit signs shall clearly visible and maintained in a clean and legible condition.
- Exit signs shall be illuminated while the building is occupied.
- Emergency lighting shall be inspected monthly and tested monthly to ensure that that they will function upon failure of the primary power supply.
- Emergency lighting shall be tested annually to ensure that the unit will provide emergency lighting for the design duration and that they will recover as per the manufacture specifications.

Ontario Fire Code

- Division B, Part 6
 - Fire Alarm Systems
 - Shall be tested monthly and maintained annually
 - Where a FAS is monitored, the owner shall record whether all signals from the tests have been received.

Ontario Fire Code

- Division B, Part 6

- Fire Alarm Systems

- F.A.S shall be maintained in operating condition.
 - Once activated, a F.A.S. shall not be manually silenced unless it has been confirmed by supervisory staff, in accordance with the approved procedures as detailed in the F.S.P.
 - The owner shall ensure that any person performing the annual tests or annual inspections and repairs are qualified as per the OFC.

Ontario Fire Code

- Division B, Part 6
 - 6.3.1.1. Access to fire alarm and voice communication system components requiring inspection or servicing shall be kept unobstructed.
 - 6.3.1.2. (1) Where the Building Code or this Code require a fire alarm system to be monitored to transmit a signal to the fire department, the building owner shall ensure the continuation of the monitoring.

Ontario Fire Code

- Division B, Part 6
 - (2) Where the fire alarm system monitoring referred to in Sentence (1) is provided by a central station, the building owner shall obtain written documentation from the central station operator that the monitoring service complies with
 - (a) NFPA 71, "Standard for the Installation, Maintenance, and Use of Signaling Systems for Central Station Service", or
 - (b) CAN/ULC-S561, "Installation and Services for Fire Signal Receiving Centres and Systems".

Ontario Fire Code

- Division B, Part 6

- (3) Where a fire alarm system is monitored by a central station to meet the requirements of the Building Code or this Code, the operator of the central station shall provide, upon request by the owner or Chief Fire Official, a document attesting that the monitoring service is in compliance with one of the standards identified in Sentence (2).
- (4) Despite Article 1.2.1.1. of Division A, where the Building Code or this Code requires a fire alarm system to be monitored and the monitoring is provided by a central station, the operator of the central station shall be responsible for maintaining the monitoring service and associated monitoring equipment in accordance with one of the standards identified in Sentence (2).
- (5) Where the fire alarm system is monitored by a proprietary signalling system, such system shall be maintained in accordance with Chapter 4 of NFPA 72, "Standard for the Installation, Maintenance, and Use of Protective Signaling Systems".

Ontario Fire Code

- Division B, Part 6
 - 6.3.1.3. When a fire alarm or voice communication system or any part thereof is shut down, the supervisory staff shall be notified in accordance with Section 2.8.
 - 6.3.1.4. Fire alarm and voice communication systems shall be maintained in operating condition.

Ontario Fire Code

- Division B, Part 6

- 6.3.1.5. (1) Once activated, a fire alarm system shall not be manually silenced unless it has been confirmed by supervisory staff, in accordance with approved procedures as detailed in the fire safety plan, that no fire emergency exists.
- (2) Sentence (1) does not apply where a silencing switch is part of an approved integrated voice communication system and signal silencing takes place to allow fire emergency instructions to be heard.
- 6.3.1.8. Repair, replacement and alterations of fire alarm system components shall be in accordance with CAN/ULC-S524, "Standard for the Installation of Fire Alarm Systems".

Ontario Fire Code

- Division B, Part 6
 - 6.3.2.1. (1) The owner shall ensure that any person performing the annual tests or annual inspections required by this Subsection and any person performing repair, replacement or alterations referred to in Article 6.3.1.8. is in compliance with the requirements of
 - (a) Clause 1.2.1.2.(1)(a) of Division C, or
 - (b) Sentence 1.2.1.2.(2) of Division C.

Ontario Fire Code

- Division B, Part 6

- 6.3.2.2. (1) Except as provided in Sentence (2), a fire alarm system, with or without voice communication capability, shall be inspected and tested in conformance with CAN/ULC-S536, "Inspection and Testing of Fire Alarm Systems".
- (2) Despite Clause 5.7.4.1.6. of CAN/ULC-S536, "Inspection and Testing of Fire Alarm Systems", a UL listed smoke detector sensitivity instrument may be used to conduct annual sensitivity testing of smoke detectors.
- (3) A description of the fire alarm system as required in Clause 3.6 of CAN/ULC-S536, "Inspection and Testing of Fire Alarm Systems", shall be kept current and maintained in the building at an approved location.

