# MULTIPLE DWELLING FIRES

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GLOSSARY

Accelerant  A flammable liquid or other substance used by arsonists to cause a fire to spread rapidly.

Air shaft  A space between buildings or between rooms within a building, provided for the purpose of admitting air and light to rooms.

Auto exposure  The extension of fire via the exterior of a building from a fire originating in the same building.

Back stretch  A method of stretching a hoseline. Members pull off sufficient hose at the location of the fire; engine then proceeds to the hydrant. The hose peels off the back of the engine as it travels to the hydrant.

Beam  A horizontal supporting member in building construction.

Bearing wall  A wall of a building which carries any load other than its own weight.

Bulkhead  A structure on the roof of a building which is built over, or encloses, a stairway, elevator, dumbwaiter or other building facility.

Casement window  A metal framed window which opens outward.

Class "A" Multiple Dwelling  A building housing three or more families in which residency is permanent in nature.

Class "B" Multiple Dwelling  A multiple dwelling which is occupied transiently.

Coaming  A raised frame around a floor or roof opening or scuttle to keep water from running in.

Cockloft  A space between the roof and the top floor ceiling.

Column  A vertical structural member in building construction.

Compactor  A device for crushing garbage and trash into a small space prior to removal from the premises.

Cul-de-sac  A portion of a dead end road where vehicles can turn around.

Drop ladder  A vertical ladder normally held in the "up" position at the second floor balcony of the fire escape by a hook. When this ladder is to be used, the hook is released and the drop ladder is lowered or dropped to the ground. Care must be exercised to make certain that no one is struck by this ladder when it is lowered or dropped to the ground.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Dumbwaiter</td>
<td>A device for collecting garbage from apartments by means of a wooden car</td>
</tr>
<tr>
<td>ECC</td>
<td>Engine company chauffeur.</td>
</tr>
<tr>
<td>Exposure</td>
<td>A system of designating the areas or buildings which are adjacent to the</td>
</tr>
<tr>
<td>1, 2, 3, 4 exposure</td>
<td>fire building. When facing the main entrance to the fire building, 1 is in</td>
</tr>
<tr>
<td>Fire escape</td>
<td>front of the building, 2 is on the left, 3 is to the rear of the fire</td>
</tr>
<tr>
<td>Fire partition</td>
<td>building and 4 is on the right.</td>
</tr>
<tr>
<td>Fireproof construction</td>
<td>A building in which the walls, floors, structural members and stairway</td>
</tr>
<tr>
<td>Fire stopping</td>
<td>The closing of all concealed draft openings to form a barrier against the</td>
</tr>
<tr>
<td>Fire wall</td>
<td>A fire-rated, smoke tight wall having protected openings designed to</td>
</tr>
<tr>
<td>Gooseneck ladder</td>
<td>restrict the spread of fire from one structure to another, or from one area</td>
</tr>
<tr>
<td>In-line pumping</td>
<td>A Procedure in which an engine is placed close to a fire and receives its</td>
</tr>
<tr>
<td>&quot;K&quot; tool</td>
<td>A forcible entry tool used for pulling lock cylinders.</td>
</tr>
</tbody>
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*Glossary of Firefighting Terms*
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised roof</td>
<td>A roof which is raised above the roof beams and supported by 2 x 4&quot;s. The extent to which it is raised varies, so as to provide proper drainage on the roof. The result is a large open cockloft where fire can spread easily. Also called an inverted, reversed or rain roof.</td>
</tr>
<tr>
<td>Return</td>
<td>The interior surface of a scuttle or skylight between the roof and the top floor ceiling.</td>
</tr>
<tr>
<td>Riding list</td>
<td>A list of members on duty. One copy is kept on the apparatus and one copy is carried by the officer on duty. This list (Form EBF-4) also shows riding positions, tools assigned, masks assigned and group numbers for each firefighter on the list.</td>
</tr>
<tr>
<td>Scissor Stairs</td>
<td>Two enclosed stairs separated by rated walls contained in a single stair shaft. Scissor stairs may be installed in multiple dwellings rather than requiring stairs to be remote, and are counted as two separate exits. Scissor stair exit doors are placed no less than 15’ apart in the public hallway.</td>
</tr>
<tr>
<td>Scuttle</td>
<td>An opening in the roof or a floor fitted with a lid.</td>
</tr>
<tr>
<td>Shielded lock</td>
<td>A lock which is protected by a steel plate to prevent unlawful entry.</td>
</tr>
<tr>
<td>Single room occupancy</td>
<td>A multiple dwelling in which the apartments, which were formerly rented to families, are now rented as single rooms to unrelated people. These occupants use the kitchen and bathroom facilities in common.</td>
</tr>
<tr>
<td>Size-up</td>
<td>An estimate of the conditions and problems of a fire or emergency situation.</td>
</tr>
<tr>
<td>Unprotected steel</td>
<td>Steel structural components of a building which do not have any fire resistive covering such as concrete, brick, asbestos, etc.</td>
</tr>
<tr>
<td>Ventilation</td>
<td>The controlled and coordinated removal of heat and smoke from a structure, replacing the escaping gases with fresh air. This exchange is bi-directional with heat and smoke exhausting at the top and air flowing in towards the fire at the bottom. The fire will pull the additional air flow into the building towards the fire which can intensify the fire conditions. This exchange can occur by opening doors, windows or roof structures. Coordinated and controlled ventilation will facilitate quicker extinguishment and limit fire spread.</td>
</tr>
<tr>
<td>Window gate</td>
<td>A folding gate placed at a window to prevent intruders from entering. The type that is approved by the Board of Standards &amp; Appeals does not have any locks.</td>
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</tbody>
</table>
1. INTRODUCTION

1.1 PURPOSE

- To describe certain buildings, listed below, which comprise the major portion of the multiple dwellings in New York City.

- To point out the problems and features of such buildings with regard to fires.

- To establish methods of operating at fires in such buildings and recommend precautions that should be taken.

- All members shall comply with the provisions of Firefighting Procedures, Volume 4, Book 1, Chapter 1 titled Safety Team. When giving assignments, the Officer on duty shall ensure members are reminded of their designations as safety team members. These members must be aware that this designation is based on their unit’s order of arrival at the box and will change as additional units arrive.

1.2 TYPES OF BUILDINGS

- Old Law Tenements (tenements built before 4/12/1901)

- New Law Tenements (tenements built on or after 4/12/1901 and before 4/18/1929)

- Non-fireproof multiple dwellings built on or after 4/18/1929.

- Fireproof multiple dwellings, including housing project buildings.

Note: It is not intended to describe and date each law that affects the above listed types of multiple dwellings. It is almost impossible, when arriving at a fire in one of these buildings, to tell the age of the building, nor is that so necessary. It is sufficient to know the general features of the building and this can be accomplished at a glance if the classification of the building is known; namely, Old Law Tenement, New Law Tenement, newer non-fireproof multiple dwelling or fireproof multiple dwelling.
2. DESCRIPTION OF BUILDINGS

2.1 OLD LAW TENEMENTS BUILT BEFORE 4/12/1901 (Figure 1)

- Three to seven stories in height.
- 20' or 25' wide.
- 50' to 85' deep.
- Class 3, non-fireproof construction (brick walls, wood floor beams and wood floors)
- Two means of egress from each apartment, almost always consisting of an interior stairway and a fire escape.
- Originally the stairs and stairway enclosures were wood with wood lath and plaster partitions. In 1934, most of these buildings were required to fire retard the stairway enclosure.
- Stairway to the cellar is located inside the building, usually beneath the interior stairway.
- To provide light and air to each room, shafts of different shapes and sizes are provided between adjoining buildings. (Figure 2)
- Two to four apartments on each floor.
- When the building has four windows per floor and no front fire escape, it usually indicates two “railroad flats” with a rear fire escape (Figure 3). "Railroad flats" are those apartments which extend from the front of the building to the rear. There are usually two of these apartments on each floor. This does not necessarily apply to a corner building.
- When the building has four windows per floor and a front fire escape, it usually indicates three or four apartments per floor with another fire escape in the rear.
- The ever dangerous exception to this is buildings with railroad flats whose secondary means of egress is a front fire escape. The absence of a rear fire escape is of major concern for the safety of the operating forces. This information should be relayed immediately to the IC.
2.2 NEW LAW TENEMENTS BUILT ON OR AFTER 4/12/1901 AND BEFORE 1916.

- Generally six or seven stories high.
- 35' to 50' wide.
- 85' in depth.
- Five to six apartments per floor.
- The first floor (cellar ceiling) is of fireproof construction and unpierced.
- The entrance to the cellar is by way of exterior stairs.
- The interior stairs are fireproof and enclosed in partitions of fireproof construction. Apartment doors are constructed of fire resistant materials.
- The second means of egress is either another stairway or an exterior fire escape. The fire escape is more generally found in these buildings.
- All interior walls and furred partitions are required to be fire stopped at each story.
- Steel "I" beams were introduced to carry floor joists which couldn't span the enlarged floor areas. These steel beams generally were supported by masonry walls.

2.3 NEW LAW TENEMENTS BUILT BETWEEN 1916 AND 1929 (Figure 5)

- They had a much larger floor area, e.g. 150' x 200'.
- To avoid being required to be built of fireproof construction, the floor areas were broken up into areas of 2,500 square feet or less. This means that between some apartments there are brick or fireproof partitions which effectively limit the horizontal spread of fire. However, these dividing walls only go as high as the ceiling of the top floor. This results in a very large undivided cockloft area. Fire can, and often does, spread throughout this large cockloft area.
- Unprotected steel beams are used to support some of the wood floor joists. These steel beams are supported by vertical steel columns which run the height of the building.
- Wooden floor joists (beams) run horizontally from brick wall to a steel girder or from a steel girder to a steel girder.
- There are dumbwaiter shafts located in the apartments. In most cases, 2 apartments share 1 dumbwaiter. They terminate on the roof in a bulkhead with a skylight on top.
• Elevators are provided in some buildings. They run from the cellar to the top floor with a bulkhead on the roof.

• Entrance to the basement is by a side or rear door at that level, accessed via an exterior stair from the first floor, or through a passageway located in the front of the building.

Note: Because of the size and complexity of the larger type non-fireproof multiple dwellings, more complete descriptions are provided in Section 5.

2.4 NFP MULTIPLE DWELLINGS BUILT ON OR AFTER 4/18/1929 (Figure 6)

• After 4/18/1929, multiple dwellings were no longer called "Tenements" and became known as "Apartment Houses."

• It must be emphasized that no matter what protection a law provides, it cannot be depended upon entirely in these NFP buildings due to renovations, settling of the building, original shoddy workmanship or repair work.

• Between 1930 and 1940, firewalls were required to be carried to the underside of the roof boards, and after 1940, to the top of the roof boards. These changes were designed to effectively reduce the size of the cockloft and limit fire spread.

• The size of the area to be enclosed by fire walls is 3,000 square feet. This is larger than the area of an OLT, and it should be realized that there are several of these areas under one roof of later built multiple dwellings.

• Buildings of extraordinary dimensions are now being built. They include various designs which, although they comply with the 3,000 sq. ft. rule, result in interior public hallways hundreds of feet long.

• The limitation of height (six stories or 75 feet) for NFP residence buildings is bypassed for buildings that are built on grades. It is not unusual to find a NFP multiple dwelling seven, eight, or nine stories in height with no standpipe.

• Fire escapes as a second means of egress are still very common. Some of the newer buildings may have 10 or more.

• Some of the newer buildings have non storage garages below. A sprinkler system may be required, depending when the building was erected.
2.5 FIREPROOF MULTIPLE DWELLINGS INCLUDING HOUSING PROJECT BUILDINGS

- May be low-rise or high-rise of varying height.

- Irregularly shaped clusters of buildings: Double H, Star, rectangular, semi-circular, that may have elevators, incinerators or compactors, standpipes and limited sprinklers.

- Well constructed and maintained.

- Rarely exposure problems.

- Life Hazard: The potential exists for rapid fire development and extensive smoke on the fire floor and all the floors above, especially the top floor. Smoke will travel via vertical shafts, most notably the stairwells and elevator shafts.

- Usually poured concrete floors, cinder block or gypsum block walls. Newer buildings use gypsum board (sheetrock) in the interior construction.

- Apartments may be served by two remote, fireproof stairways, generally leading to a public hallway, or sometimes opening directly into the apartments. Scissor stairs may be installed in multiple dwellings rather than requiring stairs to be remote, and are counted as two separate exits. The smaller four to six story fireproof buildings usually have one fireproof stairway, which may be open or enclosed and runs from first floor to roof.

- First floor may contain:

  Large stores, supermarkets, day care centers, clinics, offices, the size of which may cover several apartments on the second floor.

- Cellars and basements may contain:

  Parking garages, laundry rooms, meeting rooms, stock areas for the first floor stores, tenant storage, incinerator or compactor rooms, or loading docks.
3. GENERAL: NON-FIREPROOF MULTIPLE DWELLINGS

3.1 A great deal of information in this bulletin pertains to more than one type of building. To avoid repetition, the following material is applicable to Old Law Tenements and New Law Tenements:

3.2 GENERAL OPERATIONS - ENGINE COMPANIES

3.2.1 Exercise caution when using the front suction inlet so as not to block out arriving ladder apparatus. Place the apparatus as close to parked cars as possible and use the side suction inlet. This will permit an aerial ladder or tower ladder to get in front of the fire building if necessary.

3.2.2 In most cases, the first line is stretched via the interior stairs to the location of the fire. The purpose of this line is to protect the primary means of egress for occupants evacuating the building and to confine and extinguish the fire. An exception to stretching the first line up the interior stairs may be made when flame is issuing from windows opening onto the fire escape and endangering people trying to come down the fire escape. In this case, the first line may be operated from the street to protect people on the fire escape. A second line should be promptly stretched to the interior of the building. If the entrance door to the building is self-closing and equipped with a locking device, the first member entering the building should use a chock, rug or other means of preventing the door from locking and thereby delaying other members trying to enter the building.

3.2.3 There are other instances in which engine company operations may vary from the usual procedure of stretching to the origin of the fire via the interior stairs, such as store fires, cellar fires and dumbwaiter fires. These will be addressed separately.

3.2.4 The second engine company to arrive shall assist in stretching the first line. They must remain together as a unit and relieve the first engine company as required.

3.2.5 Getting the first line in position and in operation is of vital importance.

3.2.6 In order to provide a reliable and uninterrupted flow of water, all arriving engine and squad companies (assigned as an engine) shall locate, test and confirm a positive water source (hydrant, drafting, etc.). The failure to select and test a hydrant can cause a delay in stretching additional lines, especially if it becomes necessary to back up the engine in order to locate a hydrant. If the engine gets blocked in by other responding units, the delay becomes even greater. Engine company officers and chauffeurs must be prepared to immediately adjust operations and seek alternate sources of supply such as use of gated inlets and in-line pumping if the original hydrant proves inadequate.

3.2.7 If two or more apartments are involved in fire, with lines being used in each apartment, companies should be aware of the possibility of fire getting behind them through the ceiling space if the line in the adjacent apartment is not advancing as rapidly as theirs.
3.2.8 Tower and aerial ladders should not be tied up by stretching lines up them. These ladders may be needed for egress from the upper floors or roof, or for use of their heavy caliber streams.

3.2.9 Hoselines should not be operated into ventilation holes from the roof as this decreases ventilation and nullifies the action of lines operating on the top floor. A roof line should be used only to prevent fire from extending past the trench, to protect exposures, or to extinguish fire that cannot be reached from below, such as fire in a cornice.

3.2.10 The use of the manifold, which is carried by Satellite Units, can be a great advantage at fires where many hoselines must be stretched. The manifold can be placed in front of the fire building. This cuts down on the amount of hose needed, saves time and energy in stretching hose, and makes for a more orderly operation by eliminating surplus hose in the street. Engine companies arriving after the manifold has been set up should be informed as to how many lengths of hose to bring to the manifold for stretching to their point of operation.

3.2.11 Stretching of hoselines on the first alarm:

- The first line stretched for a fire in a multiple dwelling should be stretched by way of the interior stairs. The primary purpose of this line is to safeguard the stairway so that it can be used by the escaping occupants. The door to the fire apartment must not be opened while people are coming down the stairway from the floors above. When the safety of the stairway is assured, this first line may be advanced to extinguish the fire.

- The second hoseline is also usually stretched by way of the interior stairs to the same floor as the first line. It is meant to augment the first line, if necessary. If not needed on the original fire floor, it is then advanced to the floor above.

- The third line in the building should usually be stretched via the fire escape or rope stretch via a window. This is especially true in Old Law Tenements because the stairway is narrow and the stretching of a third line via the interior stairs would result in congestion and inability to move any of the hoselines.

- In some cases, the second or third lines may be urgently needed in one of the exposures. The decision as to the location to which these lines shall be stretched rests with the Incident Commander, and is based on his/her size-up of the fire situation. For example, at a fire in an Old Law Tenement it is often necessary to stretch the second or third line into Exposure 2 or 4 because fire has extended, or is about to extend, across the narrow shaft or shafts between buildings.
3.3 GENERAL OPERATIONS - LADDER COMPANIES

3.3.1 The ladder company officer or forcible entry firefighter should carry the "K" tool in order to expedite entry into the many apartments which will be found in these buildings. Very often, there is more than one lock on the apartment entrance door, and window gates will frequently be found on the windows opening onto the fire escape.

3.3.2 Many times occupants of apartments in these buildings are reluctant to leave their apartments and afraid to answer the door. Every effort must be made to search all apartments that present a hazard to anyone therein.

3.3.3 All horizontal ventilation shall be coordinated and controlled by the Ladder Company Officer operating inside the area to be vented (fire floor, floor above, etc.). Discretion should be used in the breaking of windows in apartments not involved in fire. Efforts should be made to open these windows where possible and necessary. Windows should be opened 2/3's from the top and 1/3 from the bottom to allow heat and smoke to vent and cool air to enter the room. If there is a tolerable smoke condition and very little heat in the apartment and the windows cannot be opened, they should be left intact after a search has been made.

3.3.4 Officers must not permit any material to be thrown out of windows unnecessarily. A member should always be posted in the yard or street below to prevent injuries to anyone from falling material. Examination of yard must be made before discarding any material into the yard to assure that no occupant has jumped into the yard prior to the arrival of Fire Department units. No material shall be thrown onto roofs of building setbacks or into narrow shafts.

3.3.5 When window frames are being overhauled, care must be exercised to prevent any parts of the window frame or counter-weights from falling and injuring persons below.

3.3.6 It is the responsibility of the first ladder company to arrive to determine the location of the fire, whether it is extending and, if so, where it is extending.

3.3.7 When serious fires occur on the top floor or in the cockloft, it may be necessary to cut openings in the roof to ventilate and stop the horizontal spread of the fire. Cutting holes in the roof must be done only when necessary. However, when the decision has been made to cut the roof, a sufficiently large hole should be made directly over the fire, using portable saws. If possible, the long side of the opening should be at right angles to the roof beams in order to provide venting of as many bays as possible.

3.3.8 When fire has extended into the cockloft, the Incident Commander should be notified immediately. The Incident Commander shall evaluate conditions, and order a cockloft nozzle to the top floor and a protective hoseline to the roof, if deemed necessary.
3.3.9 Venting the windows on the top floor, in conjunction with the hole in the roof, will usually result in an indraft of fresh air into the top floor which will be carried out along with heat and smoke through the roof opening and permit advance of hoselines, search, rescue, and opening up operations.

3.3.10 When fire is on the top floor or in the cockloft, sufficient firefighters with hooks must be sent to the top floor to pull ceilings, especially for the larger non-fireproof multiple dwellings. It may be necessary to use engine companies for this purpose or to special call additional ladder companies.

3.4 BATTALION CHIEFS

3.4.1 The first to arrive Battalion Chief shall assume the position of Incident Commander and establish the Incident Command Post in proximity to the front of the fire building. It is imperative Battalion firefighters stay with their assigned Chief during the incident in the event a command channel is activated.

3.4.2 The Incident Commander must size-up the situation and note what actions have been taken prior to their arrival. The IC shall determine if sufficient resources are present to deal with conditions and, if needed, transmit the necessary alarms or special call additional units. The IC may enter the building to gather further intelligence for a proper size-up, but should not remain inside, nor become directly engaged in firefighting operations. Once this size-up is complete, the Incident Commander shall return to the ICP.

3.4.3 Based on his/her size-up and their anticipation of the progress of the fire, they will make a decision as to whether units in operation before their arrival should be redeployed and whether additional units will be required. Additional lines must be stretched and ladder companies put to work as required to protect life and to confine and extinguish the fire.

3.4.4 The Incident Commander shall establish sectors and/or groups early in the operation. Sector/group supervisors shall be assigned as necessary as they arrive by the Incident Commander. Units shall be made aware of the different sectors/groups being established and the identification of their sector/group supervisor. Once a sector/group supervisor is assigned, units assigned to such sectors/groups shall report directly to their sector/group supervisor, and sector/group supervisors directly to the Incident Commander. Units not assigned to a sector/group supervisor will report directly to the Incident Commander.

3.4.5 If conditions warrant, the Incident Commander may assign an Operations Section Chief and/or establish Branches to maintain a manageable span of control. If an Operations Section is established, sector/group supervisors will generally report directly to the Operations Section Chief, who would then report to the Incident Commander. If Branches are established, sector/group supervisors will report to the Branch Director they are assigned to, who will then report to the Operations Section Chief.
3.4.6 The Incident Commander must keep in mind that fire in non-fireproof multiple dwellings can extend very quickly to the floors above and to the exposures. The IC must transmit special calls and/or greater alarms promptly when conditions warrant such actions. For a fire in an Old Law or New Law Tenement, special call an extra engine and ladder for fire on two floors. If progress is not made on at least one floor in a short period of time, transmit a 2\textsuperscript{nd} alarm. If fire is in a shaft extending into an exposure, transmit a 2\textsuperscript{nd} alarm. If fire is extending into two exposures, transmit a 3\textsuperscript{rd} alarm.

3.4.7 The IC should anticipate the possible need to use outside streams and have hoselines stretched to supply tower ladders, ladder pipes, deckpipes and other methods of developing heavy outside streams.

3.4.8 The IC must be prepared to give an accurate report of conditions to the Deputy Chief when they arrive. This report should include:

- The location and extent of the fire.
- Whether the floors above have been examined and searched and the results.
- The situation with regard to the exposures; whether fire is visible in the shafts between buildings or at the rear.
- Where lines are stretched to and which companies are operating those lines.
- Identification of ladder companies on the scene and where they are operating.
- If any special units are on-scene and, if so, what assignments they were given.
- If any additional chiefs are on the scene and their assignment.
- Any sectors or groups that have been established and who is supervising them.
- Any unusual or important information pertaining to the building such as unusually large area, separate stairways with no crossover above the first floor, people reported trapped or missing, etc.

3.5 MISCELLANEOUS PROBLEMS AND KEY POINTS

3.5.1 Members inside the building and not engaged in operations should remain in the hallways on the floors below the fire and not crowd the stairs and landings.