Ontario Fire Code

- Division B, Part 6

- (4) A record of each device, component and circuit of the fire alarm system that is inspected and tested in accordance with Sentence (1) shall
 - (a) indicate whether the device, component or circuit is in proper working order, and
 - (b) be kept in accordance with Article 1.1.2.1.
- (5) Where a fire alarm system is monitored to transmit a signal to the fire department, the owner shall record whether all signals from the tests conducted in Sentence (1), or other events, are received by the monitoring station, and records shall be kept in accordance with Article 1.1.2.1.

Ontario Fire Code

- **Division B, Part 6**

6.3.2.3. The central alarm and control facility shall be checked daily for indication of trouble in the system.

Ontario Fire Code

- Division B, Part 6
 - 6.3.2.6. (2) Interconnected smoke alarms shall be tested and maintained in operating condition in conformance with CAN/ULC-S552, “Standard for the Maintenance and Testing of Smoke Alarms”, and as required by this Article.
 - (3) The power supply shall be checked weekly.
 - (4) The operability of the interconnected system shall be confirmed monthly, by testing at least one smoke alarm using its test function, on a rotational basis.

Ontario Fire Code

- Division B, Part 6

- (5) Where installed, each manual pull station shall be tested to ensure activation of the interconnected smoke alarms on an annual basis.
- (6) Written records shall be kept of weekly checks of the power supply for at least six months after they are made, and be available upon request to the Chief Fire Official.
- (7) Monthly and annual tests shall be recorded and kept in accordance with Article 1.1.2.1.

Ontario Fire Code

- Division B, Part 6
 - 6.3.3.2. (1) Smoke alarms shall be maintained in operating condition by the owner.
 - 6.3.3.3. (1) The landlord shall provide a copy of the smoke alarm manufacturer's maintenance instructions or approved alternative to the occupant in each rental dwelling unit, including the occupant in a dwelling unit regulated under Section 9.8.
 - 6.3.3.4. No person shall intentionally disable a smoke alarm so as to make it inoperable.

Ontario Fire Code

- Division B, Part 6
 - 6.3.3.5. (1) When smoke alarms are being replaced, the installation shall not reduce the level of detection required by
 - (a) the Building Code in effect at the time of construction of the dwelling unit, or
 - (b) municipal by-laws in effect before this Subsection came into force, whichever is applicable.

Ontario Fire Code

- Division B, Part 6

Associated Standards/ Other Recognized Documents

NFPA 71, 1989	Standard for the Installation, Maintenance and Use of Signaling Systems for Central Station Service
NFPA 72, 1990	Standard for the Installation, Maintenance and Use of Protective Signaling Systems
CAN/ULC-S524-01	Standard for the Installation of Fire Alarm Systems
CAN/ULC-S536-04	Inspection and Testing of Fire Alarm Systems
CAN/ULC-S552-02	Standard for the Maintenance and Testing of Smoke Alarms
CAN/ULC-S561-03	Installation and Services for Fire Signal Receiving Centres and Systems

Ontario Fire Code

- NFPA 71, 1989
 - This standard sets out the installation, maintenance and use of central station signaling systems, and includes;
 - Central station physical plant,
 - Exterior communications channels,
 - Satellite stations,
 - Signaling facilities located at the protected premise.

Ontario Fire Code

- **NFPA 72, 1990**

The first edition of the *National Fire Alarm Code*, NFPA 72, was published in 1993,

Was a consolidation of;

the 1989 edition of NFPA 71, *Standard for the Installation, Maintenance, and Use of Signaling Systems for Central Station Service*;

the 1990 edition of NFPA 72, *Standard for the Installation, Maintenance, and Use of Protective Signaling Systems*;

the 1990 edition of NFPA 72E, *Standard on Automatic Fire Detectors*;

the 1989 edition of NFPA 72G, *Guide for the Installation, Maintenance, and Use of Notification Appliances for Protective Signaling Systems*;

the 1988 edition of NFPA 72H, *Guide for Testing Procedures for Local, Auxiliary, Remote Station, and Proprietary Protective Signaling Systems*;

the 1989 edition of NFPA 74, *Standard for the Installation, Maintenance, and Use of Household Fire Warning Equipment*.