3.5.2 Arsonists possess knowledge of fire travel and the use of accelerants. The use of accelerants can create some unusual fire conditions with an explosive spread of fire after units have been operating for a period of time in the building.
3.5.3 In some instances, fire on a lower floor may not be discovered until operations have started on the upper floor fire. Then the lower floor will suddenly erupt with intense fire endangering the members above. One of the best defenses for this problem is the stretching of a back-up line as soon as possible. All members must be aware of any unusual condition or odor as they are operating, whether it is while stretching, opening up, searching, supervising, or resting. Wet or stained ceilings or floors, especially in areas where units were not operating, could be from fuel or diesel oil. Other tell-tale signs are plastic bottles, balloons, streamers, etc.

3.5.4 There have been instances of a flash fire or flash over in the cockloft area, some remote from the fire area and not necessarily back-drafts or smoke explosions. A possible explanation may be that there are flammable gases or vapors in this area which are lacking oxygen to burn. When we open the roof, pull ceilings or operate a hoseline, we may be admitting the necessary oxygen, which can result in the flash over. The sources of these flammable gases or vapors and the reasons for the flashovers may be one or more of the following:

- The collection of the gases from the fire itself.

- Flammable liquids poured into or placed in containers in these areas (balloons filled with gasoline or fuel oil placed in ceilings from the floor above so that when the ceiling is pulled or drops, the balloon breaks and any glowing ember immediately turns the gasoline into an inferno surrounding the members).

- The possibility of gas lines running from one vertical row of apartments to another row through this area, or other gas lines developing leaks under fire conditions with the gas collecting in the cockloft area or other enclosed areas.

- Hoselines not delivering a sufficient amount of water to properly and thoroughly cool the area, resulting in a flash back.

- Venting the roof at an improper location. The fire could flash through to the hole.

3.5.5 The first officer inside the fire building must make known to the IC and other members the manner in which the floors and apartments are designated, i.e., whether numerically or alphabetically. Apartment 2E could be on the second floor or on the fifth floor.

3.5.6 Multi-unit drills at previous fire scenes are a good way to become familiar with the problems associated with these buildings.
3.5.7 Doors to the apartments may be of the metal clad type, some with steel frames. The locks (as many as three on one door) are very sturdy and of various designs. Heavy chains with hardened padlocks, as well as bars, are placed across doors for further security while the apartment is occupied. In most cases, these doors are difficult to force open and it may be advantageous to seek other means of entrance, such as through walls from the adjoining apartment or from the fire escape. If many apartments are to be searched, it may speed up the process if an effort is made to find a person who may have keys to the apartments. These people may also be able to supply information about other occupants. Windows may be barred by protective gates. Many windows on fire escapes are so equipped. With sturdy locks and the construction of gates, they are difficult to force. Some of these windows may be barred and some may be covered with plywood. People are literally locking themselves in "steel cages" for security reasons and our task is to penetrate this defense.

3.5.8 Members must be aware that when operating near windows, the window sill may be low and debris may be piled high beneath it; and under conditions of poor visibility at a fire, there is a danger of falling out of the window.

3.5.9 Gas Meters:

- Gas meters are usually in the cellar but they may also be found in apartments and in public hallways. Piping containing flammable gas shall not be permitted to pierce or be run in stair enclosures, in a shaft containing a standpipe riser, or in public hallways leading to exits. This includes vertical as well as horizontal runs of piping.

- If gas meters are burning, they should be allowed to continue to burn until the gas supply is shut off. If fire at the meter is extinguished before the gas supply is shut off, gas will continue to discharge and an explosion or flash fire may occur when the gas comes in contact with a source of ignition. Combustible material near the burning meter should be wet down while waiting for the gas supply to be shut off.

- If gas is leaking without being ignited, the gas supply should be shut off and the area ventilated as much as possible. Members should be moved away from the area of the leaking gas. Fog lines may be used for venting. A leak or break in the piping may be stopped or greatly diminished by stuffing rags, paper, etc., into the break.
3.5.10 Outside Streams:

A. As a general rule, outside streams should not be directed into occupied buildings. Occupants should be removed first. However, in some cases, life safety or fire conditions may require that outside streams be used in occupied buildings. For example, to protect people on a fire escape or for heavy fire in a store.

B. There are many types of outside streams which may be used, including hand lines, high rise nozzles, deckpipes, ladder pipes, tower ladder streams, fireboat streams and Satellite Water monitors. These outside streams form an important part of our fire attack system. Some of the situations which may call for the use of outside streams are:

- To protect life by putting a stream between the fire and the occupants.
- To protect exposures.
- To confine the fire.
- To diminish heavy fire so that an interior attack can be made.

C. Only the Incident Commander may order the use of outside streams. This may be the first arriving officer. For example, the IC may order the deckpipe used for a store fire.

D. The air movement resulting from the use of large caliber streams must be considered. At large area building fires, a careful positioning of apparatus and operation of outside streams should be attempted so that fire and heat will be driven away from uninvolved areas and back toward the point of origin of the fire.

E. Outside streams should be used in one position only as long as necessary to extinguish visible fire.

F. The use of outside streams into a building can cause injuries to members operating inside the building. Except in extreme, lifesaving instances members inside the building must be warned, and moved to safe location before outside streams are directed into the building. This safe location must be verified by radio or personal contact, by the Incident Commander.
4 OLD LAW TENEMENTS

4.1 GENERAL OPERATIONS

4.1.1 The severe life hazard in these buildings, because of the crowded living conditions and the ease with which fire can spread, requires prompt and efficient stretching of hoselines by engine companies.

4.1.2 At least the first length of hose should be brought up to the fire floor and the hose strap attached to prevent hose from slipping back down the well hole of the stairway.

4.1.3 If there is fire in two apartments on a floor or fire involves an apartment from front to rear, two lines may be needed on that floor.

4.1.4 If people are out on the fire escape when the first engine company arrives, and it appears that those people are in danger because of fire coming out the windows, then two lines should be stretched. One line will remain in the street to protect the people on the fire escape and the other line will be taken into the building.

4.1.5 Engine companies with lines in exposures can extinguish a great deal of fire in the fire building by operating across a shaft. However, this should not be done without permission of the Incident Commander.

4.1.6 The absence of a fire escape on the front of an OLT will usually indicate that the apartments are railroad flats. That is, apartments with the rooms arranged single file from front to rear, with a single fire escape in the rear and two entrance doors in the interior hall. Corner buildings may be exceptions to this general rule.

4.2 OPERATIONS AT CELLAR FIRES

4.2.1 The first line should be stretched to the cellar entrance door which is located inside the building, under the interior stairway on the first floor. This line should remain at this position to provide protection for people coming down the stairway and to extinguish fire which may be extending upwards from the cellar via partitions, dumbwaiter shafts and other voids. This line should not be advanced down the cellar stairs if there is an outside entrance to the cellar at the front or rear of the building, unless the fire is minor.

4.2.2 All horizontal ventilation shall be coordinated and controlled by the Ladder Company Officer operating in the area to be vented (fire floor, floor above, etc.). Initial vertical ventilation shall be coordinated and controlled by the Ladder Company Officer operating in the fire area (fire floor). Ventilation must be provided at the roof over the stairway, at the top of the dumbwaiter shaft and other shafts and vertical openings. Ventilation shall also be provided via the cellar windows, doors, trap doors, and by intermittently opening and closing the door at the top of the interior cellar stairs after all of the occupants have been evacuated.
4.2.3 The second hoseline stretched should be advanced into the cellar by way of the front or rear entrance to the cellar.

4.2.4 Fires in cellars may quickly spread to the upper parts of the building since OLTs do not have the advantage of a fireproof cellar ceiling, such as is found in buildings erected at a later date. This spread of fire may be via combustible ceilings, partitions, shafts, pipe recesses and other voids. It is important to check for such extension and have hoselines stretched to stop the spread of fire.

4.2.5 The possibility of living quarters in the cellar cannot be ruled out. This area must be promptly searched for occupants.

4.3 OPERATIONS AT STORE FIRES:

4.3.1 Store fires in OLTs may involve a large amount of combustible material. A 2 ½" line should be stretched for large volume fires and a second line stretched to the entrance hallway. When assured that the second line is not needed on the first floor, it may be advanced to the floor above the fire.

4.3.2 A charged hoseline must be ready before the store is ventilated. It is especially important that no plate glass windows be broken without a charged line being ready.

4.3.3 Fires in stores may extend to the upper floors by auto-exposure or via openings in the store ceilings. These store ceilings were usually constructed of metal panels. The metal ceiling can communicate heat to the floor above.

4.3.4 Fire issuing from stores may be directly under a fire escape and people attempting to use the fire escape may be in great danger. It is very important to position a hoseline to protect the people on the fire escape.

4.3.5 Hidden fire extending upward from store via floors, partitions, and various horizontal and vertical voids may present a very difficult fire problem. Members trying to locate and extinguish the hidden fire will be subject to very severe heat and smoke conditions. Masks will become depleted and members will have to be relieved.

4.3.6 Stores in OLTs may have a door which opens into the public hallway on the first floor. The first floor public hallway should be examined immediately to determine whether the means of egress for the occupants of the building is in danger from the store fire. If so, a hoseline should be positioned to protect the interior stairs.

4.3.7 Store owners may use the rear of the store as their living quarters, so it is important to search the rear of stores as soon as possible. Access to the rear will be extremely difficult because of iron bars on windows and the interior hall rear door possibly nailed shut.
4.4 OPERATIONS AT APARTMENT FIRES:

4.4.1 It can be expected that fire will extend quickly to the floors above by way of pipe recesses, partitions, flooring, shafts, and various hidden voids. This is particularly important in Old Law Tenements due to many bathroom alterations.

4.4.2 Fire may also extend quickly to adjoining buildings by way of shafts between buildings. In some cases, there are two or three shafts between buildings and then the problem of stopping extension of fire to the exposures becomes very difficult. The roof firefighter, especially, should report, as soon as possible, the layout of shafts between buildings and whether there is any fire visible in these shafts.

4.5 OPERATIONS AT STAIRWAY FIRES:

4.5.1 Fires in stairways in OLT's present a serious situation since the stairway is the primary means of egress for the occupants. If the fire extended into the stairway from an apartment, it is possible that the fire escape exit may also be cut off by flame from the apartment windows.

4.5.2 The first hoseline should be stretched up the stairway, operated to extinguish fire, shut down and advanced further up the stairway. When possible, the line should be operated up the well hole to cool off the hall and stairs above. This procedure should be repeated until line is advanced to the top floor. A second line should follow to finish up extinguishing operations and to serve as protection for members advancing the first line. Apartments must be checked for possible extension of fire into them.

4.5.3 Ventilation at the roof over the stairway is extremely important so that hoseline can advance up the stairway.

4.5.4 It is important that members do not overload the stairway in these old buildings. Those not immediately necessary to the operation should remain on the floors below.

4.5.5 Portable ladders may be placed over weakened, damaged or burnt-out stairs in order to safely gain access to upper stories of a building. The preferred ladder for this is the extension ladder, rather than a straight ladder. The shorter nested length allows easier maneuverability and positioning, while the adjustable length should insure proper coverage of the entire stair span. The butts shall be supported by the floor at the base of the stair, while both upper beams at the tip of the ladder should rest on the upper floor landing for proper support.

4.6 OPERATIONS AT TOP FLOOR FIRES:

4.6.1 As with fires in apartments on lower floors, ventilation is necessary for the safety of the occupants and to enable members to advance hoselines and to search.
4.6.2 It may be necessary to cut a hole in the roof over the fire if the heat and smoke conditions are too severe or if the fire has extended into the cockloft.

4.6.3 Cockloft areas of OLT's are much smaller than those in NLT's and therefore are not as much of a problem. It may be necessary to cut a trench in the roof of an OLT in order to prevent the spread of fire, but usually such fires are extinguished from below after an adequate ventilation hole is cut over the fire. When fire has extended into the cockloft, the Incident Commander should be notified immediately. The Incident Commander shall evaluate conditions, and order a cockloft nozzle to the top floor and a protective hoseline to the roof if deemed necessary.

4.6.4 The entire top floor must be thoroughly searched and examined because of the lack of fire stopping in these buildings.

4.7 OPERATIONS AT AIR AND LIGHT AND DUMBWATER SHAFT FIRES:

4.7.1 Windows opening on shafts may provide means for fire to extend into a building or into two buildings. This is especially true in warm weather, when windows may be open. Prompt examination must be made to determine if fire has extended into buildings, and windows must be closed to prevent fire or flying brands from entering. In some shafts, there are doors at cellar level leading into cellars of both buildings.

4.7.2 A hoseline should be stretched to the nearest point from which water can be directed onto fire in the shaft. Sufficient hose must be stretched to reach the upper floors of the building.

4.7.3 A second hoseline may be necessary if it appears that fire might have extended into the adjoining building.

4.7.4 In some cases, the base of the shaft may be the roof of a store or ceiling of a cellar and the fire may burn down into the store or cellar.

4.7.5 Shafts may be open or covered. It is important to ventilate those shafts which have skylights or any other covering.

4.7.6 For fires in rooms in the vicinity of a shaft, after the fire in the room has been knocked down, the line should be operated into the shaft in order to knock down the shaft fire before continuing through the apartment for knockdown and final extinguishment.
4.8 MISCELLANEOUS PROBLEMS AND KEY POINTS

4.8.1 Possibility of Collapse:

A. Because of the short span of floor beams (25’), and the fact that the floors are not heavily loaded, the collapse of floors in OLT's is usually not a problem.

B. The instances of collapse or partial collapse of floors have generally occurred when there were previous fires and the floor beams were badly burned.

Note: Floor beams which are supported by masonry walls are generally provided with fire cuts.

C. At times there have been collapses of older buildings not associated with fires, such as when adjoining buildings have been torn down or when excavations are being dug on adjacent land.

D. Any indication of collapsing floors during fire operations should be promptly reported to the Incident Commander so that units can be withdrawn to safe positions. Indications of possible collapse may include plaster ceilings falling, floors or ceilings sagging, and unusual creaking noises.

4.8.2 Roof Cornices at Front of Building-Possibility of Falling:

When the metal cornice at the roof level has been involved by heavy fire for a considerable time, the cornice or parts of it may suddenly fall. It is important to be aware that this may happen and to keep members, and other people, away from the front of the building. Members stretching lines up the front fire escape or operating from the front fire escape must also be warned and moved to a safe position when it appears that the cornice may fall.

4.8.3 Spread of Fire to Exposures:

A. At fires in OLT's, the danger of fire extending to exposed buildings is great. Exposures 2 and 4 are in greatest danger because they are usually closer to the fire building and, if they also are OLT's, then the layout of the shafts between the buildings makes it easy for fire to spread to the adjoining buildings.

B. Buildings in the rear are usually not as seriously exposed because they are anywhere from 10 to 25 feet or more away from the OLT. However, the possibility of fire extending to buildings in the rear must be kept in mind, especially if there is heavy fire in the rear, the windows in the exposed building are open, and the wind is blowing in the direction of the exposed buildings.
4.8.4 OLT's Converted to Single Room Occupancies:

A. It is no longer permitted to convert OLT's to Single Room Occupancies, but thousands of such buildings have been converted and are still being used as Single Room Occupancies (SRO's).

B. In these SRO's, the individual rooms in each apartment are rented to occupants and the bathroom and kitchen facilities are used by all of the occupants of the apartment.

C. Each individual room is equipped with a lock; many with padlocks on the outside. Just because a door is found padlocked, do not assume that the room is empty. Someone may be locked in the room. Entry must be made and all rooms searched.

D. The layout of the rooms must be arranged so that each occupant has access to both means of egress (stairs and fire escape) without having to go through another person's room.

E. These buildings require sprinklers in each room and in the stairway. The sprinkler system has no roof tank; it is supplied from the water main in the street. The system cannot be supplied by the Fire Department.

F. These SRO's also require an interior alarm system to warn the occupants of fire. Exit lights and signs must be provided.

4.8.5 Rehabilitated OLT's:

A. Large scale renovations of groups of OLT's have been done. The changes made in these renovated OLT's are not the same in each case, but there are some similar changes that are often found. These include: one heating plant installed to serve a group of buildings, hanging ceilings in public halls and stairways, horizontal exits provided from one building to another, and compactors and chutes installed.

B. In some areas, two or three adjacent OLT's have been extensively altered and interconnected to create one building with one street entrance. In many instances, a new brick front is placed on these interconnected buildings giving the appearance of a newly constructed multiple dwelling. In reality, the buildings still retain all of the original avenues for rapid fire spread common to an OLT, e.g., interior shafts, little or no fire stopping, dumbwaiter shafts, etc.
4.8.6 Severe Life Hazard in OLT's:

A. Because of the combustible nature of the building contents and components, and the many voids, fires in OLT's can spread rapidly, endangering the occupants of the building.

B. The interior stairway may be unusable because of fire, heat and smoke in the stairway.

C. Fire escapes may be unusable because fire is issuing from windows which open onto the fire escape.

D. There may be a delay in occupants becoming aware of a fire, especially at night time.

E. For these reasons it is very important to search and evacuate the building promptly. Particular attention must be directed to an initial search of the top floor apartments. Regardless of the fire location within the building, a substantial fire will tend to create a heavy smoke build-up in these top floor apartments.

4.8.7 Party Wall Balcony Fire Escapes in OLT's

A. Some fire escapes in OLT's do not have ladders connecting fire escape balconies. Instead they are arranged so that the fire escape balconies connect two or more buildings. In the event of fire, the occupants would use the fire escape balcony to escape to an adjoining building.

B. Some problems may arise with this type of fire escape:

- Firefighters cannot use the fire escape to go from one floor to another for ventilation and search purposes.

- The fire escape cannot be used to gain access to the roof.

- The fire escape cannot be used for stretching hoselines.

- In some cases, the party wall balcony fire escapes connect only two buildings. In those cases, the demolition of one building would definitely remove one of the two means of egress of the other building. In other cases, the party wall balcony fire escapes may connect more than two buildings.

- There is also the danger of locked, barred or gated windows preventing occupants from the fire building from using the escape route of the adjoining building.
People in some cases may mistake escaping occupants on balconies for burglars or intruders and violently resist them entering their apartment.

C. In the event of a serious shaft fire between buildings, and major extension into the adjoining building, many occupants could be found stranded on the party balconies. These people would be in a very dangerous situation and it may be extremely urgent to rescue them by ladders or life saving ropes. An even more serious situation is if the party balcony fire escapes are in the rear of the buildings, where it will be much more difficult to rescue occupants.

D. The roof firefighter must inform his/her officer and the Incident Commander of the presence of party wall balconies in the rear of the building. The Incident Commander should consider calling an additional ladder company to aid in rescue and search via the rear party wall balcony. A line may have to be stretched to the rear to protect the occupants and firefighters on the balconies. Portable ladders may also have to be brought to the rear.

4.8.8 Rear Tenements

A. Some very old OLT's are found in the rear of other buildings. Usually it is necessary to go through the front building in order to get to the rear building.

B. These rear tenements are small in area, may be of frame or non-fireproof construction, and may range from two to five stories.

C. The distance between the front building and the rear building varies, but is somewhere between 10 to 25 feet usually.

D. The rear buildings are frequently not visible from the street. This may result in a delay in discovery of fire in a rear tenement, especially at night.

E. Raising ladders at these rear tenements is a problem. Portable ladders may have to be carried through the hallway of the front building. We may find the ladder can not be maneuvered to a standing position in this instance. Portable ladders may be raised via utility rope up and over front building, lowered to yard in standing position and maneuvered to rear building for rescue work. Emergency measures may require bridging from front tenement to rear roof for ventilation purposes or rescue.

F. Due to the limited access to these buildings, it is difficult to make use of outside streams. The feasibility of operating outside streams from front building windows into a vacant, rear tenement should be explored.
5. **NEW LAW TENEMENTS**

5.1 INTRODUCTION

This section includes all non-fireproof multiple dwellings built after 1901. Emphasis will be on the larger buildings, historically referred to as "H type" since they are our greatest problem. (Figure 7) Although there are variations in the shapes of these buildings, such as "U", "O", "V", Double "E" and the newer, larger rectangular buildings, the problems and solutions are similar.

A fire in an apartment of an "H type" building is of much greater potential than a similar fire in an apartment of a smaller building. An apartment in an "H type" building is usually larger, irregularly shaped and has long private halls. Once a major fire develops, maintaining control of the fire floor becomes difficult because of the large number of apartments with their complex room layouts.

Generally, in the design of the "H" type, stairs and living units are located in the vertical lines of the letter "H". Elevators and a large entrance lobby will be found in the "throat" (that portion which connects the wings of the building). During its period of popularity in building, namely the 1920's and 1930's, the "H" type design was used to connect many sections of housing together to form large residential complexes of apartments which encircled inner courts or gardens. These large, non-fireproof multiple dwellings present tremendous fire potential due to the large areas that fire can spread to within the structure. New Law Tenements were constructed in the "H" type design beginning about 1916.

In 1929, with the passage of the New York State Multiple Dwelling Law, the term "tenement" was no longer used for newly constructed buildings. The "H" type design was continued, and these buildings are now called apartment houses. Today the "H" type design may be found in non-fireproof residence structures classified J2 Occupancy Group, and Group II C Construction; that is, a multiple dwelling apartment house combustible construction classified in the Building Code as unprotected wood joist.

5.2 CONSTRUCTION FEATURES:

5.2.1 Construction of "H" type buildings has remained basically the same for over 100 years. The exterior walls are masonry, and generally of brick. The floors, roof and interior framing are partly or wholly of wood. Columns and girders are unprotected steel. Vertical exits and shafts have various degrees of fire retarding protection.

5.2.2 The "H" type design of residence buildings differs from the older tenements and the newer high rise multiple dwellings in that there are three structural elements to support the structure: masonry bearing walls, wood beams that support the floors and roof, and structural steel columns, beams and girders that connect and support sections of the "H" type building.
In contrast, older tenements generally only have two: masonry and wood. The introduction of steel into the "H" type design had the following advantages: it allowed girders to support floors instead of a costly bearing wall of brick; the consistency of steel structural characteristics allowed a fairly exact moment of failure to be determined, thereby eliminating costly overbuilding required by the use of safety factors when using less predictable materials, such as masonry and wood.

And finally, the ability of steel to be connected permitted the coupling of several building sections to form the "H" type design of residential housing.

5.2.3 Structural steel concerns in "H" type structures:

- Steel, when heated, expands and substantial elongation can occur at a fire. This elongation can cause a wall to bulge, move, or even collapse, if the steel is set within the wall.

- Steel, when heated to higher temperatures during a fire, may fail. Floor beams supported by such failing steel will fall to the floor below.

- Steel columns are vertical structural members designed in an “H” shape; they are also known as channel rails. When located in the inner framework of a building, may extend from the first floor up into the roof space or cockloft area (Figure 8). The space between the enclosing wood framework and column leads up into the cockloft and many times spreads fire, heat or smoke to this roof space (Figure 9).

- Steel girders are horizontal structural members designed in an “I” shape; they are also known as “I” beams. I” beams will transmit fire, heat or smoke horizontally into adjoining areas.

5.2.4 The Cockloft

A. The "cockloft" is a large, concealed void between the top floor ceiling and the underside of the roof boards. This space, not large enough to be called an attic, has no means of entry. Once a fire occurs within the cockloft, it may spread undetected for some time. When it finally does make itself apparent, by smoke drifting down to the top floor apartments or by burning through the roof, the entire roof space may be involved in fire. This area is required to be subdivided, in some cases by firestopping, to prevent the entire void from becoming engulfed in fire. However, this firestopping is sometimes defective and fails to restrict the fire.

The cockloft of an "H" type building if improperly firestopped, will become a very large, undivided area with the fire potential of a lumber yard. The fire loading of this area is considerable; roof beams, wood roof boards, wood frame work of the ceiling below, wood lath backing for the plaster ceiling and wood bracing connecting it all. (Figure 10)
B. The most common roof has the top floor ceiling several feet below the main roof beams. The roof boards are fastened directly to the top of the roof beams. This provides for a sturdy roof. In the inverted, raised or reversed roof, the main roof beams are at the ceiling level and a framework is raised above these beams with the roof boards attached. This roof is normally springy, but it permits the roof to be pitched so that water will run off. (Figure 11)

If there is a heavy body of fire in the cockloft, expect at least a partial collapse of the inverted roof. Since the inverted roof is constructed of 2 x 4’s, they will burn away faster than the main roof beams and the roof section will come to rest on these beams.

5.2.5 Stairways

The number and location of stairways do not adhere to a common pattern. Some stairways will be found near the front entrance; others will be some distance away. In some instances, there will be no access from one wing to another or from one part of the building to another. Generally, on the first floor, there is access between wings. Stairway construction (Figure 12) is usually of the return type, some with no wells, making hoseline stretches more difficult. Some stairways will have windows at the half landing facing the street, courtyard or front entrance courtyard. There are usually two to four independent stairs in "H" type buildings as follows: (Figure 12A)

- **Transverse stairs**-these stairs are usually located at points remote from each other, but a person can go (transverse) from one stairway to another via the public hall on all floors of the building. Their layouts ease evacuation, assist in examination and permit lines to be stretched to any apartment, via any stairs. They are a tremendous asset in heavy fire operations on the top floor.

- **Wing stairs**-these stairs, one or two, are located at the front and rear of each wing. The floor landing leads to the public hall that will join the other stairs in that wing only (if two stairs). The public hall does not transverse to the other wing of the "H".

- **Isolated stairs**-these stairs are usually identified by their individual entrances. Floor landings are recognized by their limited space and absence of a public hall. Access is limited to the apartments served by the stairs, and there is no access to other wings and hoseline operations are confined to their limited area.

- It is essential that once the stair layout is recognized, this information be relayed by handie-talkie. This is vital in the size-up picture.
5.2.6 Interior Shafts and Voids

- **Channel Rails** - to provide stability to these large "H" shaped buildings, a steel framework is employed. Steel columns are erected vertically from the foundation to the cockloft. Their locations vary according to the architects design, and are at times difficult to find. They are often located in voids behind closets. Our main concern is that they are not fire stopped. This provides a chimney effect for fire travel from the first floor to all apartments above and to the cockloft.

These vertical voids, about one foot square, may be larger when the void is built to include waste and water pipes. When the fire is knocked down and opening up begins, areas where the lath has been burned must be examined for the presence of these columns. If detected, locations above and below the fire must be checked immediately. (Figures 8 and 9)

- **Pipe Recesses** - the danger of allowing vertical fire travel are well known and require little emphasis. A note of caution: repairs by local handymen may have been made around pipe recesses or light fixtures. These poorly repaired openings may facilitate fire entering walls or ceilings. Waste pipe recesses exist wherever a kitchen or bathroom exists. Their presence may be picked up first by the roof firefighter who notes the locations of exposed waste pipes atop roofs which line up with the fire below. If the pipe is hot to the touch, a top floor examination is required and notification made to officer and the IC.

- **Closets** - Their construction atop one another sometimes provides a vertical artery. Workmanship may be shoddy in closets, creating openings for fire travel. Remember also that they are usually back to back with other closets. This may lead to horizontal, as well as, vertical extension.

- **Dumbwaiter Shafts** - These are sometimes used as voids for new electrical wiring or water pipes. The openings where these wires or pipes enter the apartment may not have been fire stopped and will allow a shaft fire to readily enter the apartment. (Figure 13)

- **Voids** - In unusual shaped buildings, voids may be created by squaring off rooms or hallways. These voids run the entire height of the building and will spread fire either up or down. (Figure 14)
5.2.7 Apartment Layouts

- In the past, professional occupancies, such as doctors and dentists were found on the first floor of the "H" type buildings. It was common to find two apartments joined by inserting doorways in the common partition wall of the adjoining apartments. Today, this practice has become more common for a variety of reasons other than the original intent and can now be found on any floor. This type of alteration creates the possibility of heavy fire conditions throughout two apartments. Extreme caution must be exercised and units must be alert to the possibility of two apartments converted into one.

- The number and layout of apartments in a wing vary greatly from building to building. Some apartments may have long, interior hallways. The rooms of one apartment may be behind another apartment, in "L" or "T" shaped form.

- Except for the first floor, which contains the lobby, upper floor apartment layouts are generally identical in each vertical line.

5.2.8 Floor and Apartment Designation:

The manner in which the floors and apartments are designated (numerically or alphabetically) has no set rule and can differ with each building. Some consider the floor one flight up as the first floor, and are numbered accordingly. In the Fire Department, the ground floor is considered the first floor. As shown on the diagram below, apartment 2E could be on the second, third, fifth or sixth floor depending on the system used:

<table>
<thead>
<tr>
<th>Floor</th>
<th>&quot;E&quot; Line Apts</th>
<th>&quot;2&quot; Line Apts</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th Floor</td>
<td>5E 6E</td>
<td>2F 2E</td>
</tr>
<tr>
<td>5th Floor</td>
<td>4E 5E</td>
<td>2E 2D</td>
</tr>
<tr>
<td>4th Floor</td>
<td>3E 4E</td>
<td>2D 2C</td>
</tr>
<tr>
<td>3rd Floor</td>
<td>2E 3E</td>
<td>2C 2B</td>
</tr>
<tr>
<td>2nd Floor</td>
<td>1E 2E</td>
<td>2B 2A</td>
</tr>
<tr>
<td>1st Floor</td>
<td>E 1E</td>
<td>2A 2</td>
</tr>
</tbody>
</table>

**Note:** ICS terminology should correct problems identifying the fire floor and floors above. Once the fire floor is identified, the fire floor and the floor above shall be known as the Fire Sector. The Supervisor assigned to this sector will be identified as Fire Sector Supervisor. The Supervisor assigned to the floors above will be known as the Floor(s) Above Sector Supervisor.
5.2.9 Entrance to rear yards may be gained through passageways from the street or through interior doors located on the first floor public hallway to exterior stairs.

5.2.10 Fire escapes may be found on one, two, or all sides of the building. Some may have gooseneck ladders to the roof; others may not. Gooseneck ladders to the roof will not be found on fire escapes on the street side or on those in the street side courtyards.

5.2.11 The cellar ceiling is of fireproof construction. Openings below the first floor for pipes, conduits, ducts, dumbwaiter and elevator shafts, must be protected by fireproof doors and assemblies and such doors must be self-closing. Entrance to the cellar is by exterior stairs.

5.3 GENERAL OPERATIONS - ENGINE COMPANIES

5.3.1 It is of vital importance that, before a line is committed in an "H" type building, the exact location of the fire be determined. Care must be taken to avoid using a wrong stairway. Determine if the wings are connected above the first floor. Communication is essential. You must know where you are going before you start.

5.3.2 Many times just stretching a line to a fire apartment will prove difficult. It may require many lengths (five or more) just to reach the building entrance. There may be large courtyards, often with obstacles such as trees, benches, fences, shrubbery, etc. Every effort must be made to get the first line in operation before additional lines are stretched. All available engine companies should be used to stretch the first line.

5.3.3 Some stairs wrap around elevator shafts, necessitating very difficult stretches. An alternate method should be considered. Instead of stretching around the elevator shaft, it is much easier and faster to use a rope to pull the hoseline up to the floor below the fire via the outside of the building, then up the interior stairs to the fire floor. The stairway windows, if available, can be used for this purpose. When this stretch is made, the location of the fire must be definitely known in order to be certain that the line will be brought into the building on the floor below the fire.
5.4 GENERAL OPERATIONS – LADDER COMPANIES

5.4.1 The operations of ladder companies in "H" type buildings are very similar to, but more extensive than, operations in smaller multiple dwellings. The rapid location of the fire and determination if and how it is extending is an important responsibility of the first ladder company to arrive. The provisions of Fire Tactics and Procedures - Ladder Companies 1, 2, 3 and 6, are appropriate to operations in "H" type buildings. There are, however, inherent problems which may not be found in the older tenements. For example: The inability to cross from one wing to another above the first floor in some buildings.

5.4.2 Aerial ladders, if first to arrive, should not be positioned so as to block off the front entrance courtyard. When possible, this position should be taken by a tower ladder. If rescue operations must be performed, the aerial shall, of course, be positioned to carry out this function. If the fire is showing out windows in the throat, courtyard and front windows, and a tower ladder stream is being used, it should be directed at the windows in the throat first. The stream should then be advanced toward the front of the building and finally operated into the front windows.

5.4.3 When conditions indicate roof operations (top floor fire, shaft fire, two floors involved, heavy fire condition, etc.) the aerial may initially be raised to the roof for rapid ascent of the roof and outside vent firefighter. The primary means of getting to the roof would be winged or isolated stairways in the same building or any stairway in an adjoining building, if feasible. The aerial may then be used to vent windows as necessary. Once the windows are vented, the aerial should be returned to the roof. It can be used as a means of escape for members operating on the roof.

5.5 BATTALION CHIEFS

5.5.1 The first to arrive battalion chief shall assume the position of the Incident Commander (IC) and establish the incident command post in proximity to the front of the fire building. The IC shall determine if sufficient resources are present to deal with conditions and, if needed, transmit the necessary alarms or special call additional units. The IC may enter the building to gather further intelligence for a proper size-up, but should not remain inside, nor become directly engaged in firefighting operations. Once this size-up is complete, the IC shall return to the ICP. It is imperative battalion firefighters stay with their assigned chief during the incident in the event a command channel is activated.

The Incident Commander shall establish sectors and/or groups early into the operation. Sector/group supervisors shall be assigned as necessary as they arrive by the Incident Commander. Units shall be made aware of the different sectors/groups being established and the identification of their sector/group supervisor. Once a sector/group supervisor is assigned, units assigned to such sectors/groups shall report directly to their sector/group supervisor, and sector/group supervisors directly to the Incident Commander. Units not assigned to a sector/group supervisor will report directly to the Incident Commander.
If conditions warrant, the Incident Commander may assign an Operations Section Chief and/or establish Branches to maintain a manageable span of control. If an Operations Section is established, sector/group supervisors will generally report directly to the Operations Section Chief, who would then report to the Incident Commander. If Branches are established, sector/group supervisors will report to the Branch Director they are assigned to, who will then report to the Operations Section Chief.

5.5.2 Additional units: Because of the severe life hazard, height, area and combustible construction of these buildings, an additional engine company and ladder company (beyond a full 1st alarm assignment) should be called for a medium fire condition. That is, when it is anticipated that two lines will be required. When additional units have been special called, they should be given instructions, by radio, regarding positions, masks, extra hooks, etc. If two floors are involved, or at extensive cockloft fires, it will generally be necessary to transmit a 2nd alarm. The time that it takes 2nd alarm units to arrive must be considered under these conditions.

5.5.3 Additional chief officers: When transmitting 2nd or greater alarms for fires which have entered the cockloft of large "H" type buildings, the IC should consider special calling additional battalion chiefs to cover critical sectors and/or exposures. These additional battalion chiefs could be assigned as top floor sector supervisor, roof sector supervisor, or as needed.

5.6 COMMUNICATIONS

5.6.1 The need for immediate, clear, concise information is an essential part of the overall strategy. The Incident Commander must obtain the information necessary to evaluate the situation and then formulate the proper strategy to cope with it.

5.6.2 With the building of these large multiple dwellings, a system of identification of various sections became necessary. Many wings are already designated: A wing, B wing, East wing, West wing, etc.

Since it may not be apparent to the firefighting force how a particular building designates its various sections, and to avoid the confusion of calling a wing the exposure 2 wing, the following method shall apply, regardless of the designation that the building uses:
5.6.3 Standing in front of and facing the fire building and beginning on your extreme left, wings shall be designated A, B, C, D etc. The entire wing from the front to the back of the building shall be A, B, etc. The wing shall be further subdivided by the term: front and rear or front, center and rear, if necessary. That part of the building connecting each wing shall be designated the throat and shall be referred to as the throat between A wing and B wing etc. (Figure 15) At an escalating fire it may be necessary to establish subordinate levels of command in the wings of the building. The same description of building wings can be used to describe the assignment i.e., Sector A, B, C, D or if necessary Branch A, B, C, D.

A. The officer who arrives first on the fire floor shall transmit the following information to the Incident Commander:

- Location of the fire apartment: (Wing, Floor, Apartment No.)
- Number of apartments on the floor of the fire wing.
- Fire conditions: (Fire out in public hall, heavy smoke condition)
- Access: Location of stairway in fire wing closest to fire apartment. Report if it is possible to go from one wing to another above the first floor. (Transverse, wing or isolated stairs)
- Fire extension: Whether fire is extending and how it is extending. Need and location for additional lines. (Fire floor or floor above adjacent apartment). Give reasons.
- Difficulties or delays in gaining entrance to the fire apartment or in advancing the line. Give reasons.
- Occupants: If occupants have been located and are accounted for. (This information may be obtained from one of the occupants or from a neighbor).

B. The roof firefighter shall inform his/her officer or the Incident Commander of the following:

- The configuration of the building, "H", "E", "U", etc.
- Fire showing out windows (number and location) which are not visible from the street and whether any exposure is affected.
- Color and volume of smoke coming from windows.
- Persons trapped and their exact location.
• Location of stairways and fire escapes.

• If the building fronts on more than one street. Whether there is access for apparatus. Whether it is a street, alleyway, parking lot, vacant lot, etc.

• Whether there is any difference in the height of the building from street to street, or from front or rear, or from side to side. (Figure 16)

• Evidence of unusual heat, smoke or fire in the cockloft, or if fire has burned through roof. Need for additional saws.

• Location of parapet and dividing walls.

• Any other information that will be relevant to aid operations.

5.7 STORE FIRE OPERATIONS

5.7.1 Construction Features

A. Many of these buildings contain one or more stores on the first floor.

B. Deep or wide stores may span two or more apartments above.

C. Floor above the store(s) is constructed of wood joists.

D. Possibility of unprotected steel columns extending all the way to the cockloft, lally columns, and horizontal I-beams.

E. Alterations may have created openings in ceilings and walls that can channel fire and smoke into column and pipe voids some distance from the original fire, horizontally as well as vertically.

F. Presence of pipe recesses to floors above and possibly straight through to the cockloft.

G. Tin ceilings that are difficult to pull and may not prevent fire extension.

5.7.2 Fire Tactics:

A. The first line is stretched to the store and extinguishes fire. Anticipate that the store may be deep and that water must be directed into any vertical and horizontal openings that are found or suspected.
B. The second line should be used to back up the first line. When it is obvious that the first line can control the store fire, the second line should be advanced to the floor above the fire. If two lines are needed in the store, the third line shall be stretched to the floor above.

C. First Ladder: force entry into the store, check rear of store for possible extension into public areas of building, quick opening of ceilings and voids.

D. Second Ladder: floor above for forcible entry and search for life and extension. Areas larger than the actual size of the store must be checked due to the possibility of horizontal travel of fire and smoke. These buildings have a peculiarity, in that many times a fire will bypass intermediate areas both vertically and horizontally and then, when an obstruction is met, will set fire to the surrounding material.

E. Fire can spread to adjoining stores by way of spaces between the ceiling joists or by openings in walls for pipes, ducts and wiring.

F. Fire can extend upward in pipe recesses and vertical steel columns to the cockloft, possibly bypassing intermediate floors. The top floor and cockloft must be promptly checked and rechecked at a later time.

G. Rescue problem above stores may be severe if heavy fire or smoke condition exists. Deckpipes on engines may have to be used momentarily to drive fire back into the store or to protect people on fire escapes. A quick dash from this large caliber stream may make a tremendous difference in not only protecting life, but in quick extinguishment of the fire.

H. Extra ladder companies may be needed immediately and should be called to evacuate upper floors if fire cannot be controlled early and the smoke permeates to the many apartments found in these buildings.

I. Heavy fire and smoke can make fire escapes untenable for occupants above the stores or in close proximity to the stores. A line must be stretched to protect this means of egress and an aggressive interior search must be made.
5.8 CELLAR FIRE OPERATIONS

5.8.1 Construction Features

A. Fireproof construction throughout cellar.

B. Cellar ceiling-concrete and rated at two hour fire resistance.

C. Holes made for wiring or pipes to upper floors are usually sealed, but full reliance on this cannot be made. Ceilings in the cellar and flooring on the first floor must be checked.

D. Wood sleepers (strips of wood embedded in the top of the concrete) used to nail the first floor floorboards to.

5.8.2 Fire Tactics:

A. The first line is stretched by way of the usually numerous, exterior approaches to the seat of fire and extinguish.

B. First Ladder provides forcible entry and search of cellar to locate fire and search for life. Consider likelihood of cellar apartments for superintendent or maintenance people.

C. First floor checked for extension and smoke condition.

D. Roof firefighter to roof for vent and examination. This firefighter also checks cockloft for possible extension of fire through vertical voids.

E. All horizontal ventilation tactics must be coordinated with interior operations and performed as directed by the Ladder Company Officer operating inside the fire area to be vented. Numerous ground level windows are usually available at the sides and rear, a considerable difference from Old Law Tenements. Due to this, they are more easily vented and also provide alternate points of attack if interior attack is very arduous for the engine company.

F. Water damage is usually not a problem.

G. Always be aware of the possible civilian life hazard in these cellar areas.
Note: Storage of personal belongings or stock from stores in cellars, with its resultant fire load, is not the problem it formerly was. These goods are usually no longer found in cellars that have any type of reasonably easy access due to the security problem. This is true in all types of dwelling buildings today, except those that have areas under stores that are virtually sealed off from the rest of the building cellar and have interior stairs and/or sidewalk entrances to the cellar.

5.9 TOP FLOOR, ROOF, AND COCKLOFT FIRE OPERATIONS

5.9.1 Top floor fires always present the possibility of fire extending into the cockloft. This can result in a complete loss of the top floor and roof. Fire can also drop down to the lower floors. It is imperative for the IC to assign a roof sector supervisor early into the operation. The IC shall designate a company officer as the roof supervisor until a chief officer can be assigned. Once a sector supervisor is assigned, all communications between the roof and the IC shall go through the roof sector supervisor. When fire has extended into the cockloft, the Incident Commander shall be notified immediately. The Incident Commander shall evaluate conditions, and order a cockloft nozzle to the top floor and a protective hoseline to the roof, if deemed necessary.

5.9.2 When it is necessary to cut holes in the roof, initially, approximately a 3’ x 6’ coffin cut is recommended. Two saws should be put into operation promptly to prevent lateral spread of fire in the cockloft.

5.9.3 Ventilation of the top floor must also be accomplished via the windows. This may be done from the interior or from the fire escape, ladders or roof. Ventilation via the windows, in conjunction with the hole made in the roof will make the top floor tenable for search, opening up and extinguishment.

5.9.4 At these cockloft fires it is very important to have the ceilings pulled to expose the fire. Sufficient firefighters with hooks must be assigned to pull these ceilings. At times, it may be necessary to assign engine companies or individual engine firefighters to pull ceilings. A charged line must be in readiness to extinguish exposed fire before the ceilings are pulled.

5.9.5 One of the most serious problems at these cockloft fires is determining the extent of the fire. To accomplish this, it will be necessary to get all apartments open on the top floor, make openings to find the extent of the fire, get ahead of the fire, and work back to the original fire area.
5.9.6 Fire stopping in the cockloft cannot be depended on. Cocklofts may be undivided, as in the case of when fire partitions only come up to the underside of the roof beams, or there may be openings in the fire stopping because of poor workmanship.

5.9.7 Attached buildings of the same height, especially if built at the same time, must be checked for possible extension of fire.

5.9.8 Cockloft fires in large area buildings such as these may spread rapidly. Because of the layout of the building sections and apartments, it usually requires many hoselines and many ladder company personnel to bring these fires under control. It is important, therefore, to transmit additional alarms in the early stages of the fire.

5.9.9 Trenching (Figure 17)

A. One of the techniques used to stop the spread of fire in a cockloft is to cut one or more trenches in the roof.

B. Trenching a roof is a defensive operation that is performed to limit the extension of fire in the cockloft. A trench may be cut, but should not be opened, until there is an adequate vent opening directly over the fire. Ideally, the trench should be precut, but not pulled. Two or more inspection holes may be cut on the fire side of the trench. When, and if, the fire reaches the inspection holes, the precut trench is pulled. This sequence lessens the possibility of the fire moving rapidly and prematurely towards what is, in effect, a second distant opening (the trench) cut in the roof.

C. To be effective, the trench must be properly located, at least 3' wide, and cut from wall to wall or other suitable fire stop, such as a stair or elevator bulkhead. Failure to complete a trench may allow a fire to pass to the other side of the trench.

D. The position of the first trench cut should be selected at a location that will isolate the fire to a section of the roof far enough away from the present fire position, to allow time to cut and still not pull the fire. Fire travel will usually indicate the need for a trench, but at times it will be difficult to determine.
E. The trench should be cut about 20 feet from the initial vent hole. It should be cut at the narrowest, available roof section, taking advantage of bulkhead structures, outside walls, skylights, etc. Do not depend on firewalls constructed within the structure. If the fire is heavy, and the first trench cut appears doubtful to stop the spread of fire, or if during the trenching operation there are indications of fire existing in the cockloft beneath you, then retreat and start a second trench a greater distance from your previous position, even if this means giving up the entire wing. If fire does not pass the trench, your mission was successful.

F. Personnel cutting a trench or a ventilation hole on a roof must be assured of a way of getting off the roof. Their means of escape must not be cut off by the trench cut or any other opening. Keep all personnel off the roof on the fire side of the trench. If fire vents out of and/or crosses the trench, they may be cut off. It is good practice, on larger buildings, to have two ladders raised to the roof at different ends of the building to provide egress. Members operating on the roof shall call for and direct the placement of ladders to assure their safe egress from the roof. It should be noted that not all fire escapes extend to the roof. In some buildings, none of the fire escapes extend to the roof.

G. Members must be aware of changing fire conditions in case the means of escape they were depending on can no longer be used because of the changing fire situation.

H. A charged line should be in position on the roof to protect personnel and the trench opening. This line may be operated into the trench in a brief, sweeping, side to side motion to prevent fire from extending across the opening. Such operations should only be conducted after adequate precautions are taken to prevent injury to interior operating forces.