Ontario Fire Code

- CAN/ULC-S524-01
 - This standard deals with the requirements for the installation and interconnection of all necessary devices and equipment to operate as a fire alarm system with or without voice communication capability.
 - Defines power supply, electrical supervision, wiring, plans and specifications, control units, data communication links, installation of devices

Ontario Fire Code

- CAN/ULC-S536-04
- Provides the requirements for the inspection and testing of fire alarm systems and specifies the devices and functions to be inspected, tested and documented for the daily, monthly and yearly inspections and tests.
- Includes inspections and tests of;
 - Control Units and Transponders
 - Voice Communication tests
 - Power Supplies
 - Annunciators and Remote Trouble Signal Units
 - Printers
 - Data Communication Links
 - Filed Devices

Ontario Fire Code

- CAN/ULC-S536-04
- Clause 3.6 – A description of the system, as installed at the time of the annual inspection and test, including the sequence of operation of the system shall be available and documented as detailed in Appendix C, Description of Fire Alarm System for Inspection and Test Procedures.

Ontario Fire Code

- **CAN/ULC-S552-02**

This standard applies to the maintenance and testing of smoke alarms within dwelling units and sleeping rooms that are not part of a dwelling unit.

The exterior of the smoke alarm shall be vacuumed with a brush attachment.

Each alarm shall be tested with smoke (incense stick, punk stick, smoldering cotton string).

Battery shall be inspected and properly re-installed.

A change of tenant requires that the smoke alarm be tested.

Ontario Fire Code

- CAN/ULC-S561-03
- This standard sets out the requirements for the;
 - Construction, operation, installation, inspection and tests applicable to fire signal receiving centres for fire protective signaling services utilizing fire signal receiving centre facilities and satellite centres, signal processing centres and bridging centres

Ontario Fire Code

- CAN/ULC-S561-03
- Building requirements;
 - Location in relation to other occupancies
 - Fire separations
 - Location of electrical distribution panels
 - Protection against flooding
 - Minimum two access to exits
 - Protection against entry

Ontario Fire Code

- CAN/ULC-S561-03
- Signal Receiving Equipment;
 - Shall comply with the construction and performance requirements as set out in CAN/ULC-S561 or S-559
 - Shall be installed in conformance with CAN/ULC-S524
 - Field wiring install in conformance with Canadian Electrical Code
 - Spare equipment and parts shall kept on site and be able to be placed in service within 30 minutes

Ontario Fire Code

- CAN/ULC-S561-03
- Centre Equipment;
 - Fire protection equipment must be provided, including;
 - fire extinguishers,
 - fire alarm system,
 - multi-line telephone system,
 - emergency lighting,
 - Emergency generator
 - Electric and battery clocks and date/time stamps checked daily against NRC's official time signal

Ontario Fire Code

- CAN/ULC-S561-03
- Power Supply;
 - Installed in conformance with Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, CSA C22.1.
 - Emergency power supply must be provided to signal receiving and transmitting equipment, time keeping, emergency lighting, environmental control system, vestibule intercom, CCTV and door control systems, exterior and interior communications systems and computers and other devices for the operation of incoming and outgoing signals and record keeping.

Ontario Fire Code

- CAN/ULC-S561-03
- Power Supply;
 - Diesel generator shall be installed in conformance with CSA C282, Emergency Electrical power Supply for Buildings and be capable of providing emergency power for not less than 24 hours.

Ontario Fire Code

- CAN/ULC-S561-03
- Cables and Wiring;
 - Installed in conformance with Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations, CSA C22.1. Sections 12, 56 & 60 and the manufacturers' installation instructions

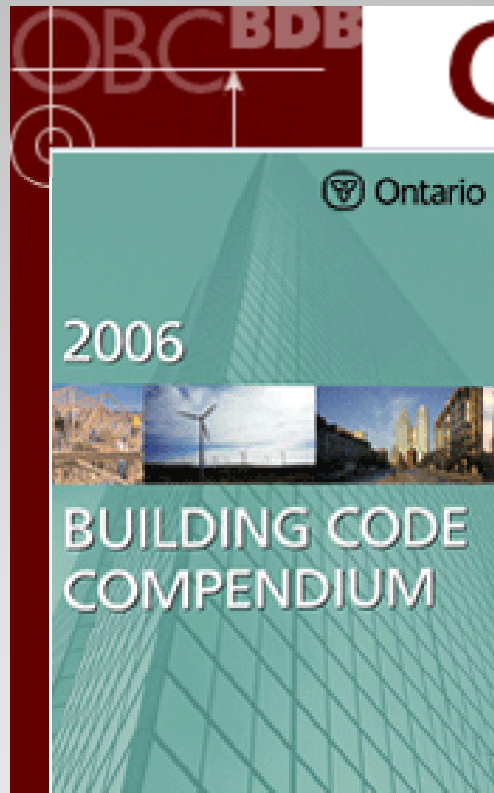
Ontario Fire Code

- CAN/ULC-S561-03
- Protection Service;
 - Describes the installation of the signal transmitting unit, electrical supervision, signaling services, equipment and devices
 - Periodic inspections and tests

Ontario Fire Code

- CAN/ULC-S561-03
- Communications Systems;
 - Describes the methods of communication between the protected premises and the fire signal receiving centre.