I. Remember, roofs of "H" type buildings are extensive in area and present challenging fire control problems because of potential horizontal fire travel. Understand that there is a mass of wood in the cockloft equal to a small lumber yard. Some cocklofts are as much as four feet deep. Wood components range from 2"x 8" to 1"x 2" braces, all dry and easy to ignite.

J. The absence of fire showing at the trench is no guarantee that fire has not extended across this cut. The smoke and gases coming from the trench may be coming from both sides. Be aware that fire may have extended beyond the trench cut. Additional examination holes may have to be made past the trench. In the early stages of the fire, visibility into the cockloft from the roof trench is extremely limited or nonexistent. Ceilings on the floor below must be opened up in various apartments, continually working toward the trench area. A large hole must be cut over the main area of fire.
This will relieve the roof space of the built up heat and fire and create a thermal updraft. After this large hole is cut over the fire, then the trench cuts can be made as defensive moves to separate the roof sections. This will not interfere with the thermal updraft that is venting the main fire and, hence, will provide the venting necessary for the units operating on the top floor. In so doing, they can then continue opening the ceiling with hooks, which will more quickly expose the cockloft fire.

5.10 EXTENSION OF FIRE

5.10.1 Checking for fire extension: When a heavy fire is encountered in one apartment, all sides and above and below the fire area, must be examined. Nothing can be taken for granted. The most probable point for vertical fire extension will be the vertical steel channels (in buildings that have steel frame construction). These columns have no specific location and many are completely hidden. Any boxed out area is there for a purpose and, if involved in fire, must be opened up and examined. Closets are another very probable point of vertical extension. At times the vertical steel columns are located in the walls of these closets. Fires in channel rails necessitate opening up above and at the top floor ceiling to check for extension into the cockloft.

5.10.2 Other vertical voids to examine would be pipe recesses and shafts of any type, such as elevator, dumbwaiter, vents etc. Any time fire enters a vertical void, the top and bottom must be checked for extension. Unused shafts may be sealed and covered over so that their location is not evident. These unused shafts are, at times, used for closets or to install new wiring with holes poked into the sides at ceiling level. These holes may not be properly sealed and fire can extend to a number of floors or to the cockloft by this means. These vertical voids may be found in the most unexpected places, such as the center of living and bedroom walls. The wall of a closet in one apartment could be the wall of a kitchen in the next, with pipes running up the wall between the closet and the kitchen. Always examine walls in the vicinity of the bathroom for the large void enclosing the waste pipe. In renovated and/or rehabilitated buildings, the boxed out interior shafts for plumbing, electrical, steam, etc., must be checked. They may be open from basement to cockloft. These large shafts are generally found behind kitchens and bathrooms and are discernible by unusually thick partition walls, which are inconsistent with previous structures. They have been added to facilitate installation of additional services.

5.10.3 Horizontal spread may be through any of the following means: the ceiling and floor beams, horizontal channel irons which may be found along partition walls at the ceiling level, burning through partitions, holes in interior brick walls, around shafts, through windows, cockloft and cornice. Ceiling beams are not always laid in the conventional manner (across the width of the wings). Some may be laid lengthwise, depending on the iron framework. Wooden beams of one building may contact the beams of an adjoining section or building where they are laid on a common wall. Beams may be of unusual length, spanning large areas.
5.10.4 In irregularly shaped buildings (outer walls not squared off) hidden voids may be created because of the necessity of squaring off the interior walls.

5.10.5 The officer of the first ladder company to arrive, if the second ladder company is not on the scene, shall order members to the floor above, directly over the fire, to feel all the walls for hot spots, including the walls of closets. Any hot spots found must be reported to the officer or to the IC. At times, there may be no smoke in this apartment, but the fire could be spreading through the vertical voids. These firefighters must also feel the floors above the fire and of the adjoining rooms. Fire may have extended through the horizontal voids and not be evident on the fire floor. This fire will travel horizontally until it encounters a vertical channel and will then travel upward.

5.10.6 If any hot spots are found that require examination, small holes can be made for a visual check. Should any fire be encountered, notify Incident Commander and immediately go to the top floor and check the termination point of this void for any extension to the cockloft area. If fire is found here, a line must be provided at that point and the roof opened above. The smoke in this apartment, and possibly throughout the top floors, may be very heavy, necessitating search, evacuation or rescue operations. As conditions develop and more help is available, the entire top floor must be searched and examined for extension. The possibility of heat and smoke traveling horizontally and then banking down at a remote point should be anticipated. If a heavy fire condition exists on a floor, the area and the base of any shafts below the fire must be examined for extension.

5.11 PROBLEMS, PRECAUTIONS, KEY POINTS

5.11.1 Know the floor, wing, section, side or exposure where you are operating. It is essential that all members at the scene use the same terminology.

5.11.2 Consider a special call for the Satellite unit and its manifold. It could be placed in front of the fire building or within the courtyard. Engine companies arriving after the manifold is set up should be informed by Incident Commander as to the size and number of lengths of hose to bring to the manifold for stretching to their point of operations.

5.11.3 A fire escape in the throat often spans the firewall and indicates two (2) separate apartments in the throat.

5.11.4 One apartment in the throat may span firewall with no fire escape and have two (2) interior exits, one to the stairway in one wing and the other to the adjacent wing. Usually one door is nailed shut or obstructed by furniture so as not to be openable. A search of this apartment must be thorough.

5.11.5 Some buildings have been found to have a fire partition in the throat which does not extend completely to the rear wall. When a fire partition is found, it must be checked to be sure it is carried to the front and rear fire walls.
5.11.6 The law requires the subdivision of these large NFP Multiple Dwellings into smaller areas. However, there is no way to determine the location of these subdividing walls from the outside of the building, except in these few cases where they are continued above the roof.

6. HIGH RISE FIREPROOF MULTIPLE DWELLING FIRES
(75’ or more in height)

6.1 GENERAL OPERATIONS

The following sections will cover the initial considerations at fires in high rise fireproof multiple dwellings (HRFPMDs) including buildings referred to in the past as projects and in newer HRFPMDs. Fires in these buildings can be extensive, extremely hot and, depending on wind conditions and building air flow patterns, very difficult to extinguish. These fires require a coordinated effort from the designated attack stairway. The IC shall notify the borough dispatcher, as well as all members operating on scene, of the letter designation of the stairwell being used for attack operations.

When the fire apartment door is left open; it will allow smoke and/or fire to vent out into the public hallway. If a window in the fire apartment fails, and wind is blowing into the fire apartment, an extreme condition may be created on that floor. This may negate the standard attack strategy, which is a direct frontal attack with a hoseline from a stairwell, down the public hall and through the apartment door. If size-up indicates wind is, or may become, a factor that negatively impacts fire conditions, the IC must be notified and alternate strategies implemented as described in Addendum 3.

Life Hazard: The potential exists for rapid fire development and extensive smoke on the fire floor and all the floors above, especially the top floor. Smoke will travel via vertical shafts, most notably the stairwells and elevator shafts. This smoke travel may require the need for stairwell pressurization by positive pressure ventilation fans. Sufficient units will be needed for search of stairwells in the taller, more extensive, high rise buildings.

Stairways: The types of stairs encountered can range from enclosed, return type stairs, enclosed, scissor type stairs, open stairs, to, in rare cases, fire towers. Whenever enclosed stairwells are encountered, doors to any and all evacuation stairs must be maintained closed on the fire floor.

Prior to advancing to the reported fire floor, members must gather information from the floor below, or two floors below if scissor stairs are present.

- Determine the location, letter designation and number of stairways serving the fire floor. Stairways can provide members with alternate egress points from the public hallway if conditions should unexpectedly deteriorate due to fire conditions. They may also provide alternate access points if civilians or members become trapped in the hallway due to a sudden, unexpected change in conditions.
• Prior to the designation of the attack stairway, all members must access the fire floor from the same stairway. If the door to the fire apartment has been left open and size-up indicates that wind may impact fire conditions, the air flow paths must be controlled on the fire floor. Uncoordinated opening of apartment and stairway doors may cause fire conditions to dramatically increase with little or no warning.

• Identify the stairways that have a standpipe.

• Determine the layout, shape and size of the public hallway including dead-end hallways, before you enter the fire floor public hallway. Also note apartment designations and the location of fire/smoke doors.

Operational considerations when using scissor stairs: When scissor stairs are present, it should be communicated via handie-talkie to all units. At fire operations, early efforts should be made to ensure stairways are correctly labeled. Mislabeled scissor stairs will cause confusion during fire operations. The attack stair door should be the only stair door that is left open on the fire floor. The strategy is to reduce smoke contamination to the upper floors via stairways. When scissor stairs are mislabeled, this becomes very difficult to accomplish. If mislabeled scissor stairs are discovered, this information should be relayed to the IC immediately.

**Note:** A priority when performing building inspection in a HRFPMD should be to verify that stairways are correctly labeled.

6.2 AIR AND SMOKE/HEAT MOVEMENT

6.2.1 Premature ventilation in HRFPMDs can cause negative consequences for our operating forces. Horizontal ventilation of the fire apartment should be limited and controlled by the ladder company officer operating in the fire apartment. All other ventilation must be strictly limited and controlled by the IC.

6.2.2 The most prominent variables that affect smoke movement are:

• Pressure: Smoke and hot fire gases increase the air pressure inside the fire area or fire apartment. This higher air pressure will always travel toward areas of lower air pressure, creating a flow path for the fire to travel. These lower air pressure areas are the public hallways, vertical shafts, stairwells and elevators. Lower air pressure areas also include other open apartment doors and open windows, especially on the opposite side of the public hallway from the fire apartment. Vertical ventilation will only be performed at the direction of the IC. This must be coordinated through direct communication with the engine and ladder company officers operating in the fire sector or the Fire Sector Supervisor.
• Stack Effect: Natural, thermal air movement, either positive (up) or negative (down) within a structure, most often in the direction of vertical shafts. The stack effect is influenced by the height of the building, temperature differential between outside and inside temperatures, air leakage to other floors, and the wind.

• Wind: A major factor for smoke movement within a structure. Wind pressures external to the building create pressures within the structure on both the windward side (high pressure) and leeward side (low pressure) because of leakage through windows, walls or other openings, however small. The degree of increased internal pressure depends upon the extent of leakage. Wind blowing into a fire apartment before extinguishment will accelerate the fire into blow torch proportions, pushing fire and heat to lower pressure areas throughout the fire floor and building. Wind blowing into an apartment after a fire is controlled will push smoke to lower pressure areas throughout the building. Wind blowing across the roof level is also a factor to consider. If it is blowing into an open, roof bulkhead door, it will cause heat and smoke to flow downward, causing the lower floors and/or lobbies to be contaminated with smoke during fire operations. Generally, wind moving across a roof level will cause a lower pressure to be created, which can increase positive stack effect inside the stairwell, regardless of which side of the building the wind is impacting or the position of the bulkhead on the roof. The Department has always been aware of the dangers and problems associated with wind impacted fires on any floor of a fireproof multiple dwelling. When the fire apartment door has been left in the open position and the windows fail, the public hall becomes an extension of the fire area. We must always consider the effects of wind at every fire encountered. Improper ventilation, even when the fire is on a lower floor, or appears to be minor, can have disastrous results.

• HVAC: These systems and their components of duct work and shafts can contribute to smoke infiltration in other areas of the building. An IC should confirm that all HVAC systems are shut down prior to commencing any fire operations. They are installed most commonly in hotels and the hallways of upscale high-rise apartment buildings.
6.3 VENTILATION PROCEDURES:

6.3.1 The ventilation procedures employed by the FDNY in high rise office buildings have served us well in the past. In these occupancies, our means to effect ventilation are limited. In fact, ventilation for smoke removal is usually performed after the main body of fire has been controlled. This methodology is used to eliminate the possibility of wind being introduced to the fire area, which may then cause the spread of fire and smoke throughout the building. More importantly, indiscriminate ventilation can create conditions that place our attack forces in serious danger and hamper the search efforts. Ventilation procedures in HRFPMDs vary greatly from the procedures we use for non-fireproof multiple dwellings. Like high rise office building procedures, ventilation of the fire apartment in HRFPMDs should take place after the main body of fire has been controlled. The IC shall control all ventilation other than the fire apartment.

6.3.2 Horizontal ventilation of the fire apartment is limited and controlled by the ladder officer operating inside the apartment. All other ventilation must be strictly limited and controlled by the IC.

6.3.3 In some HRFPMDs, there may be windows in the public hallways and stairways. Hallway and stairway windows make the task of controlling flow paths more difficult. These windows shall not be ventilated without prior approval of the IC.

6.3.4 Stairways other than the evacuation stairs may be used for venting the fire floor. All members operating will be advised by the IC of the letter designation of the stairwell being used for ventilation and smoke removal operations. These operations shall only begin upon the authorization of the IC. Where only two stairways are present, the attack stairway will be the primary means for vertical ventilation when the main body of fire has been knocked down and when authorized by the IC. However, the IC may authorize smoke cleared from a stairway before attack operations were to commence. This would be accomplished with positive pressure ventilation fans.

6.3.5 Roof ventilation operations can dramatically affect the airflows (from high pressure areas to low pressure areas) inside the building. These changes in building pressures and air flows can cause changes in the fire’s behavior that could have adverse effects on operating forces. **Vertical ventilation shall only be performed at the direction of the IC.** Units must constantly monitor building conditions, reporting any changes to all operating units and the IC. Stairways and elevators must be checked and monitored on a continual basis. Conditions in stairways can change dramatically at a wind impacted fire. Stairways relatively clear of smoke at the onset of the operation may soon become severely contaminated with smoke, especially the attack stairway. The possibility of tenants entering a stairway above the fire floor must always be expected and all stairways and hallways must be monitored on a continual basis for the presence of victims.
6.4 ELEVATORS

6.4.1 Elevators equipped with Fire Service shall be operated by a firefighter as per Training Bulletin Emergencies 1, Elevator Operations. Personnel shall exit at least two floors below the fire. Before proceeding to the fire floor, members shall survey the layout of the stairs, hallway, and apartment below the fire apartment. The firefighter operating the elevator shall then return to the lobby with the elevator. When an elevator not equipped with fire service is used, it shall be returned to the lobby unstaffed.

6.4.2 Stairs shall be used when the fire is on the seventh floor or below. The first arriving ladder company shall recall the elevators, whether or not they will be used. The second to arrive ladder company shall ensure that all elevators are recalled and searched. Regardless of the fire floor, the IC must ensure that all elevators are recalled, searched and controlled early in the operation, preventing civilians from placing themselves in danger by entering the elevator cars during the incident.

6.4.3 Elevator shafts are conduits for vertical transmission of smoke and heat. The doors to elevator machinery rooms at the roof level should not be used for ventilation purposes until the fire is under control. Ventilation of the building and stairwells shall be conducted as per our operational procedures. After the fire is under control, the elevator machinery room, if located at roof level, can be vented by opening doors to the exterior, as long as wind will not force smoke back into the building.

6.4.4 Some building types may have two elevators, one serving odd and one serving even floors. Members may arrive at a location more than two floors below the fire due to this alternate floor system. In most buildings, the elevators serve all floors or there are elevator bank systems that serve lower floors and upper floors.

6.4.5 Overloading of elevators must be avoided or the units responding will be delayed arriving at the fire/emergency floor. A stalled elevator car is an elevator car out of service. Look for maximum load signs and consider each member and their equipment to be greater than 275 pounds.

6.4.6 When both the engine and ladder companies arrive together and only one elevator is available (non fire service), the ladder officer with the forcible entry team and the engine officer with two firefighters (nozzle & control) with all rolled up lengths and standpipe kit shall go up first. If the elevator has Fire Service, and no outside operations are indicated, the OV will be operating the elevator. This will necessitate reducing the elevator load by one of the engine firefighters. Remaining members in the lobby are to make up a second team for the next elevator or consider using the stairs. This approach will allow these members to begin setting up equipment for the appropriate attack strategy and size-up information to be conveyed to the IC and all other operating units.
A. The first to arrive OV firefighter shall first complete an outside survey of the fire building. If no outside operations are indicated and the building has Fire service elevators, the OV firefighter will:

- Report to the lobby
- Place an elevator car in Fire Service Phase II

B. If the OV firefighter is involved in an outside operation and the fire is above the seventh floor, the elevator cars will be operated by a member from second ladder and/or other members designated by the IC. The IC must ensure that, if available, at least 2 elevators will be driven in “Fire Service Phase II” by firefighters for the duration of the operation.

6.4.7 Some building designs for the more exclusive type of HRFPMDs have elevators opening directly into apartments or into foyers. This type of elevator has each floor landing door locked for security reasons. Other types open onto a small landing or foyer with only two doors, each serving one apartment. No stairs or other means of egress are provided from this type of foyer and these types of elevators should not be used by members. The service/freight elevator in these buildings will usually service all floors. Pre-planning will identify these buildings, which can take place during Building Inspection Safety Program (BISP) or familiarization drills. Check with the building service personnel to determine where these elevators may be located.

A service/freight elevator shall not be used until it is has been evaluated and declared safe for use by the company officer. Once deemed safe for use, take the service/freight elevator to two floors below the fire and take the stairs to the correct floor. Standpipes are usually found in this service stairway. Service stairs in these buildings may be locked on the first floor with a wire mesh door that permits egress from upper floors but no entry into the stairs from the first floor. These mesh doors are easily forced. This information, and location of the service/freight elevator and service stairs, should be entered into the CIDS program.

6.4.8 After all units are in position, and two elevators are available and serviceable, maintain one elevator on standby in the lobby and one two floors below the fire. This would allow the transport of members required for relief and/or transport of injured members or civilians down to the lobby.
6.5 FORCIBLE ENTRY

6.5.1 Fire Floor:

A. It is not usually necessary to force apartment doors on the fire floor other than the fire apartment door. A heavy smoke condition in the hallway indicates that the door to the fire apartment most likely has been left open. When the main body of fire has been controlled, adjoining apartments can be forced for reasons such as high carbon monoxide readings or severe smoke conditions in the public hallway. Ladder companies shall report in with their carbon monoxide meters to reported fires in HRFPMDs. The ventilation effects of forcing doors other than the fire apartment on the fire floor cannot be accurately predicted. Air movement (high pressure to low pressure flow paths), may work against our firefighting and search efforts. Operations should not cause unnecessary damage to the building or endanger occupants of the other apartments who are sheltering in place.

B. If confronted with wind impacted fire conditions, notify the IC and follow procedures outlined in Addendum 3:

C. If it is decided that an apartment door is going to be forced to provide an area of refuge, the door selected must be to an apartment that is entirely on the same side of the building as the fire apartment. This will prevent fire from being drawn across the hall if the fire apartment windows fail, putting members in the flow path.

6.5.2 Floors Above:

A. Generally, the only apartment requiring access on the floor above is the apartment directly above the fire apartment. No other doors should be forced without sufficient reasons, e.g., high carbon monoxide readings at the end of a hall, specific reports of persons needing assistance, concentrated smoke conditions due to stack effect on a particular floor.

6.6 COMMUNICATIONS:

6.6.1 When handie-talkie communications are hampered between operating sectors/groups and the Incident Command Post (ICP), consider the following:

- Use of Post Radios on the Command Channel deployed to each sector/group.
- Use of the Vehicle Cross Band Repeater, if available, on the Command Channel.
- Setting up a handie-talkie relay on intermediate floors.
- Utilizing personnel outside of the building to relay handie-talkie messages.
• Moving to a different position in the lobby. Example: walking around in the vicinity of the elevators to find a suitable location may help you find a spot that improves the quality of communications considerably.

• Cell phones shall be turned on and carried by Battalion and Division firefighters.

• Utilizing any building communication system if present and reliable.

6.6.2 Signal 10-77

The 10-77 signal shall be transmitted for a Fire in a High Rise Fireproof Multiple Dwelling.

Note: High Rise Building includes all buildings 75 feet or more in height.

A. The 10-77 signal should provide sufficient units to initially manage a fire and smoke condition in a HRFPMD.

Some Examples:

• Wind impacted fire conditions.

• Advanced fire on arrival.

• Heavy smoke on numerous floors.

• Numerous reports of persons in difficulty due to smoke.

B. When a second alarm is transmitted for a fire in a HRFPMD prior to the transmission of a 10-77, the IC will receive the balance of the 10-77 assignment, in addition to the second alarm assignment.

6.6.3 The FAST Unit and CFR Engine shall be assigned to the Fire Sector when the fire is above the sixth floor. They can be staged on the floor below the fire floor, ready for rapid deployment. At lower floor fires (sixth floor or below), the position of the FAST Unit and the CFR Engine will be determined by the Incident Commander. The FAST Unit should carry a set of elevator keys.
6.7 1ST ENGINE COMPANY TO ARRIVE

Due to the complexity of supplying and stretching from standpipe systems, the first and second arriving engines companies will always operate together in order to ensure prompt and efficient placement of the first hoseline. Initial hoselines stretched from a standpipe shall be from an outlet on a floor below the fire.

6.7.1 Equipment:

- One length of hose per firefighter (some floors may require more than three lengths).
- Standpipe kit

Note: Officers and firefighters shall use every opportunity during outside activities to identify buildings where a three length stretch from a standpipe would not be sufficient. The identity of these buildings should be made known to all first alarm units and should be entered into the CIDS program.

The Engine Company officer shall announce via the handie-talkie when the initial hoseline attack is to commence. All members must be alert to fireground communications concerning hoseline placement and the commencement of hoseline operations so that they may seek refuge if necessary.

Variations from stretching initial hoselines from standpipe outlets on a floor below the fire due to building configurations shall be approved by Division Commanders and entered into the CIDS program.

6.7.2 Duties:

Take elevators to at least two floors below the reported fire floor using precautions normally taken with elevators. Examine this floor for the following:

- Hallway layout;
- Scissor stairs correctly labeled;
- Location of the reported fire apartment;
- The best stairs from which to attack the fire;
- Length of stretch from the attack stairs to the fire apartment;
• The number of apartment doors from the attack stairs to the fire apartment
door;

• All turns the hose stretch will need to make in order to reach the fire
apartment.

Communicate with the ladder company officer to select the attack stairway. The
attack stairway need not be the stairway with a standpipe outlet. The hoseline can
be connected and stretched on the floor below and then up another stairway that is
closer to the fire apartment to facilitate advance. Take time to make a reasonable
choice. Due to conditions caused by a wind impacted fire, one stairway may
afford an advance with conditions less severe. Once the attack stairway is
selected, all hoselines will be stretched and operated from this stairway. Notify
the 2\textsuperscript{nd} engine and IC of the designation of the attack stairway.

6.7.3 Charging the hoseline:

A. If the ladder company has control of the fire apartment entrance door:

• The hoseline can be advanced to that location and charged.

• The engine officer will assist with keeping the fire apartment door closed
until there is water at the nozzle and the hoseline is ready to advance into
the apartment.

• In most cases, the hoseline shall not enter the apartment until the ladder
company locates the fire and provides direction for the advancing engine
company.

B. When the apartment door has been left open, the public hallway is now
considered an extension of the fire area, (fire apartment and public hallway):

• The hoseline should be charged before exiting the attack stairway.

• In most cases, the hoseline shall not enter the public hallway until the
ladder company locates the fire apartment and provides direction for the
advancing engine company.

C. Engine companies shall not enter the IDLH without a charged hoseline.

D. Officers must be aware that, when entering a hallway with a charged hoseline,
if window failure occurs and a wind impacted fire develops, a hoseline will
not provide sufficient cooling of the hallway to protect exposed members.
Alternate strategies must be implemented when necessary to ensure the safety
of operating members.
E. At severe fires in these buildings many times it takes one engine company to place the hoseline into position and a relieving company is used for final extinguishment due to punishing conditions and diminishing air supplies.

F. The control firefighter of the 1st to arrive engine company will complete the connection to the standpipe outlet, charge the line when ordered, provide proper water pressure, and remain at the standpipe outlet throughout the operation to provide orderly and accurate communications and continuity.

6.7.4 Line Advance:

There is the ever present danger that heat and fire conditions can change drastically. Factors that can affect changing fire and heat conditions are:

- The adverse change in air flow through the fire apartment caused by window failure due to the fire or premature venting.
- The necessary opening of the fire apartment and attack stairway doors by members.
- A tenant opening an apartment door on the fire floor on the opposite side of the public hallway from the fire apartment.
- Increased stack effect caused by the opening of the attack stairway lobby and bulkhead doors. The bulkhead door shall be vented upon the direction of the Incident Commander after the main body of fire has been controlled.

When any of these conditions exist and the line cannot be advanced out of the attack stairwell, the unit operating the first hoseline should maintain their position in the attack stairwell with the stairwell door closed. The IC must be notified and alternate strategies implemented as described in Addendum 3.

6.7.5 Use of the fog tip for ventilation of the fire apartment:

After the fire has been extinguished, if the positive pressure fans used for stairwell pressurization and smoke removal are ineffective in venting the fire apartment, the engine company officer should call for the fog tip to be brought up to the fire floor. The fog stream can be directed out an open window to assist in venting smoke from the fire apartment.
6.8 2ND ENGINE COMPANY TO ARRIVE

The 2nd engine company to arrive will operate with the 1st engine company on the scene to stretch and place the first hoseline into operation. The 1st and 2nd engine officers must communicate and ensure that there are sufficient members properly positioned on the 1st hoseline, to rapidly advance and extinguish the fire. The 2nd engine officer must recognize, and request additional assistance from the IC, when long and complicated stretches are encountered.

6.8.1 Equipment:

- One length of hose per firefighter
- Standpipe kit
- Post Radio (obtained from first arriving Battalion)

6.8.2 Duties:

Upon arrival, ensure the Siamese is supplied and provide assistance where necessary (e.g., extremely long stretch to the Siamese, broken Siamese, frozen hydrant, etc.)

Obtain Post Radio from 1st arriving BC and bring it to the standpipe outlet where first hoseline is being connected and establish a communications link on the Command Channel between the fire sector and the IC if necessary.

Take elevators to at least two floors below the reported fire floor, using precautions normally taken with elevators. Upon exiting the elevator, survey the hallway to determine:

- Hallway layout;
- Location of the reported fire apartment;
- Length of stretch from the attack stairs to the fire apartment;
- The number of apartment doors from the attack stairs to the fire apartment door;
- All turns the hose stretch will need to make in order to reach the fire apartment;
- The number of turns in the stairwell.
- Has the line been charged or will it be charged before leaving the stairway?
Support the 1st engine company operation by assisting in the stretch, ensure sufficient lengths of hose available for advance into fire apartment, facilitate smooth advance onto the fire floor and into the apartment, and ensure proper water pressure. The 2nd engine officer must advise the IC when their members are assisting the 1st engine advance into the IDLH. The IC would then be aware of the resources required for relief. The officer must also inform the IC when and where additional assistance is required on the first hoseline (e.g., in the stair, on the floor below, on the fire floor hallway).

6.9 3RD ENGINE COMPANY TO ARRIVE

The 3rd engine company to arrive is responsible to start the stretch of a second hoseline when required. They will be assisted by the 4th engine company. If a second hoseline is not required, the IC shall be notified.

6.9.1 Equipment:

- One length of hose per firefighter
- Standpipe kit

6.9.2 Duties:

The second hoseline is usually stretched from two floors below the fire. The second line will be stretched via the attack stairway and this will be the factor in determining which standpipe outlet to use. Additional lengths of hose will probably be needed from the 2nd or 4th engine companies. The additional lengths should be added between the last length of the second hoseline and the standpipe outlet. The control firefighter will complete the connection to the standpipe outlet, charge the line when ordered, provide proper water pressure, and remain at the standpipe outlet throughout the operation to provide orderly and accurate communications and continuity.

6.9.3 Charging the hoseline:

The third engine officer will determine when this hoseline shall be charged. This line should be charged at the stairway door to the fire floor depending on hallway conditions and size of the fire area. When the second line is charged the pressure on the first line may drop; therefore, the control firefighter at the standpipe outlet supplying the first line and the officer of the first line should be notified. This control firefighter must be aware of the possible need to adjust pressure on the first line. An uncharged line shall never be stretched into an IDLH.
6.9.4 Line Advance:

The second line may be used to:

- Back up the first line
- Advance with the first line
- Operate the Hi-Rise Nozzle
- Operate into a breach in the adjoining apartment wall while the first line is protecting the public hallway
- Go to the floor above due to auto exposure via windows or air conditioner sleeves
- Operate on the floor above due to extension via utility voids or steam pipe risers

6.10 4TH ENGINE COMPANY TO ARRIVE

The 4th assigned engine company is responsible to support and assist the 3rd engine company’s operation.

6.10.1 Equipment:

- One length of hose per firefighter
- Standpipe kit

6.10.2 Duties:

Upon arrival, the 4th Engine Officer will have his/her unit bring one length of hose per Firefighter and the standpipe kit, and report in to the IC at ICP. Upon the IC’s orders, bring all their equipment to the floor below the fire. They should be prepared to support the following:

- If a second hoseline is to be used, then it is critical that the 4th engine supply the additional lengths of hose needed to assure that the second hoseline will reach its destination. They must ascertain the designation of the attack and evacuation stairways and ensure the hoseline is stretched via attack stairway.
6.11 **5\(^{\text{TH}}\) ENGINE COMPANY TO ARRIVE**

The 5\(^{\text{th}}\) assigned engine company is responsible for placing the High Rise Nozzle (HRN) into operation, if this alternate strategy is needed.

If the 5\(^{\text{th}}\) assigned engine company is not equipped with a HRN, the officer shall contact the dispatcher for the identity of the unit carrying the HRN that has already been assigned to the 10-77.

**Note:** Every 10-77 will have at least one HRN equipped engine company assigned to the incident. Each Battalion has at least one engine company that is equipped with a HRN.

6.11.1 Equipment:

- One length of hose per firefighter
- Standpipe kit
- High Rise Nozzle

6.11.2 Duties:

Upon arrival, the 5\(^{\text{th}}\) Engine Officer will have his/her unit bring the HRN, one length of hose per Firefighter and the standpipe kit, and report in to the IC at ICP. Upon the IC’s orders, bring all their equipment to the floor below the fire. They should be prepared to support the following:

- If the HRN is to be used, the 5\(^{\text{th}}\) assigned engine will put it into operation. They will either use the hose already in place for the second hoseline, or stretch their own line. Notify the IC or Fire Sector Supervisor for assistance if needed with the hose stretch or forcible entry.
6.12 CFRENGINE COMPANY

This unit will report to the Incident Commander and stand by with the FAST Unit.

6.12.1 Equipment:

- CFR equipment
- Forcible Entry Tools

6.12.2 Duties:

- Announce designation as CFR Engine and ascertain identity of FAST Unit.
- Monitor handie-talkie transmissions while standing fast.
- Note the designation of attack, evacuation stairways and apartment numbering system, etc.

6.13 LOWER FLOOR FIRE

If the fire is located in a below grade area or lower floor, and there is no access to an available standpipe outlet or one that is not in the IDLH, a hand stretch of 2½" hose from the pumper will be required. A hand stretch from a pumper may also facilitate a smooth advance into the fire area on these lower floors.
6.14 1ST LADDER COMPANY TO ARRIVE

6.14.1 This unit is responsible for:

- Elevator recall to gain control of the elevators and to prevent occupant use.
- Control of the attack and evacuation stairway doors on the fire floor.
- Control of the fire apartment door.
- Search and ventilation of the fire apartment.

**Note:** The officer of the ladder company will initiate and/or control (prevent) horizontal ventilation of the fire apartment. No other company officer or firefighter should attempt any ventilation of this apartment without the approval of the first ladder officer. Entry and search of this apartment can be extremely hazardous based on the height of the building, weather and wind conditions, the location of the apartment and the stack effect. The officer may decide that the fire can best be extinguished without any horizontal exterior ventilation.

6.14.2 Officer and Forcible Entry Team

Tools: Extinguisher, hook, axe, Halligan, Hydra Ram, search rope, SCBAs, carbon monoxide meter, and the Thermal Imaging Camera (TIC)

Duties:

A. Take an elevator in Fire Service, if available, to at least two floors below the reported fire floor, using precautions normally taken with elevators. Examine this floor to determine fire apartment location, stairway locations and type, correct labeling of scissor stairs, etc. This slight delay will enhance your operation on the fire floor should you encounter a heavy smoke condition in the public hallway.

B. Notify the IC or Engine Officer (if the IC is not on the scene):

- The stairwell closest to the fire apartment;
- The type of stairs (open/enclosed, scissor/return, etc.)
- If scissor stairs, whether they are or are not correctly labeled.
C. Consult with the engine officer before selecting an attack stairway. Once this designation has been made, all operations are to proceed from this stairway. All other stairways, if any, must be maintained clear of smoke for evacuation.

D. Upon arriving at the fire floor in a FPMD, members must evaluate conditions. If a smoke and/or heat condition exists in the public hallway, notify the IC and operate as follows:

- Prior to entering the public hallway, the Ladder Officer shall get a report on exterior conditions from members operating outside the building and the Roof firefighter operating on the floor above. If it is determined the smoke and/or heat condition in the public hallway is due to a wind impacted fire, members shall remain in the stairwell and follow procedures outlined in Addendum 3, Wind Impacted Fires.

- If unable to determine if this is a wind impacted fire, the Ladder Company Officer and one member of the forcible entry team shall enter the public hallway to locate the fire apartment and control the fire apartment door. The other member of the interior team will remain at the attack stairwell door on the hallway side of the door to ensure the stairwell door remains closed limiting the flow path and to act as a beacon in case members need to evacuate the hallway. The Engine Company Officer shall be responsible for control and coordination on the stairwell side of the door.

- If while operating in the public hall, it is determined to be a wind impacted fire, the Ladder Company Officer shall ensure members exit the public hallway immediately and follow procedures outlined in Addendum 3, Wind Impacted Fires.

E. Once the Ladder Company Officer gains control of the fire apartment door, notify the IC and have the Engine Company advance the hoseline to the fire apartment door. The Ladder company member who remained at the stairwell door shall also advance to the fire apartment door.

**Note:** If while at the apartment door reports are received from members operating on the floor above or the exterior that wind is impacting the fire, follow procedures outlined in Addendum 3, Wind Impacted Fires.

F. If wind is not impacting the fire and conditions allow, enter the fire apartment to search. Search team must be prepared to exit quickly and control the fire apartment door under all circumstances. Do not chock the door open until a charged hoseline is moving into the fire apartment.
G. Control of the fire apartment door can be accomplished by positioning a member inside the door with door closed, but not locked. The door can be ajar with the dead bolt extended, preventing the door from completely closing. The intent is:

- To deny the fire air, which will inhibit fire growth.
- To deny the fire (high air pressure area) a path of travel to any low air pressure areas via the public hallway.
- Provide verbal direction for the search team to get back to the fire apartment door if heat conditions necessitate withdrawal.

H. Once inside the fire apartment, locate the fire area/room and:

- Control the fire by using the extinguisher or closing an interior door;
- Inform the engine officer the location of the fire area;
- Clear a path for the advance of the hoseline;
- Report results of the primary search to the IC;
- Begin overhaul as needed, trying not to hamper efforts of the thorough secondary search, which will subsequently be conducted by another company.

I. The 1st ladder company officer must continually monitor conditions on the fire floor along with reports received from the floor above and the exterior.

6.14.3 Outside Vent Firefighter

Tools: Halligan, hook or axe

Duties:

A. Conduct an outside survey with chauffeur.

- If VEIS can be made with ladders, the outside team must communicate with the ladder officer in the fire apartment to request permission before commencing VEIS of the fire apartment.
• If no outside operations are indicated, then:

1. If the fire building has fire service elevators, proceed into lobby and take control of an elevator car using the fire service feature (1620 key). This position shall then be maintained until relief is provided by IC.

2. If the fire building does not have fire service elevators, then proceed to the fire floor, team up with your officer and assist in the search of the fire apartment.

Note: It has become common for NYC Housing Authority to have apartment letters stenciled on the exterior of the building; either on or below the first floor window sill. These markings provide a valuable reference point and should be included in the OV size-up. Be aware that in some instances, the actual apartment lettering can change from floor to floor and not all apartments will line up in the same vertical row. This condition is usually found between the first and second floors, but may vary between upper floors as well, especially in buildings with duplex and sandwich apartments. It is crucial that only correct apartment information be conveyed to units operating within the building. Therefore, when giving a report from the exterior of the building, the OV should include the letter markings as a guide; e.g., “L26 OV to L26, on the exposure 3 side I see light smoke seeping from an 8th floor window. That should be the “B” apartment according to the exterior markings.”

Units with NYC Housing complexes in their administrative district that do not have the markings, or where markings have faded, can contact the local management office and request they be provided or updated.

6.14.4 Roof Firefighter

Tools: Halligan, Hydra Ram, and KO Curtain

Duties:

A. Proceed to the apartment directly above the fire via the attack stairway if possible, and gain entry. If the attack stairway is an IDLH area, team up with another member prior to proceeding to the floor above.

• The Roof FF shall notify the IC of the conditions in the public hall (smoke, civilians evacuating etc.) on the floor above the fire.
B. Notify your ladder officer of conditions found, such as:

- The apartment layout.
- The fire location on fire floor – Visible fire or smoke coming from the fire apartment.
- Report on wind conditions – determine what windows serve the fire room. By keeping the apartment door open and opening a window in the room over the fire room, the roof firefighter will be able to simulate how the wind will flow through the fire apartment. Size up this location on preparation to deploy a WCD, if warranted.
- Persons trapped at windows.

  1. Notify your officer and the IC, try to calm the person, and call for the life saving rope.

  2. The IC should contact this member and question the feasibility of a successful life saving rope rescue. If the windows below are protected with child guard gates, or are of the awning or casement type windows, a rope rescue may not be possible. If these conditions exist, all efforts to extinguish the fire and attempt a rescue from the interior shall take priority.

  3. If a life saving rope rescue is appropriate, the IC will ensure the LSR is being brought to the apartment above, and will simultaneously reinforce this floor above position with the second ladder, rescue, squad or an engine company. If a life saving rope operation is conducted, units will be needed at the point of rescue in the apartment below the fire, to prepare the window for the member’s entrance.

- KO Curtain deployment may be needed. Fire pulsating from a window indicates gusting wind conditions or over pressurization of the fire room by the wind, and may at first allow fire to vent out of the window, only to push the fire back into the window without warning. Do not break the window glass. Open window; deploy WCD when ordered by the IC, then close window onto the WCD ropes. Auto exposure is possible. Call for an extinguisher or hoseline if needed.
6.14.5 Chauffeur

Tools: The chauffeur shall select the tools deemed necessary to complete the assignment.

Duties:

A. Conduct outside survey with OV as per sec. 6.13.3. Deliver the LSR to the floor above if Roof Firefighter has called for it, unless you can reach the victim from the exterior by aerial, TL, or portable ladder. If you are delivering the LSR to the floor above, notify your officer if you are assisting or continuing to the roof.

B. If no outside operations, WCD or LSR evolutions are indicated, team-up with 2nd chauffeur and proceed to roof. Ensure that stairway bulkheads are not vented until the main body of fire is knocked down. Inform the IC of conditions found on the roof and only vent the bulkhead upon the direction of the IC. Bulkheads of elevator machinery rooms shall not be used for ventilation purposes until the fire is under control.

C. Check the condition of the hallway on the top floor, and all stairways leading to the roof for the presence of smoke and victims. If any stairway is an IDLH, await the 2nd LCC or available member before searching. Notify the IC and ladder company officer of conditions found and search results.

D. There is the possibility that ventilation ducts in the public hallway may spread smoke to hallways on upper floors. Report conditions found to IC. A severe smoke condition on a number of floors (stack effect) will require additional units for search.

E. Access to the roof:

- Verify the identification of both the attack and evacuation stairways. Members shall never take a Fire Service elevator which services all floors to go above the fire. When assigned to go above the fire via an elevator, choose an elevator which has a blind shaft on the fire floor. Remember a "Fire Service" elevator is not necessarily a "safe" elevator. It can still be affected by heat, smoke or water entering the shaft. If there is no blind shaft elevator to go above the fire, then take the elevator to 2 floors below the fire floor and proceed to the roof via the evacuation stairway.

F. Control Vertical Ventilation:

- Members assigned to roof operations must remain at the roof level to ensure that bulkhead doors remain closed until the IC orders them vented. These members will be in position to assist the ventilation support group with stairwell pressurization and sequential ventilation.
When conditions are encountered such as broken bulkhead windows, doors missing or incapable of being closed, the IC and units operating in the fire sector shall be notified. This open bulkhead door will cause the movement of smoke and heat to that stairwell and will also diminish the effectiveness of any stairwell pressurization activity that may have been initiated.

6.15 2ND LADDER COMPANY TO ARRIVE

6.15.1 This unit is responsible for:

- Ensure that all elevators are recalled and searched.
- Control ventilation in areas other than the fire apartment as directed by the IC.
- Search of the public hallway, and ensure all evacuation stair doors are closed on the fire floor.
- Search of the attack stairwell for five floors above the fire floor.
- Coordinate WCD deployment, if ordered deployed by the IC.

6.15.2 Officer and Forcible Entry Team

Tools: Extinguisher, hook, axe, Halligan, Hydra Ram, search rope, SCBAs, carbon monoxide meter and TIC.

Duties:

A. Recall all elevators, regardless of the fire floor location and whether or not FD members will use them, to gain control of the elevators, prevent occupant use, and to ensure they are searched.

B. Take elevator to at least two floors below the reported fire floor, using precautions normally taken with elevators.

C. Examine this floor and try to determine the fire apartment location, stairway, etc, to enhance your operation in the fire floor hallway in case a heavy smoke condition exists.

D. Proceed to the fire floor via the attack stairway and communicate with the engine and ladder company officers on the fire floor to confirm the attack and evacuation stairways.
E. Maintain the evacuation stairway door/s closed and initiate search of public hallway on the fire floor. If persons are found in the stairway notify the IC and direct them below the fire sector. If persons are found in the hallway, notify the IC and remove them to an evacuation stairway. Be aware that the building occupants opening their apartment doors to evacuate should be advised to stay in their apartment, if it is tenable. They will not know which stairway is being used for evacuation. Extinguishment of the fire will ensure control of the public hallway, which will allow occupants to be safely evacuated as conditions permit. The integrity of the evacuation stairway(s) on the fire floor must be maintained. This is a critical task to help prevent smoke migration to the upper levels of the stairway while also maintaining a viable escape route for trapped occupants above the fire floor. There may be more than one evacuation stairway in a building. Any stairway not designated as the attack stairway is considered an evacuation stairway.

F. Communicate with the ladder company officer in the fire apartment to see if any help is required. In most cases, the members of the first ladder company are sufficient to operate in the fire apartment unless multiple removals are necessary.

G. While searching the public hallway, use sound judgment when deciding to force entry into adjacent apartments. Severe heat and smoke conditions or high carbon monoxide readings are two possible indications of the need to force adjacent apartments. If possible, this should be done after the main body of fire has been knocked down.

H. After searching the hallway on the fire floor, initiate search of the attack stairway for five floors above the fire to search for any building occupants that may have tried to evacuate using these stairs. Communicate results of searches to the IC, or Fire Sector if established.

I. If a WCD deployment is initiated, the 2nd ladder company officer must coordinate this evolution. Points to address:

- Is assistance needed on the floor above?
- Is an extinguisher/hoseline needed in the apartment above in case of auto exposure?
- Are there members in the apartment below the fire apartment to secure the lower WCD ropes?
- Is a spotter in place on the exterior of the building for guidance?
- Notify IC of any needed assistance, progress, or lack of progress.
6.15.3 Outside Vent Firefighter

Tools: Halligan, hook or axe.

Duties:

A. Contact 1st OV/chauffeur via handie-talkie.

B. If outside operations are in progress, team up with your 2nd ladder chauffeur and assist with same.

C. If no outside operations are indicated and the building is equipped with fire service elevators, operate in conjunction with the OV from the 1st ladder company and secure another elevator.

D. If the building does not have fire service elevators, proceed to the fire floor, team up with your officer and operate as ordered.

E. If the building has a “service” freight elevator that is remote from the fire area and can be safely used, notify the IC and operate the service elevator, if directed, with building personnel.

6.15.4 Roof Firefighter

Tools: Halligan, Maul, Life Saving Rope and Life Belt.

Duties:

A. Proceed to the apartment directly above the fire via the attack stairway. If attack stairway is an IDLH area, team up with 1st roof firefighter before proceeding above. Operate as per section 6.13.4.

6.15.5 Chauffeur

Tools: The chauffeur shall select the tools he/she deems necessary to complete the assignment.

Duties:

A. If outside operations are in progress, team up with 2nd OV and assist with same.

B. If no outside operations are indicated, team up with 1st to arrive LCC and operate as per sec. 6.13.5.

C. If LSR or WCD evolutions are in progress, assist if needed.
6.16 3RD LADDER COMPANY TO ARRIVE

6.16.1 This unit shall report into the lobby with all personnel and be directed by the Incident Commander. The progress of the fire operation will determine their assignment.

6.16.2 The 3rd ladder company officer shall confirm the evacuation stairway door(s) have been closed on the fire floor and are maintained in a closed position. This may be accomplished by positioning members on the stairwell side of the evacuation stairway door(s) until the Fire Sector Supervisor and/or the IC deems that the situation no longer presents a hazard in that particular stairwell. There may be more than one evacuation stairway in a building. Any stairway not designated as the attack stairway is considered an evacuation stairway.

6.16.3 If roof operations are not being covered by the 1st and 2nd to arrive ladder company LCCs because of outside operations, WCD or LSR evolutions, then the Incident Commander may assign this responsibility to the 3rd to arrive ladder company. This unit shall operate on the roof and upper floors as per section 6.13.5 B thru F.

6.16.4 The Roof Firefighter shall proceed to the apartment directly above the fire with a KO Curtain, in addition to his/her normal complement of tools, to assist members operating on that floor.

6.16.5 If a WCD is being deployed, they may be assigned to the apartment below the fire apartment to secure the WCD lower ropes.