Ontario Fire Code



Ontario Building Code

- Division B, Part 3
- **3.2.4.1. (2)** Except as permitted by Sentences (3) to (5) and Sentence 3.2.4.2.(4), a fire alarm system shall be installed in a *building* that contains,
 - (a) a *contained use area*,
 - (c) more than 3 *storeys*, including *storeys* below the *first storey*,
 - (d) a total *occupant load* more than 300, other than in open air seating areas,
 - (e) an *occupant load* more than 150 above or below the *first storey*, other than in open air seating areas,
 - (f) a school, college, or child care facility, with an *occupant load* more than 40,
 - (g) a licensed beverage establishment or a restaurant, with an *occupant load* more than 150,
 - (h) a *medium hazard industrial occupancy* or a *low hazard industrial occupancy* with an *occupant load* more than 75 above or below the *first storey*,
 - (i) a *residential occupancy* with sleeping accommodation for more than 10 persons,
 - (j) a *high hazard industrial occupancy* with an *occupant load* more than 25,
 - (k) an *occupant load* more than 300 below an open air seating area,
 - (m) a *care and treatment occupancy* for more than 10 persons receiving care or treatment, or
 - (n) a *care occupancy* for more than 10 persons receiving care.

Ontario Building Code

- Division B, Part 3

- **(3)** If each *dwelling unit* has direct access to an exterior *exit* facility leading to ground level, a fire alarm system is not required in an apartment *building*,
 - (a) in which not more than 4 *dwelling units* share a common *means of egress*, or
 - (b) that is not more than 3 *storeys* in *building height*.
- **(4)** A fire alarm system is not required in a *hotel* 3 *storeys* or less in *building height* provided each *suite* has direct access to an exterior *exit* facility leading to ground level.
- **(5)** A fire alarm system is not required in a *storage garage* conforming to Article 3.2.2.83. provided there are no other *occupancies* in the *building*.

Ontario Building Code

- Division B, Part 3
- **3.2.4.5. (1)** Fire alarm systems, including those with voice communication capability, shall be installed in conformance with CAN/ULC-S524, "Installation of Fire Alarm Systems".
- **(2)** A fire alarm system shall be verified in conformance with CAN/ULC-S537, "Verification of Fire Alarm Systems", to ensure satisfactory operation.

Ontario Building Code

- Division B, Part 3
 - **3.2.4.7. Signals to Fire Department**
- (1) If a fire alarm system is required to be installed and a single stage system is provided, the system shall be designed to notify the fire department in conformance with Sentence (4) that an *alarm signal* has been initiated in,
 - (a) a Group A *occupancy* having an *occupant load* more than 300,
 - (b) a Group B *occupancy*,
 - (c) a Group F, Division 1 *occupancy*,
 - (d) a *building* regulated by the provisions of Subsection 3.2.6., or
 - (e) a *building* containing *interconnected floor space* required to conform to Articles 3.2.8.3. to 3.2.8.11.
- (2) A fire alarm system that includes waterflow indicating devices shall be designed to notify the fire department, in conformance with Sentence (4), that an alarm has been initiated.

Ontario Building Code

- **Division B, Part 3**

- **(3)** If a fire alarm system is required to be installed and a 2 stage system is provided, the system shall be designed to notify the fire department, in conformance with Sentence (4), that an *alert signal* has been initiated.
- **(4)** Notification of the fire department required by Sentences (1) to (3) shall be by way of,
 - (a) signals to a central station conforming to CAN/ULC-S561, "Installation and Services for Fire Signal Receiving Centres and Systems", or
 - (b) the municipal fire alarm system.
- **(5)** Where a single stage fire alarm system is installed in a *building* that is not *sprinklered*, and Sentence (1) does not apply, a legible notice, that is not easily removed, shall be affixed to the wall near each manual pull station stating,
 - (a) that the fire department is to be notified in the event of a fire emergency, and
 - (b) the emergency telephone number for the *municipality* or the telephone number of the fire department.

Ontario Building Code

- Division B, Part 3
- In the 1997 Building Code, signals to the fire department could be by way of;
 - an independent central station conforming to NFPA-71-1989 (very onerous), or,
 - a proprietary control centre conforming to Chapter 4 of NFPA-72-1990, or,
 - a central station conforming to ULC/ORD-C693-1994, or,
 - a municipal fire alarm system.

Ontario Building Code

- May 11, 1985
- 56 fatalities

Bradford, England Assembly Occupancy Fire

- Q & A ?
- Thoughts, Comments

Open Forum