6.16.6 If a LSR rescue is in progress, they may be assigned to the floor below to receive the rescued victim and member being lowered on the rope.

6.16.7 Generally, they should be used to conduct searches of stairways and hallways when reports indicate severe smoke above the fire sector. They should be assigned specific stairs and floors and advised of the identity of the Search and Evacuation (SAE) Group Supervisor responsible for all searches on the upper floors. A carbon monoxide meter and TIC shall be included in their tools.

6.17 4TH LADDER COMPANY TO ARRIVE

6.17.1 Depending on the progress of the fire operation, this unit will usually assist or initiate searches on upper floors and stairs as determined by the IC. Specific stair and floor assignments shall be given along with the identity of the SAE Group Supervisor responsible for searches on upper floors. A carbon monoxide meter and TIC shall be included in their tools.
6.18 FAST UNIT

This unit will report to the Incident Commander and stand by with the CFR Engine Company.

6.18.1 Tools:

- FAST equipment as per Department policy

6.18.2 Duties:

- Announce designation as FAST Unit,
- Ascertain identity of the CFR Engine Company, and determine the location of EMS personnel on the scene.
- Note the designation of attack and evacuation stairways, apartment numbering system, and prepare for activation according to the guidelines listed in Firefighting Procedures, Volume 4, Book 1, Chapter 2 titled Firefighter Assist and Search Team – FAST UNIT.

6.19 VENTILATION SUPPORT GROUP

The Ventilation Support Group will be the 6th ladder company assigned on a 10-77. They will arrive with their second piece of apparatus and report to the IC with two positive pressure ventilation fans. Their assignment is to pressurize the attack and evacuation stairs in HRFPMDs in order to keep heat and smoke from entering the stairwell. Stairwell pressurization will not be initiated until authorized by the Incident Commander.

6.19.1 Equipment:

- Two 27 inch Tempest PPV Fans and exhaust hoses, eye and ear protection, Dave Clark headset and handie-talkies, CO detectors, elevator keys, Halligan and heavy axe (for elevator operations), door chocks, hand-lights, SCBA and full PPE.
6.19.2 Duties:

A. The attack stairwell is the first consideration for pressurization and will be pressurized upon the order of the IC.

B. The evacuation stairs shall be pressurized when conditions permit.

C. The priority order for the use of PPV fans will be:
   1. Pressurizing the attack stairwell to support the fire attack, by controlling the smoke condition at the attack stair doorway and throughout the attack stairway.
   2. Pressurizing the evacuation stairwell for smoke and CO control.
   3. Ventilating the public hallways for smoke and CO control.

D. The ventilation support group will inform the Incident Commander of the recommended placement of the PPV fans based on:
   - The number of PPV fans and personnel available
   - The location of the fire floor
   - The number of floors in the building
   - The stage of firefighting operations

E. When fans are in position, the IC shall be notified. The IC will authorize the pressurization.

F. All members on the fireground shall be notified that PPV operations are commencing. Communication to all units shall be maintained during the pressurization operation.

G. The PPV fans may arrive after the fire has been knocked down or extinguished. Depending on the remaining smoke and heat conditions, removing smoke and CO may become a priority. PPV fans can be used to sequentially ventilate these contaminants to the exterior.
6.20 RESCUE AND SQUAD COMPANIES

6.20.1 Duties:

A. Report to the IC upon arrival.

B. The Squad Company will deliver their Window Blanket to the floor below the fire (the normal location of the Fire Sector Supervisor).

- If the Blanket is to be deployed, the Fire Sector Supervisor will assign a unit.
- If a WCD has been deployed, ascertain from the IC if a second WCD should be deployed over the first. This could be necessary when the first WCD appears to be nearing failure due to fire impingement.

C. Rescue and Squad Companies can be assigned to perform or reinforce various assignments as needed and ordered. Some examples include:

- Assist when life saving rope rescue is in progress.
- Assist in primary searches.
- Account for of all elevators as directed by the IC.
- Perform secondary searches
- Standby under the direction of the Fire Sector Supervisor to be assigned as needed.
- Assist as needed in the set up and operation of the high rise nozzle.
- Rescue operations of any firefighters or civilians trapped in elevators.

6.21 CHIEF OFFICER COMMAND POSITIONS

6.21.1 HRFPMDs generally have limited or no building communication systems available in the lobby that can be used by Chief Officers to control and direct evacuation.

6.21.2 If a communication system does exist, the first arriving Chief may utilize this system to direct and control evacuation of the fire floor, and floors above. Extreme conditions may require evacuation of the floor below.

**Note:** The 2008 NYC Building Code requires one-way voice communication from the fire command center to all stairways and dwellings for all new R-2 buildings greater than 125 ft in height. HRFPMDs with communications systems should be entered into the CIDS program.
6.21.3 A position outside of the building may offer a view of the fire conditions. This is especially important when wind is a factor. The IC may be able to determine if the exposed face of the building is being subjected to the wind. This would afford greater control of operations when coordinating the deployment of WCDs and the operation of exterior streams, including the HRN.

6.21.4 When PPV fans are being utilized, a position outside of the lobby may provide better communication capabilities away from the background noise of the operating PPV fans.

**Note:** At operations requiring the resources of 10-75 or greater, all Chiefs, including the Safety and Rescue Operating Battalions, shall report in with their Post Radios and their aides in full PPE.

6.22 1ST BATTALION CHIEF TO ARRIVE

A. Establish a location best suited for the ICP.

B. If a location is selected other than the lobby of the fire building, advise the borough dispatcher to notify all incoming units.

C. Ensure the Post Radio is given to the 2nd to arrive engine officer, so that they can establish a communications link on the Command Channel between the fire sector and the IC if necessary.

- If the 2nd BC has not arrived, the IC may have to use the 40 watt UHF vehicle radio to communicate with the 2nd engine officer on the Command Channel.

- In an emergency, Post Radios can provide 45 watt communication on the tactical channel.

D. Announce the attack stair designation on handie-talkie and/or the Post Radio when required. The borough dispatcher shall also be advised of the attack stair letter designation so that they can announce it to all incoming units.

E. If scissor stairs are present, ensure proper labeling has been verified.

F. Ensure that the fire floor evacuation stair door(s) is/are being maintained in the closed position to reduce smoke contamination to the upper levels of that stairway. This task is initiated by the 1st and 2nd arriving ladder companies, and shall be confirmed and maintained by the 3rd arriving ladder company.

G. The IC shall ensure that Sector/Group Supervisors are aware of, and understand, the strategy the IC is planning to implement.

H. Establish communication links with all Sector/Group Supervisors.
I. Ensure all critical information received from the dispatcher and building personnel is relayed to the Fire Sector Supervisor and/or the SAE Group Supervisor.

J. Stage units in the lobby if room is sufficient, or outside the building when not immediately needed for assignment to any Sector/Group.

K. Ensure that all elevators are recalled, searched, and controlled.

L. Utilize 3rd or 4th ECC to assist in receiving and/or recording the information of calls from occupants on floors above, or as otherwise deemed necessary.

6.23 2ND BATTALION CHIEF TO ARRIVE - FIRE SECTOR SUPERVISOR

The 2nd Battalion Chief to arrive must report to the IC with their aide, and be prepared for assignment as the Fire Sector Supervisor.

Note: The Fire Sector is defined as the fire floor and the floor above.

Tasks and responsibilities include:

A. On arrival, deliver your Post Radio to the IC.

B. Before deploying to the fire sector, ensure the fire sector has a Post Radio.

C. Verify the attack and evacuation stairs.

D. Take a position on the first floor below the fire, where conditions permit.

E. The location of the Fire Sector Supervisor shall ensure reliable communications with the operating units in the Fire Sector and the ICP.

F. If scissor stairs are present, make sure proper labeling has been verified.

G. Confirm that the fire floor evacuation stair door(s) is/are being maintained in the closed position to reduce smoke contamination to the upper levels of that stairway. This task is initiated by the 1st and 2nd arriving ladder companies, and shall be confirmed and maintained by the 3rd arriving ladder company.

H. Relay to the Incident Commander any adverse conditions encountered on the fire floor, reporting the need to implement alternate strategies (flanking, HRN, other exterior streams, WCD deployment).

I. Supervise operations in the fire sector.
J. This supervisory function requires mobility to observe progress and conditions within the fire sector, without becoming physically involved in any operations supervised by company officers.

K. Prevent overcrowding of the fire sector.

L. Maintain order and reduce congestion in the attack stairway.

M. Report all progress or lack of progress to the IC.

N. Control ventilation when needed or as ordered by the IC.

O. Maintain communications with the IC, utilizing the Post Radio when required.

P. Ensure that the 1st and 2nd engines position and operate the 1st hoseline, and the 3rd and 4th engines position the 2nd hoseline as required.

Q. Make sure the 1st hoseline is in operation before a 2nd hoseline is started.

R. Notify the IC of the need for additional engine companies to facilitate the advance of the operating hoselines.

S. If necessary, ensure the HRN is in position and ready to operate.

T. If necessary, ensure entry is made to the apartment below the fire apartment so members can place HRN into position and/or secure the deployment ropes of WCDs.

U. If a WCD deployment is performed, augment the 2nd to arrive Ladder Company with sufficient resources to perform the operation.

V. Plan for the relief of members.

6.24 3RD BATTALION CHIEF TO ARRIVE - SEARCH AND EVACUATION GROUP SUPERVISOR

The 3rd Battalion Chief to arrive must report to the IC with their aide, and be prepared for assignment as the SAE Group Supervisor. The SAE Group Supervisor is responsible for searches on the floors, stairways and hallways above the fire sector.

Tasks and responsibilities include:

A. Establish the SAE Group post at a location on a floor above the Fire sector consistent with safety and the following criteria:
• Fire and smoke conditions-choose a non-IDLH area if possible.

• Ability to ensure reliable communications with the operating units in the SAE Group, Fire Sector Supervisor and the ICP.

• Mobility to observe progress and conditions within the SAE Group, without becoming physically involved in any operations supervised by company officers.

• Areas or floors within the SAE Group requiring attention, e.g. calls for trapped occupants, calls for smoke, etc.

B. Ensure Post Radio is utilized on the command channel.

C. Request sufficient units to conduct searches above the fire sector.

D. Record apartment and floor assignments and results to avoid duplication.

E. Continually monitor all stairways for the presence of smoke or occupants.

F. Request the use of PPV fans for smoke removal as needed.

6.25 DEPUTY CHIEF’S RESPONSIBILITIES:

A. The Deputy Chief shall assume Command, assisted by a Battalion Chief.

B. Deputy Chiefs shall make sure all positions are covered. If necessary, chief officers shall be special called and/or assigned as needed.

C. Determine if the incident is expanding, improving or remaining constant?

D. Evaluate tactics and strategies being used and adjust as needed.

• Are there any life issues and are they being effectively addressed?

• What is the status of the searches?

• What is the status of any reports received about occupants needing assistance?

• Are there adequate medical resources on the scene?

• What is the status of any injured civilians or firefighters?
E. For fire operations:
   - Is a direct frontal attack strategy being used and is it working?
   - Is wind negatively impacting operations?
   - Is a WCD being used? If so, are adequate resources deployed to control the WCD?

F. Are other alternate attack strategies needed:
   - Flanking, HRN or other exterior streams.

G. What is the smoke condition within the building:
   - On the fire floor?
   - On all floors above?
   - On all floors below (negative stack effect)?
   - In all stairwells?
   - Are PPV fans needed?

H. Establish a command channel to improve communications.
   - If more than one sector is established, the Command Channel must be established.
   - Battalion aides must deploy with their Chiefs to assist with communications and control/tracking of units.
   - A Post Radio must be located at each sector/group on the Command Channel.

I. Ensure adequate resources are available to cover all floors.
   - In many instances, engine companies may be assigned to perform searches on upper floors, stairs and hallways.
6.26 LIFE RESCUE OPERATIONS

A. Problems:

- Some windows in these buildings have fixed panes for the first pane above sill.

- Windows of casement or awning type may have fixed sections that limit accessibility and the ability to affect a LSR rescue.

- Sills are usually narrow.

- Persons may be trapped hanging out the window or standing on the sill. Sitting or straddling the window may not be possible if lower window section is fixed. Victim may be inaccessible due to height or ground area that could limit apparatus positioning.

- Heat or smoke from fire or hoseline can cause victim to lose position.

- Lack of communication between inside and outside team may cause delay in removal.

B. Solution:

- Removal by interior team.

- Removal by aerial, tower, or portable ladder.

- Rescue from floor above with life saving rope and lowering to floor below fire or to the ground. Members will have to be positioned on the floor below the fire to assist.

- Bridging from an adjacent balcony or window.

- Breaching walls from adjacent apartment.

- Deploy a WCD enabling the inside team to advance on the fire and effect the rescue.

C. Key points:

- When it is not necessary to remove occupants, generally, they should be instructed to remain in place with the door to the room they are in closed and the window open.

- It must be emphasized that the inside approach to removal is always preferable for both the victim and the firefighter.
• Be aware that rescue/removal can be made from any side, above, or below.

• If the doorman or superintendent is present, inquire as to the size of the apartment (e.g., number of rooms, duplex, triplex, etc.), and if keys are available.

• If the occupant of the fire apartment is in the lobby, if possible, ascertain if the door to the fire apartment is open, closed, locked, and if keys are available.

6.27 STANDPIPE AND SPRINKLERS

6.27.1 The ECC of the 1st to arrive engine company shall connect a 3½" line to the standpipe siamese and charge the system if any evidence of fire is present. All subsequent arriving ECC’s shall assist the 1st to arrive ECC in supplying the standpipe system, if needed. A second 3½" line shall be stretched to supply the siamese if:

• More than one line is to be used from the standpipe.

• There are indications that the system is not receiving enough water volume or pressure, (as determined by handie-talkie communication from the engine officer, IC, or readings on pump panel flow meter).

• A “no flow” registered on the flow meter indicates a valve is closed in the system (riser control valve). A “high flow” reading indicates a pipe may have fractured or other outlet valves are open on the riser.

6.27.2 The 2nd or 3rd supply line shall be connected to a lower floor standpipe outlet if:

• There is a riser control valve stuck closed between the siamese and the riser.

• The riser control valve and/or post indicator valve is shut down, and cannot be opened or located.

• There is a leak in the piping system at any point below grade allowing the water to drain off. (In this case, it may be necessary to shut down the riser control valve or the Post Indicator Valve).

• Foreign matter (cans, bottles, balls) has created obstructions in the siamese inlets.

• Anytime the siamese is being supplied and an engine officer or the Incident Commander communicates there is not enough water pressure. The ECC supplying the siamese shall communicate to the IC the flow meter reading.
6.27.3 Indications that no water or insufficient water is being supplied are:

- Flow meter registering no flow or low flow.
- Insufficient nozzle pressure once all kinks are removed from both the supply line and the handline.
- Heating of water in the apparatus pumps indicating water is not passing through the pump into the hoseline.
- No change in pump pressure when discharge gate is closed. If water was flowing, the pressure should rise on the gauge.

6.27.4 Hoseline operations from standpipes shall be guided as follows:

- Lightweight standpipe hose with 2” lead length and 1” MST shall be used.
- If lightweight hose is unavailable, 2½” diameter hose with controlling nozzle and 1 1/8” Main Stream Tip (MST) shall be used.

6.27.5 Standpipe kit carried by the engine company should include:

- 2½" controlling nozzle, with 1¼" main stream tip and ½" outer stream tip, and 1 ½” x 2 ½” increaser.
- Hand control wheel(s) for outlet valve.
- 2½" x 2½" in-line pressure gauge.
- Pipe wrench (minimum 18" in length).
- Spanner wrenches.
- Door chocks.
- Special adapters as required. For example, some buildings may contain floor outlet valves with non New York City threads. Adapters for connecting FDNY 2½" hose to National Standard Thread or National Pipe Thread may be required.

6.27.6 Sprinkler siamese should be supplied when sprinklers are located in the fire area or an adjacent area. Buildings with sprinkler systems should be entered on CIDS.
6.28  BUILDING FEATURES

6.28.1 Duplex and Triplex Apartments

A. Simply stated, duplex apartments are those apartments with living spaces on two distinct floor levels of a building, with an internal private stairway inside the apartment. Triplex apartments are those with living spaces on three levels, interconnected internally by stairs. This does not mean that there must be two or three stories in height as some are built on staggered floor levels on the style of a split-level house. The window arrangement from floor to floor may be different, which would indicate duplex or triplex apartments. This information must be entered in the CIDS program.

B. The varieties of design in duplex and triplex apartments make it very difficult to formulate a standard operating procedure for all types. Inspections by units on BISP or special drills are the best way to be prepared for fire and emergency operations in these types of apartments.

C. Most of these apartments have only one entrance from a public hall or open air walkway, and may have an interconnecting balcony to a similar apartment. Others may have two means of egress.

D. There are several floor configurations that may be found.

- The simplest type of duplex apartment is one that has all doors on the public hall entering apartments with identical floor layouts. Inside the apartment, a private stair leads up to bedroom areas. Therefore, if fire conditions are so severe that entry is impossible, consideration can be given to breaching walls from the adjoining apartment, if it can be determined which fire apartment room this breaching will lead. The room designs of apartments are that two apartments that adjoin may share the same utility chase ways. Two adjoining apartments may be a mirror image of each other. You will be able to determine the room layout in reverse. In that respect, the kitchen areas of two adjoining apartments will be on the other side of the wall of each other. Bedroom areas will be on the other side of an adjoining apartment wall. A size-up of the adjoining apartments on each side of the fire apartment will help determine which apartment to breach if the fire is in a room along the adjoining wall.

- A second type of duplex apartment has doors leading from the public hall into the main level and the second level is down. This presents the same problems as a cellar fire, with the added problem of bedrooms on this lower level with possible trapped occupants.
A third design type, while not strictly duplex or triplex apartments, but with similar problems for firefighters, is one where apartment entrance doors are in groups of threes in a public hall and there is only one public hall every three floors. This is called the “sandwich” type apartment arrangement. When the apartment doors are in groups of three, you will find one apartment entrance door opens to an interior stair leading down one flight to an apartment on the floor below. The next apartment door on the public hall leads directly into the apartment on that same level. The third door opens to an interior stairway leading up one flight to an apartment on the floor level above. The rooms in each apartment are on only one level, but as can be seen, if the fire is in the lower level apartment, the firefighting techniques will have to be the same as for cellar fires.

E. Engine operations will be the same as outlined for apartments in fireproof buildings except that when a 2nd line is needed:

- The 3rd and 4th engines have to be readily available to stretch through an adjoining apartment and into the fire apartment by way of a breached wall.
- This line may require more than three lengths since it may have to use a standpipe outlet two or more floors away, or possibly from a different stairway or standpipe riser.
- It will usually require extra firefighters for a quick stretch.
- The hoseline should still be brought into the attack stairway from below and advanced up to the fire floor.
- Positioning the HRN may be difficult since the window below the fire window may only be accessible from the fire floor public hallway. Wall breaching may be necessary to access the window from which the HRN will operate.
- Water must be applied to the room where the main body of fire is located to be most effective. Wall breaching to apply water into the fire room from an adjoining apartment will be difficult since the adjoining room/apartment most likely will have an entrance door on a floor other than the fire floor.

F. Ladder operations: The ladder company first to arrive operates as in a fireproof building. When it becomes known that the fire is in a duplex or triplex apartment and conventional firefighting techniques are not working, consideration must be given to gaining access to the fire area by other approaches.
• Many of the newer apartments have outside balconies that serve two apartments. Entry into the apartment adjacent to the fire apartment will provide an alternate means of entry to the fire apartment via this balcony. On lower floors a firefighter may reach the balcony by way of the aerial ladder.

G. Rescue operations may have to be performed by breaching walls and following the charged hoseline in so as to reach trapped occupants who are in the bedrooms with the doors closed.

H. Many of the newer buildings have double ⅝" sheet rock walls between apartments mounted on metal studs. Breaking directly through them is a fast way of entry into the fire apartment.

I. Fire, smoke, and high levels of CO may infiltrate areas of newer type buildings due to inadequate sealing of floor and ceiling openings around pipe, electrical and duct work. This is particularly important in kitchens and bathrooms.

J. Horizontal ventilation or deployment of a WCD from the apartment above may be difficult to impossible, since this may place the firefighter two floors above his/her objective. Many of the newer buildings are designed with large plate glass windows that are extremely difficult to break.

K. Doors on some floors have no letter or number designations on them, indicating that they are a second exit from an apartment. It is extremely difficult to tell which apartment they serve.

L. Local planning and drills on the type of duplex or triplex apartments found in a unit’s response area will help to ensure an effective operation.

6.28.2 Balconies and Terraces

A. Many privately owned HRFPMDs and newer city housing buildings are built with balconies and terraces providing us additional access to the apartments.

B. The balcony or terrace may serve only one apartment or be connected to two apartments with a partition between them. Access can be provided to both sides of the balcony by way of adjoining apartment or ladder. Members can breach or break through the partition to get to the outside door of the fire apartment. These doors generally have glass in them, either as a full panel or smaller panels, which can be broken if necessary, and opened from the inside. Always try the handle, as they may not be locked.

C. Members shall request permission from the ladder officer operating within the fire apartment prior to ventilation or entry. Members operating on balconies must be aware that the fire may vent through the balcony door by itself or it may be pushed there by the advancing hoseline.
D. The deployment of a HRN and/or a WCD may prove difficult or not be possible if the fire window faces onto a balcony or terrace.

- The balcony floor outside the fire apartment may block the HRN stream deployed from the window directly below. Directing the HRN stream from the adjoining window from the floor below may prove effective. If the apartment below the fire has a balcony, the HRN could be operating from the balcony railing, deflecting the stream off of the underside of the balcony directly above the fire apartment. This may provide limited success.

- Deployment of the WCD will not be possible from a floor above if that apartment itself has a balcony and the fire window is below this balcony, preventing the WCD from deploying against the building’s exterior wall.

6.28.3 Access and Addresses to Building Complexes

A. Maps showing building locations, streets, cul-de-sacs, access driveways, and building configurations are available from city housing and privately owned complexes, either at maintenance or renting agents offices.

B. These maps are small and can easily be carried on the apparatus. The information they supply is invaluable when the only information you have while responding is a street address. Some of the items to be drawn in or noted on the maps are:

- Hydrant locations, inside and outside of the complex.

- Size and height of buildings. Note any irregularity in height due to grade, e.g., six stories in front, nine stories in rear. Such buildings have been allowed to be built without a standpipe, necessitating long hand stretches.

- Chained or vehicle deterrent posts to access driveways must be opened to allow entry of apparatus.

- Those buildings an aerial or tower ladder can be positioned for operations and access to roofs, if applicable.

- Cellar entrances.

- Identify those buildings with compactors or incinerators.

- Day Care Centers.

- Maintenance shops, boilers, etc.
- Siamese locations to standpipe and sprinkler systems
- Locations of post indicator valves, when present.
- Ground floor exterior exit doors from the building’s interior stairways can allow for PPV fan placement, eliminating the fan noise problem inside the lobby. This also provides the ability to use exhaust hose extensions with the fan, to reduce/eliminate CO from the fan motor’s exhaust from being drawn into the stairway.

6.29 STORE FIRES

- Large stores may be found on the first floor extending beneath several apartments on the second floor. These apartments should be checked and monitored for life hazard and fire extension. Venting of this ground floor may be difficult. Consider the use of PPV fans for smoke control/removal.
- Day Care Centers, Clinics and offices may also be found.
- In older buildings, fire proof, self-closing doors are connected to the public halls from within these commercial occupancies. Ladder companies should check for them and call for a hoseline to protect the public hallway when necessary.

6.30 CELLAR FIRES

- Cellars contain compactor rooms, storage areas, meeting rooms, sprinkler protected motor vehicle garages, laundry rooms and utility meter rooms. These areas may also contain HVAC equipment with its associated duct work. The entire run of ducts should be checked to their termination points. The duct work venting dryers from laundry rooms should be checked to their termination point as well.

- Access to below grade areas may be via the interior, enclosed, fireproof stairways or outside ramps and driveways.

- Motor vehicle fires in these cellars can create an extremely heavy smoke condition, which can delay locating the vehicle, even though the sprinkler system may be discharging water. A search line should be used in these situations and a limited number of personnel should be used. The noise from the discharging sprinkler heads and the use of thermal imaging cameras will help locate the fire. PPV fans should be positioned to control smoke infiltration into other building areas, in addition to relieving the smoke condition in the garage.

- As stated previously in this document, consider a hand stretch into below grade areas. When the fire is controlled by the sprinkler system and connecting to a standpipe outlet would not expose our members to an IDLH, an Engine officer can, with sound judgment, use the standpipe and notify the IC.
7. **LOW RISE FIREPROOF MULTIPLE DWELLINGS (Less than 75’)**

7.1 Low-rise fireproof multiple dwellings (LRFPMDs) are generally older buildings and may be found in proximity to HRFPMD. Since their construction is fireproof, apartment fires will present fire problems similar to those in taller fireproof buildings.

*Note:* If units encounter wind impacted fire conditions, follow procedures outlined in Addendum 3, Wind Impacted Fires.

7.2 LRFPMDs have the following characteristics:

- Will vary in height, generally from three to seven stories.
- Can be isolated buildings or attached buildings.
- May be built as one building with two separate sections, separated by fire doors on each floor.
- May contain one single stairway or two remote stairways. These stairways may be open or enclosed.
- May have elevators. Stairs shall be used when the fire is on the seventh floor or below. The first arriving ladder company shall recall the elevators, whether or not they will be used. The second to arrive ladder company shall ensure that all elevators are recalled and searched. Regardless of the fire floor, the IC must ensure that all elevators are recalled, searched and controlled early in the operation, preventing civilians from placing themselves in danger by entering the elevator cars during the incident.
- May have compactors.
- Usually not equipped with standpipe systems, thus requiring a hand stretched hoseline, supplied by a pumper.
- May have a stairway window on each floor from which a rope can be lowered down to pull the hoseline up the outside of the building. The only obstruction to this operation is the existence of a small roof ledge over the building entrance door.
- Apparatus access is often negated by stanchions, fencing or other conditions found in the vicinity of the building(s).

7.3 Apartment fires in these buildings can cause the hallways and stairways to become heavily contaminated with smoke and heat once operations begin or if the apartment door was left open. The possibility of auto exposure exists and must be immediately addressed by the IC.
7.4 Because of the lower building height of these fireproof buildings and the heavy smoke conditions that usually occur in the attack stairway after the attack has begun, emphasis will generally be placed on venting the attack stair bulkhead after approval of the IC, early in the operation. This is done to relieve conditions in the attack stairway and/or public hallways. When ordered, the venting of the attack stairway in LRFPMDs will be accomplished by the 1st and 2nd arriving Roof firefighter positions.

Note: While roof ventilation is emphasized in LRFPMD, permission MUST still be granted by the IC before providing vertical ventilation via the attack stair bulkhead. Roof firefighters must wait until permission has been granted by the IC before opening the attack stair bulkhead. Particularly on windy days, the opening of the attack stairway bulkhead should be delayed until a proper size-up can be made.

This procedure differs from the tactics in HRFPMDs. In HRFPMDs, the Roof firefighters proceed to the apartment directly above the fire apartment. The need for immediate roof ventilation in HRFPMDs is not as significant as it is in LRFPMDs due to the existence of enclosed stairways.

7.5 TYPES OF LRFPMD BUILDINGS FOUND AND ROOF ACCESS

7.5.1 Attached Buildings with one stairway.

- Buildings that are attached to a similar building, but separated by a fireproof wall, usually contain one stairway from the first floor to the roof. Often this single stairway opens onto small public hallways. Sometimes the single stairway is enclosed on each floor and may have longer hallways. Where these attached structures are found, roof access is generally via the interior stairway of the adjoining building. In buildings with a single interior stair, all attack and evacuation tactics will proceed from the one stairway, as there will not be separate, designated attack and evacuation stairways.

7.5.2 Individual Buildings with two separate sections and fire doors

- Buildings built with two separate sections, each containing a single open stairway. These sections are separated by fire doors. Roof access is generally via the interior stairway of the adjoining section, provided that the fire doors are in the closed position.
7.5.3 Isolated Buildings with two stairways

- Isolated structures with no adjoining building usually contain two enclosed stairways. The enclosed stairs are found remote from each other and roof access is generally via the enclosed evacuation stairway.

7.5.4 Isolated buildings with one stairway

- Isolated buildings with only one stairway creates a special situation when the roof cannot be accessed via an aerial or tower ladder. This situation is rare and will be addressed in the Roof Firefighter section. In buildings with a single interior stair, all attack and evacuation tactics will proceed from the one stairway, as there will not be separate designated attack and evacuation stairways.

7.5.5 Some LRFPMDs are built with very long public hallways. These buildings should be identified in the CIDS program, as they create additional operational considerations. In these buildings, the search rope should be brought as part of the tool assignment.

7.5.6 The guidelines for LRFPMDs cannot address every possible situation encountered. There exist variations to the buildings described in this section, particularly in newer, LRFPMD construction. It may be necessary to address these guideline variations on the local level with the Division Commanders approval.

7.6 ENGINE OPERATIONS:

7.6.1 Fires in LRFPMDs may be extinguished using 1¾” or 2½” hose, hand stretched from a pumper depending on the hallway length.

7.6.2 If the hallways in these structures are small, that is, every apartment door is within 50’ of every stairway on that floor, then 1¾” hose can be stretched from the pumper when compatible with fire conditions.

7.6.3 However, if a LRFPMD has long hallways, that is, any apartment door is more than 50’ from any stairway on that floor, then the additional GPM available from 2½” hose may be needed and 2½” hose should be hand stretched from the pumper.

7.6.4 Division Commanders shall ensure that non-standpipe buildings where 1¼” hose may be used are entered into CIDS.
7.7 1ST LADDER COMPANY TO ARRIVE

This unit is responsible for the search and ventilation of the fire apartment. The officer of this ladder company will initiate and control ventilation of the fire apartment. No other company officer or firefighter should attempt any horizontal ventilation of this apartment without the approval of the 1st ladder officer. This officer may decide that the fire may best be extinguished without any horizontal exterior ventilation.

7.7.1 Officer and Forcible Entry Team

Tools: Extinguisher, hook, axe or maul, Halligan, Hydra-Ram, SCBAs, carbon monoxide meter, TIC.

Duties:

A. Proceed to the fire floor and notify the IC if the stairs are open or enclosed. When there are two stairways, notify the IC and the engine officer of the attack stairway. This transmission is also important to the roof firefighter since it will determine his/her route to the roof, e.g., evacuation stairs. Also, notify the IC and engine officer of the heat and smoke conditions found in the stairs or public hallways.

- In buildings with two stairways, once the attack stair has been selected, all operations are to proceed from this stairway in order to ensure the evacuation stairway is maintained clear of smoke. The only exception to this procedure is when the Roof Firefighters use the evacuation stairway to reach the roof.

B. Locate and force entry into the fire apartment if the door has not been left open. If conditions allow, enter the apartment to search. Search team must be prepared to exit quickly and control the door under all circumstances. Do not chock the door open until a charged hoseline is moving into the apartment.

- Control of the fire apartment door can be accomplished by positioning one member inside the door with door closed, but not locked. The door can be ajar with the dead bolt extended, preventing door from completely closing.

7.7.2 Outside Vent Firefighter and Chauffeur Team


Duties:

A. Conduct an outside survey. It is quicker to split and have each member survey the building from opposite directions.
B. If the fire floor can be laddered, then the OV/Chauffeur team will continue to perform VEIS from the exterior. Often the 4th floor can be reached with a 35’ portable ladder.

C. This team must keep in mind that any horizontal ventilation of the fire apartment requires the approval of the 1st Ladder Company Officer.

D. If no outside operations are possible, then the OV/Chauffeur team shall proceed to the fire floor to team up with their officer and assist in the search of the fire floor hallway and fire apartment. They should communicate with their officer for specific tactical direction.

E. When the 2nd ladder company is delayed and not on scene, the Officer may order this team to the apartment directly above the fire to provide:
   • Horizontal ventilation from above if needed in the fire apartment.
   • Assistance from above in determining the fire apartment layout.

Note: At isolated buildings where there is only one interior stair and no adjoining building, the Chauffeur will have to provide access to the roof for the Roof Firefighter. In this situation, the OV may initiate the appropriate OV/Chauffeur team tactics until joined by the Chauffeur.

7.7.3 Roof Firefighter

Tools: Halligan hook, Halligan, LSR and Life Belt.

Duties:

A. Proceed to the roof to:
   • Check the perimeter of the building for:
     1. Fire and conditions;
     2. Trapped occupants at windows;
     3. Evidence of anyone who might have jumped from a window.
     4. Provide exterior ventilation when ordered.
   • Notify the IC of the possible need for a LSR rescue when necessary.
- Check the bulkhead stair for occupants and close bulkhead door when done.

- Provide ventilation of the attack stairway bulkhead when ordered by the IC.

  **Note:** While roof ventilation is emphasized in LRFPMDs, it must not occur until ordered by the IC.

B. Roof Access will be obtained using the following priority order:

1. Stairway in an attached adjoining building. In an individual building with two separate sections protected by fire doors, the use of a protected adjoining section is the priority. In this situation, these doors must be checked on the fire floor and the floors above to ensure that they are in the closed position.

2. An enclosed evacuation stairway.

3. Aerial Ladder or Tower Ladder.

  **Note:** Special Situation:

There are a few isolated buildings that exist where there is only one open interior stairway to the roof, and the roof cannot be accessed via aerial or tower ladder. In this situation, a decision must be made by the company officer as to whether or not roof ventilation is required. If the stairway is not an IDLH and safety permits, the Roof Firefighter may be ordered to take the interior stair to the roof, provided that the fire apartment door is controlled and maintained closed by the ladder company officer. If the stairway is an IDLH, then the Roof Firefighter must be teamed up with another member before ascending to the roof. In either case, the fire apartment door must be maintained closed until the Roof Firefighter has communicated to their Officer that they are on the roof in a safe area, and that the bulkhead door is closed. If ordered by the IC, provide ventilation of the stairway bulkhead. The Roof Firefighter will remain on the roof until the fire is under control and the interior stairway is safe to descend.
7.8 2ND LADDER COMPANY TO ARRIVE

7.8.1 Officer and Forcible Entry Team

Tools: Extinguisher, hook, axe or maul, Halligan, Hydra-Ram, SCBAs, carbon monoxide meter, TIC, KO curtain.

Duties:

A. This unit is responsible for all floors and stairs above the fire floor.

B. They should proceed to the floor above to locate and force entry into the apartment directly above the fire.

C. They should be prepared to assist the fire floor from this location if:

- Ventilation is needed for the fire apartment. This must be coordinated with the first Ladder Company Officer;
- Assistance is required from above in determining the fire apartment layout;
- A Life Saving Rope Rescue is required from this location;
- KO curtain deployment is needed.

D. Top floor fire:

- Coordinate vent, entry and search of fire floor with first Ladder Company.
- The 2nd ladder Roof FF will bring the KO curtain to the roof.

7.8.2 Outside Vent Firefighter and Chauffeur Team


Duties:

A. Conduct an outside survey. It is quicker to split and have each member survey the building in opposite directions. Assist the 1st Ladder OV/Chauffeur team as needed with operations from the exterior.

B. Often the 4th floor can be reached with a 35’ portable ladder. If the fire floor can be laddered, assist the 1st ladder in outside operations, performing VEIS from the exterior.
C. The OV/Chauffeur team must keep in mind that any ventilation of the fire apartment requires the approval of the 1st ladder company officer.

D. If no outside operations are possible, then the OV/Chauffeur Team shall proceed to the floors above the fire to assist in the search. They should communicate with their Officer for specific tactical direction.

E. If a Life Saving Rope Rescue operation is required from the floor above, this team will be in a position to assist in this operation.

7.8.3 Roof Firefighter

Tools: Halligan hook, Halligan, LSR and Life Belt.

Duties:

A. Proceed to the roof to assist the 1st Roof firefighter with ventilation of the attack stairway bulkhead, check of the bulkhead and perimeter, exterior ventilation, LSR operations and KO Curtain deployment for top floor fires.

B. Roof Access will be obtained using the following priority order:

1. Stairway in an attached adjoining building. In an individual building with two separate sections protected by fire doors, the use of a protected adjoining section is the priority. In this situation, these doors must be checked on the fire floor and the floors above to ensure that they are in the closed position.

2. An enclosed evacuation stairway.

3. Aerial Ladder or Tower Ladder.

C. Top floor fire: Bring the KO Curtain in lieu of the LSR and Life Belt.

7.9 RESCUE AND SQUAD COMPANIES

Duties:

A. Report to the IC upon arrival.

B. If a WCD has been deployed, ascertain from the IC if a second WCD should be deployed over the first. This could be necessary when the first WCD appears to be nearing failure due to fire impingement.
C. Rescue and Squad Companies can be assigned to perform or reinforce various assignments as needed and ordered. Some examples include:

- Assist when life saving rope rescue is in progress.
- Assist in primary searches.
- Perform accounting of all elevators as directed by the IC.
- Perform secondary searches.
- Rescue operations of any firefighters or civilians trapped in elevators.

7.10 CIDS INFORMATION

CIDS should be utilized for LRFPMDs to indicate:

- Roof access.
- The number and type of stairways or sections. Indicate if stairways are open or enclosed and if sections are protected by fire doors.
- Apparatus access.
- Hydrant locations as needed.
- Search rope required (when necessary)
- 1¾” hose, when approved for use in selected buildings

7.11 LIFE SAVING ROPE RESCUE REQUIRED

The following shall be considered in priority order when the 1st arriving Ladder Company initiates a LSR rescue operation:

1. Operate from the roof, if practical. The 1st Roof Firefighter must make a determination whether the LSR rescue can be performed from the roof level. Consider the availability of tie-off points and their location in relation to the window location. Prior knowledge of building plus CIDS information should be utilized in making this determination.

**Note:** Operating from the roof allows for the LSR rescue operation to be initiated in conjunction with early ventilation of the roof bulkhead, if ordered by the IC. It is possible that roof bulkhead ventilation may assist units in fire floor operations and the recovery of the victim from the interior.
2. If the 1st Roof Firefighter determines a LSR operation is not practical from the roof level, then the following options are available:

- If the 2nd Roof Firefighter has not already reached the roof, the 1st Roof Firefighter should immediately direct that member to the apartment directly above the fire apartment. The 2nd Roof Firefighter shall bring their assigned tools including the LSR to the apartment directly above the fire apartment. In buildings with two enclosed stairs, the 2nd Roof Firefighter may descend the evacuation stairway to the apartment directly above the fire apartment.

- In buildings with an open interior stairway, the IC may direct members or another unit to bring an available LSR (Squad, Rescue, or engine company), to the apartment directly above the fire apartment.

- The IC must be aware of the need to provide support for all LSR rescue operations. Communication from the 1st Roof Firefighter is critical in these situations.

8. FIRE RESISTIVE HIGH RISE RESIDENTIAL BUILDINGS – AKA: CLASS 2 HIGH RISE RESIDENTIAL BUILDINGS

8.1 INTRODUCTION

(The term “Fire Resistive High Rise Residential buildings” and “Class 2 High Rise Residential buildings” will be used interchangeably.)

Class 2 High Rise Residential Buildings are a distinct group of buildings typically built between the late 1800’s to the early 1930’s. They have features and layouts not common in newer high rise residential buildings.

They were built under various codes and laws including the 1899 NYC Building Code, the 1901 Tenement House Act, the New York State Multiple Dwelling Law, and the 1916 Zoning Law which dictated their height, construction, and egress requirements.

Class 2 High Rise Residential buildings can be found in several areas of the city with the greatest concentration in mid to upper Manhattan.

These buildings can present unique challenges during fire operations. Due to their height, fires in these residential buildings require the transmission of the 10-77 signal. Building characteristics and features may result in rapid smoke and heat movement with occupants trapped on multiple floors above the fire area.

Fires in Class 2 High Rise Residential buildings may require greater resources than usually needed for fires in newer, Class 1 high rise residential buildings.
8.2 DESIGN CHARACTERISTICS

The design features stated in this section are not exclusive to these buildings and may be found on: commercial buildings of the same height, public buildings, and even smaller non-fireproof buildings (including NFP buildings on a grade) built during this time period. These are not the buildings described in this section. The purpose of describing these architectural features is to assist members in differentiating between these residential buildings and later built Class 1 high rise residential buildings.

8.3 GENERAL DESCRIPTION

- The majority are 8-18 stories. A small percentage are taller and have been discovered up to 32 floors with a single stair.
- Noncombustible structural elements such as concrete and steel, with some interior wood framing and flooring. See reference photos 1 and 3.
- Building sizes vary from 45’ x 45’ to more than 200’ x 250’.
- Horizontal Bands or Belt Courses are an architectural masonry design feature used during the time period Fire Resistive High Rise Residential buildings were constructed (see reference photos 4, 5 & 6). These horizontal bands, while not always present, will typically indicate one of these buildings. However, this design feature may also be present on later built Class 1 high rise residential buildings. Members should use this design feature along with CIDS information to determine the type of building they are responding to.

8.3.1 Location of Horizontal Bands or Belt Courses:

1. Horizontal Bands or Belt Courses will usually be present above the windows of the 1st, 2nd or 3rd floors. This feature varies from building to building and it may be located above only one of the floors, all or any combination.

2. Horizontal Bands or Belt Courses will usually also be present below the windows of any of the top 3 full floors. Again this feature varies from building to building and may be located below only one of the floors, all or any combination. (The design features in 1 and 2 are usually at these locations, but these bands may be on other floors as well. Photo 6 shows an additional band above the 5th floor.)

3. The lower one, two or three floors may have a different color or type of brick or be constructed of limestone block (See reference photos 4 and 6).

Note: As stated in 3 above: the lower one, two, or three floors may be of a different design or construction than the rest of the building. While this is true, the presence of the horizontal bands or belt courses is the single best architectural design feature to identify these buildings. This design feature will be present on a building wall that faces a street. A non-street facing wall will typically use only plain brick.
8.3.2 Fire and Smoke Spread

- While typically not expected in high rise fireproof residential buildings, interior wood framing and steel channel rails (possibly framed out with wood) may be present and allow fire extension and smoke travel.

- Poorly fire stopped openings and renovations may increase these possibilities.

- Dumbwaiter shafts and compactor chutes may also be present.

(See reference photos 1 and 2.)

8.3.3 Occupancies/Layouts

Class 2 high rise residential buildings contain various occupancies. The majority are class ‘A’ multiple dwellings (aka Fireproof Tenement Houses). Other occupancies include hotels, student housing (Dormitories) and single room occupancies (SRO’s).

Apartment layouts may vary throughout a building. Some apartments may be duplex or triplex, and/or incorporate two or more apartments combined on the same floor. This can result in large apartments. Some may be several thousand square feet and have more than 30 rooms. In other instances, large apartments have been subdivided into two or more smaller apartments. Typically the apartment service entrance will be in the vicinity of the kitchen in the larger, more exclusive type buildings. The apartment service entrance may also lead to a hallway or vestibule that leads to the kitchen as well as a smaller room or rooms with a private bathroom or shared bathroom for these rooms. These rooms were originally designated as living quarters for the full time staff.

8.4 CRITICAL INFORMATION DISPATCH SYSTEM (CIDS)

CIDS may provide valuable information which will contribute to operational efficiency.

A standard CIDS worksheet (Photo 15) has been created for these buildings. CIDS should provide information such as stair descriptions, standpipe locations and best roof access. If applicable and space permits, the description will also include the various types of secondary means of egress.

Officers should review CIDS information while responding and share pertinent information with members.
8.5 FEATURES

While each building is unique, there are several features that can affect firefighting operations. They are:

- **Wings or Sections**: Separate areas within a building.
- **Stairwells**: Multiple types may be present. Some buildings have a single stair. Others may contain open stairs or a combination of open and enclosed stairs.
- **Fire escapes**: May or may not be present, sometimes with unusual layouts.
- **Standpipes**: Most have older installations, some in unusual locations.
- **Elevators**: Various layouts. Some may not provide access to stairs or standpipes.

8.5.1 Wings or Sections

Occasionally, the building will be divided into wings or sections above the first floor with each section having their own standpipe, stair(s) and elevator(s). In most of these buildings, the only location where members may traverse from one section to another is the lobby, cellar and/or roof. Sometimes these buildings have a “shared fire stair” which allows access to different sections above the first floor. The definition of a shared fire stair can be found in section 8.5.3.

8.5.2 Stairwells

Stair layouts can vary greatly and include multiple variations. Some have multiple stairwells and stairwell types while others have one single open stair. Some buildings may have a well hole for the entire height of the stairwell.

Below are descriptions of stair types that may be encountered in these buildings.

**Note**: When open stairs are present (or if a building has a single stair) additional concerns will be present, such as the following:

- When no exterior roof access exists (fire escape, aerial, adjoining building, etc.).
- When members must proceed above the fire to perform searches or rescues.
- When civilians are evacuating via these stair(s).

**Note**: The stair definitions listed in section 8.5.3 are for Class 2 high rise residential buildings only.
8.5.3 Types of Stairways:

A. Fire Stair:

General Definition: Any stair denoted as a fire stair acts essentially as a fire escape placed on the inside of the building. They will typically be in a separate fire-rated enclosure constructed of terracotta, cement block or some other non-combustible material. Usually used by the occupants as a secondary means of egress (see photo 7A).

The three types of fire stairs described in this section are all constructed in the same manner.

The difference in the three types of fire stairs are determined by how they are accessed and if there is a door separating them from the apartment door. Fire stairs have common characteristics that include:

- A steep, narrow stairwell (see photo 7B).
- Usually terminate in a bulkhead at the roof level. If a penthouse is present, the stair will usually terminate at the roof terrace level of the penthouse apartment(s).
- Entry to these stairs may be in the lobby or street or they may bypass both and start in the cellar. Other than in the lobby, cellar or roof many times these stairs are accessed through an apartment. Occasionally these stairs will be accessed off the public hall.

B. Enclosed Stairs:

General Definition - Any stair separated from an apartment door by a fire-rated door. Only doors leading to the public hall or vestibule are present in these stairwells.

The two types of enclosed stairs are:

1. A stairway of standard width, rise and run; separated from all apartments via a fire-rated door leading to a public hallway or vestibule. It may or may not contain a standpipe. This would be the typical type of enclosed stairway found in the newer Class 1 high rise residential buildings.

2. Enclosed Fire Stair – A fire stair separated from all apartments via a fire-rated door leading to a hallway or vestibule. It usually does not contain a standpipe. It may be located off the main public hall or accessed through an apartment.

C.
Open Stairs:

General Definition: Any stairway where there is no fire-rated door between the apartment door and the stair.

The five most common types of open stairs are:

1. Service Stair – A stairway of standard width, rise and run. It usually contains a standpipe, service elevator and door(s) to the apartment(s). These door(s) are typically NOT the main entrance to the apartment(s) (See reference photos 12A and 12B).

2. Primary Open Stair(s) - A stairway used as the “primary” stairway by the building occupants. It usually leads to the front entrance doors of the apartments. These stairways resemble the typical open stairways found in a tenement. They usually end in a bulkhead on the roof but occasionally will terminate at the top floor (See reference photos 13 and 14).

3. Open Fire Stair – Open fire stairs generally have 2 doors serving separate apartments in a building or wing of a building; some contain only one door serving a single apartment. Open fire stairs may be found anywhere in the apartment and typically do not have a standpipe. 

**Note:** The open fire stair is the most common fire stair encountered.

4. Shared Fire Stair – A shared fire stair has all the same characteristics as a fire stair except this stair is shared by apartments in two separate wings.

   Example: In wing buildings, crossover between wings is usually possible in the lobby, cellar, and/or roof. A shared fire stair provides the secondary means of egress for apartments in different wings, creating an additional crossover and potential for fire/smoke spread.

5. A stair separated from the public hall or vestibule that also contains one or more apartment doors in the stairwell. These doors are usually the secondary means of egress from apartments or rooms but as a rare exception may be the only door to that apartment/room. As with service stairs, these stairs are of standard width, rise and run. These stairs may also contain a standpipe.

Stairway notes:

- If an apartment has more than one door, one of these doors may be nailed shut, blocked and/or covered.
Stairways may not be labeled as they are typically labeled in later built high rise buildings, e.g., in a two wing building, the A/B wing may have a stair labeled the A/B stair while the E/F/G wing may have a stair labeled the E/F/G stair.

- Doors from fire and service stairs may not be marked causing a delay in locating the correct apartment.

8.5.4 Fire Escapes

Class 2 high rise residential buildings may have fire escapes. Some may have fire escapes serving one line, one area or one apartment. This will depend on the date they were built or renovated and the apartment layout. These fire escapes may be 18 floors or more in height. When using fire escapes exercise extreme caution because these buildings may be over one hundred years old and their condition may have deteriorated.

Due to the age and height of fire escapes members must use balanced judgement and notify their company officer prior to using the fire escape. Some factors to consider prior to using the fire escape are:

- Condition of the fire escape.
- Height of the fire floor.
- Presence of a known life hazard.
- Weather conditions.
- Ability to access the roof via an alternate route.
- Fire conditions.

See reference photos 8 and 9.

8.5.5 Standpipes

Standpipes in these buildings are some of the earliest systems installed in residential buildings. Some features that may be found include:

- Outlets may be found in a variety of locations, including public halls and stair landings. See reference photo 10.

- Outlets may be at various heights, sometimes over 7’ high. See reference photo 11.

- Outlets may be situated in a way that makes it difficult to remove pressure reducing devices and/or house lines.

- There may not be section valves and/or riser control valves present.

In addition, apartment size, hall layout and outlet locations may result in stretches of 4 lengths or more.
8.5.6 Elevators

Typically operate as per section 6.4.

Additional Considerations:

- Elevator layout and features may also vary. Passenger elevators may be small and/or open into isolated vestibules. Some may open directly into apartments while others may provide access to a public hallway.

- Service elevators often provide access to standpipe and stair areas.

- Service elevators may not have Fire Service installed. They may require the use of manual mode for firefighting operations. Units with these buildings in their area should review manual elevator operations.

8.6 GENERAL OPERATIONS

Typically, operations will be as per sections 6.1-6.6.

8.6.1 Additional Considerations

These occupancies provide unique challenges for fire operations. Fire escapes may be present for some apartments and not others, or only one open stair may be found in these buildings. The presence of open stairs creates the following implications:

- Rapid movement of heat and smoke throughout the floors above.

- Fire extension via main stair or remote open stairs.

- Occupants trapped above the fire when attempting to evacuate.

- Difficulty or delay with roof access and ventilation.

- Negative stack effect could impact standpipe operations on the floors below.

8.6.2 Building Personnel/Occupants

Building personnel may provide accurate information regarding stair and elevator locations, as well as best access points. They may have knowledge of occupants and apartment layouts.

Occupants may be unfamiliar with stairs or secondary egress. Often occupants rely solely on elevators for access and egress. Service or fire stairs may be sealed or blocked inside apartments.
There may be instances where members encounter occupants evacuating from upper floors. These occupants should be instructed to remain in their apartments with their doors closed, if conditions allow. In instances where removal is necessary (overcome, panic), members must communicate with the IC and the 1st ladder officer. Additional resources will be required and attack on the fire may need to be delayed.

8.6.3 Apartment Access

Since these apartments may have more than one entrance door, the 1st engine and 1st ladder company must communicate to ensure all members on the scene are aware of which entrance door operations are being conducted from. In the event it is determined that another entrance to the apartment may provide better access, this information must be communicated to the IC and the Fire Sector Supervisor (if the Fire Sector has been established) as well as all members operating on the fire floor and the floor above.

While some of these buildings have a public hall, some only have a small landing which can quickly become overcrowded. In these instances, the apartment below may need to be used to flake out the hoseline or stage units.

8.7 GENERAL ENGINE OPERATIONS

While some apartments have only one door accessible from the stair(s), others may have two. Choosing the correct entrance may provide a more rapid attack on the fire. In buildings with multiple stairs, the correct selection of an attack stair is paramount to successful operations in these buildings. Communication between the 1st Ladder and Engine officers as to proper standpipe location and best access will result in a quicker stretch and faster water on the fire.

If a building contains open and enclosed stair(s), consideration should be given to leaving the enclosed stair(s) for evacuation when possible. This may include connecting to a standpipe in an enclosed stair below the fire and then using the open stair as the attack stair.

Fires in these structures will be extinguished using a 2 ½” hose stretched from a standpipe outlet located on a floor below or a 2 ½” hose hand stretched from the apparatus.

Standpipes may be found in unusual locations, including half landings, in wall recesses and with outlets higher than normal (Photo 10 and 11).

Typically, handlines will be stretched from the standpipe system. Due to the age of the standpipe system and the location of the outlets, it may be necessary to hand stretch 2 ½” hose from the apparatus. A more serious problem may be if the house hose line cannot be removed from the PRD. Any difficulties must be communicated to engine and ladder officers. The IC and later arriving engines should be prepared to implement alternative types of stretches.
More than 3 lengths of hose may be required in these buildings. This should be identified in CIDS, if space permits.

In buildings without a public hall or a small landing, engine companies may need to gain access to the apartment on the floor below to flake out the hoseline.

Due to open stairs and the possibility of rapid spread of smoke, all officers should be cognizant of members going above the fire floor as well as occupants evacuating via the attack stair.

8.7.1 1st Engine to Arrive

Typically operate as per Section 6.7.

Additional Considerations:

- Due to the location of the standpipe outlets, hoselines may need to be stretched from the apparatus. This hose must be 2 ½”.

- The engine officer should keep in mind that the layout of the apartment/floor below might not reflect the fire apartment.

- Due to the size of some apartments, four or more lengths of hose may be required.

8.7.2 2nd Engine to Arrive

Typically operate as per Section 6.8.

8.7.3 3rd Engine to Arrive

Typically operate as per Section 6.9.

Additional Considerations:

Due to the size of these apartments (as indicated in section 8.3.3), the 3rd engine may need to assist with getting the first line into operation. If the 3rd engine is assisting with the first line, the officer must notify the IC and the 4th engine officer.

8.7.4 4th Engine to Arrive

Typically operate as per Section 6.10.

If the 3rd engine is assisting with the first line, the 4th engine should stretch a second line. This line may be used as per Section 6.9.4.
The 3rd and 4th arriving engines should be aware of:

- If a second apartment entrance is present and the 1st line may be endangered by fire venting from this door, the second line may need to be stretched to this location to protect the advance of the first line. This must be carefully coordinated by the Fire Sector Supervisor to avoid opposing lines.

- Potential issues with the standpipe/outlets and the possible need for a hand stretch.

8.7.5 5th Engine to Arrive

Typically operate as per Section 6.11.

Additional Considerations:

- Difficulty in placing the high-rise nozzle into small elevators.
- Long stair climbs (18 stories or more) if elevators are not being used.
- Difficulty in determining the correct access to the area below the fire area.
- Duplex or triplex apartment layouts.

8.7.6 CFR Engine

Typically operate as per Section 6.12.

8.8 GENERAL LADDER OPERATIONS

The various types of layouts and size of Class 2 High Rise Residential Buildings, coupled with the potential for rapid heat and smoke movement through various vertical shafts pose significant challenges for first arriving ladder companies.

A medium fire condition can place significant demands on initial units.

Occupants trapped above the fire may provide greater challenges than typically encountered, including the need to delay the initial attack on the fire.

Additionally, risk assessments may have to be made before attempting roof ventilation.

Some of these buildings contain elevators without fire service. In these instances, unused elevators should be called to the lobby and chocked open.
Some elevators open directly into apartments or serve isolated vestibules with no access to stairways. These elevators should be avoided if possible.

Ladder companies may encounter access issues such as:

- Stairs not located in the lobby (some stairs by-pass the lobby and terminate in the cellar).
- Stairs and/or standpipe not accessible from elevator. Members may need to go through an apartment to access stairs and/or standpipe.

In an isolated roof building, with open stairs, the first ladder officer will need to coordinate apartment entry with roof and floor above access (see note in Section 8.8.2).

Search of these buildings should consider:

- The possibility of isolated elevator vestibules or elevator doors in apartments. The possibility of open elevator hoistway doors should always be considered.
- Open interior stairs within an apartment leading to living areas on floors above or below (e.g., duplex, triplex apartments).
- The presence of open stairs that may allow smoke/fire spread.
- Fire extension via vertical shafts.
- The need for additional units on the fire floor, due to size of the building, public halls or apartments.
- Since some of these apartments are large, members should be aware that it may take additional time and/or lengths of hose to reach the fire area.

This information and requests for additional units should be immediately transmitted to the IC.

In buildings without a public hall or a small landing, ladder companies may need to gain entry to the apartment below so the hoseline can be flaked out.

Due to open stairs and the possibility of the rapid spread of smoke, all officers should be cognizant of all members going above the fire floor, as well as occupants evacuating via the attack stair.

8.8.1 1st Ladder to Arrive

Responsibilities as per section 6.14.1
8.8.2 1st Ladder Officer & Forcible Entry Team

Typically operate as per section 6.14.2.

Additional Considerations:

**Note:** Buildings where open interior stairs provide the only access to the roof are of particular concern. In these instances, the following guidelines apply.

The 1st Ladder officer must make a determination whether roof access for ventilation will be attempted. The officer should consider the following:

- Number of floors between the fire floor and roof.
- Fire conditions.
- Door control.
- Smoke condition in the public hall and stairs above the fire. If the fire apartment door was left open prior to our arrival, even after it is closed, there may be a build-up of smoke on the upper floors.
- Status of the first hoseline.
- Knowledge of occupants in halls and stairs above.
- Reports of occupants trapped in the fire apartment necessitating immediate entry for search.

If the officer believes roof access is feasible, the following MUST be done:

- Whether or not the stairway is an IDLH, two members must be assigned to vent the roof (1st roof and a member of FE team or 2nd roof)
- The fire apartment door must be controlled until members verify their arrival on the roof and the bulkhead door is closed or they have attained an area of refuge.
- If door control cannot be maintained, or any other condition exists that will impact the members assigned to roof ventilation, the officer shall immediately communicate this information to them.

8.8.3 1st Ladder Outside Vent Firefighter

Typically operate as per section 6.14.3.

Additional Considerations:

To effect removal of trapped occupants, fire escapes may also be available to access their location(s) and perform VEIS. In any instance where the outside vent operates on the exterior of the building, the first ladder officer must be informed. (see section 8.5.4 for additional information on fire escapes)
Interior operations:

The outside vent should anticipate elevators not being equipped with fire service. Service elevators may need to be operated in manual mode (see TB, Emergencies 1, Elevator Operations). If elevator operations are not required, they shall report to their officer for assignment which may include:

- Team up with the inside team to assist with the search of the fire apartment.
- Locate secondary entrances to fire apartment and/or additional stairways serving the fire apartment/fire floor. If these stairs are an IDLH, team up before searching them.

8.8.4 1st Ladder Roof Firefighter

Typically operate as per Low-Rise Multiple Dwellings Section 7.7.3A.

Tools: Halligan, Maul/Axe, Hydra-Ram.

Proceed to the roof:

Access to the roof in order of priority (check CIDS for roof access information):
1. Remote/unaffected Stair with Roof Access
2. Adjoining Building
3. Aerial Ladder (usually not a viable option)
4. Fire Escape
5. Open Stairs (see note in Section 8.8.2)

8.8.5 1st Ladder Chauffeur

Typically operate as per Low-Rise Multiple Dwelling Section 7.7.2 A to D.

Tools: Selects tools deemed necessary to complete their assignment.

Additional Considerations:

In addition to ladder operations to effect removal of trapped occupants, fire escapes may also be available to access their location(s) and perform VEIS. (see section 8.5.4 for additional information on fire escapes)

When outside operations are not feasible or required, the first LCC must be ready to address issues or areas not being managed by first and/or second ladder inside teams as directed by their officer, these duties may include:
- Team up with the inside team to assist with the search of the fire apartment.
Locate secondary entrance(s) to the fire apartment and/or additional stairways serving the fire apartment/fire floor. If these stairs are an IDLH, team up before searching them.

### 8.8.6 2nd Ladder to Arrive

Responsibilities:

- Ensure all elevators are recalled and searched.
- Ensure all evacuation stair doors (if any) are closed on the fire floor.
- Search of the fire floor or floor above as indicated below
- Coordinate deployment of the wind control device if ordered deployed by the IC.

While some apartments are small and can be handled by the 1st ladder company, other apartments are large and may require additional units to assist in the search. Therefore, the 2nd ladder shall communicate with the 1st ladder company upon arrival to determine if their assistance is required on the fire floor.

### 8.8.7 2nd Ladder Officer & Forcible Entry Team

Duties: The 2nd ladder will communicate with the 1st ladder company upon arrival. Unless needed to augment operations on the fire floor, the 2nd ladder company will proceed to and operate in the apartment above the fire. Access must be coordinated with the attack on the fire floor.

Tools: Extinguisher, hook, axe or maul, halligan, hydra-ram, SCBAs, carbon monoxide meter, TIC, KO curtain, and search rope.

The 2nd ladder officer must be aware that apartment layouts may vary. Several apartments may need to be accessed to search all areas above the fire area. From the apartment above the fire, notify the IC & 1st ladder officer of any:

- Trapped occupants in the fire apartment. Call for the LSR if needed (see section 8.8.9).
- Wind conditions that may affect the fire.
- Deploy the KO Curtain. For a top floor fire the 2nd arriving ladder officer will ensure the curtain is brought to the roof.
Notify the 1st ladder officer of:

- The fire location on the fire floor.
- The apartment layout.

In addition to search of apartment(s) above, the second ladder must consider and communicate:

- Status of evacuating occupants.
- Smoke and heat conditions moving up through the building.
- The presence, location and conditions in remote secondary stairs (fire stairs, service stairs, etc.).

8.8.8 2nd Ladder Outside Vent Firefighter

Typically operate as per section 6.15.3.

Additional Considerations:

In addition to ladder operations to effect removal of trapped occupants, fire escapes may also be available to access their location(s) and perform VEIS. (see section 8.5.4 for additional information on fire escapes)

Interior operations:

The outside vent should anticipate elevators not being equipped with fire service. Service elevators may need to be operated in manual mode. See TB Emergencies 1, Elevator Operations. If elevator operations are not required, they should report to their officer for assignment which may include:

- Assist with the search of the fire apartment.
- Assist with the search of the apartments on the floor above the fire.
- Assist with KO curtain deployment or LSR rescue if necessary.

8.8.9 2nd Ladder Roof Firefighter

Tools: Halligan Hook, Halligan, LSR and Life Belt.

Duties: If LSR rescue is not required, proceed to the roof to assist the 1st Roof firefighter with ventilation of the attack stairway bulkhead, and search of the bulkheads and the perimeter of the building.
Prior to proceeding to the roof bring the LSR to the floor above the fire. When the fire floor is within two floors of the roof, proceed to the roof with the LSR. If LSR rescue is required, assist in rescue.

Access to roof in order of priority (check CIDS for roof access information):

1. Remote/unaffected Stair with Roof Access
2. Adjoining Building
3. Aerial Ladder (usually not a viable option)
4. Fire Escape
5. Open Stairs (see note in Section 8.8.2)

8.8.10 2\textsuperscript{nd} Ladder Chauffeur

Typically operate as per Low-Rise Multiple Dwellings Section 7.8.2 A-C.

In addition to ladder operations to effect removal of trapped occupants, fire escapes may also be available to access their location(s) and perform VEIS. (see section 8.5.4 for additional information on fire escapes)

If no outside operations are required, the LCC should communicate with their officer to determine duties.

8.8.11 3\textsuperscript{rd} Ladder to Arrive

Typically operate as per Section 6.16.

Additional Considerations:

- Search the apartment above when the 2\textsuperscript{nd} ladder was required on the fire floor.
- Search all hallways and stairs above the fire on a continual basis.
- Search apartments above and below the fire as necessary and directed.

8.8.12 4\textsuperscript{th} Ladder to Arrive

Typically operate as per Section 6.17.

Additional Considerations:

If the 3\textsuperscript{rd} ladder is operating in the apartment above the fire then:
Search all hallways and stairs above the fire on a continual basis.

- Search apartments above and below the fire as necessary and directed.

The Fast Unit, Ventilation and Support Group and the Rescue and Squad Companies shall operate as per sections 6.18 to 6.20 respectively.

### 8.9 CHIEF OFFICER DUTIES

Typically operate as per Section 6.21.

Additional Considerations:

The variables and potential difficulties that may be found at Class 2 high-rise residential building fires place additional responsibilities on chief officers. Initial units may face significant challenges requiring additional resources. First arriving and additional chiefs must rapidly identify needs and request additional resources promptly.

#### 8.9.1 1st BATTALION CHIEF TO ARRIVE

Typically operate as per Section 6.22.

Additional Considerations:

- Review CIDS to ascertain specific building information.
- Verify fire floor and access to fire apartment and standpipe.
- Locate building personnel to ascertain:
  A. Stair and elevator locations at lobby and terminal points. Service elevators and fire stairs may be difficult to locate.
  B. Apartment information and access.
  C. Status of occupants.
  D. Type of occupancy.

In addition to fire conditions, other factors that may require resources beyond a 10-77 signal include:

- Large apartments or floor areas.
- Complex layouts (e.g. duplexes, combined apartments, numerous open stairs).
- Significant smoke movement due to open vertical channels (stairs, voids, etc.).
- Occupants reported trapped on the floors above.
Determine adequacy of resources on the fire floor, in consultation with 1st ladder officer and Fire Sector Supervisor.

Assign 3rd ladder company based on fire floor and floor above conditions. Likely assignments may include:

- Assume 2nd ladder company responsibilities on floor above if 2nd ladder is operating on the fire floor.
- Search hallways and stairways above the fire. Pay particular attention to open stairs.

8.9.2 2nd BATTALION CHIEF TO ARRIVE – FIRE SECTOR SUPERVISOR

Typically operate as per Section 6.23.

Additional Considerations:

- If the apartment has more than one entrance, ensure all members are aware of the entrance that is being used to attack the fire.

- In buildings without a public hall or a small landing, it may be necessary to gain entry to the apartment below to stage units and provide a location to flake out the hoseline.

- If the 2nd ladder company has already committed to the floor above, available members of the 3rd or 4th ladder companies may be used to support operations on the fire floor if required.

- Vertical voids (pipe recesses, etc.) may allow for fire extension. Ensure the floor above is checked for fire extension.

- Confirm that standpipe operations are feasible and underway.

- Ensure that all stairs have been identified and searched.

- Determine if resources are sufficient for fire floor and floor above operations.

- Communicate, when determined, the layout of the apartment, elevator shafts and secondary stairs to the IC.
8.9.3 3rd BATTALION CHIEF TO ARRIVE–SEARCH AND EVACUATION GROUP SUPERVISOR

Typically operate as per Section 6.24

Additional Considerations:

- Ensure all stairways and hallways are searched. Open stairs will allow smoke and heat to rapidly spread throughout the building.

- Fire stairs may be difficult to locate which may require the assistance of building personnel. Ensure any stair affected by the fire is searched.

- In buildings with one stairway or open stairs, it may be necessary to use discretion when sending members to the floors above. This decision will be based on such factors as the location of the fire in the apartment (near entrance or remote), the type of fire (wind impacted), the smoke and heat conditions in the stairs and halls, the distance between the stair(s) and the apartment door etc.

- It may be necessary to initially set up the SAE Group on a floor below the fire.

Particular attention should be placed on identifying and inspecting the terminal points of all shafts (e.g. stair, elevator).

Notify the IC of significant smoke or heat conditions on the upper floors, or the need for additional resources.

8.9.4 DEPUTY CHIEF

Typically operate as per Section 6.25.

Additional Considerations:

- Small fires in Class 2 high-rise residential buildings can often be managed much like any HRMD fire. However, fires resulting in rapid smoke and heat movement and/or panicked occupants will likely require proactive steps, including calling for additional alarms.

- Consider the possibility of fire extension to the floor above via vertical shafts. Be aware that open stairs and vertical voids may allow for rapid smoke spread throughout the building requiring additional resources.
Class 2 Reference Photos:

Reference Photo 1: Interior Wood Framing

Reference Photo 2: Steel I Beam in plaster wall

Reference Photo 3: Wood flooring over concrete
Reference Photo 4

Reference Photo 5
Photo 7A shows a typical Fire Stair. As stated in the individual stair definitions, what determines the type of Fire Stair is where the doors from the Fire Stair lead to.

1- If these 2 doors lead directly into apartments in the same wing then this is an Open Fire Stair.

2- If these 2 doors lead into apartments in different wings then this is a Shared Fire Stair.

3- If these 2 doors lead into a vestibule or hallway which leads to apartment door(s) then this is an Enclosed Fire Stair.
Reference Photo 7B: (Class 2 Fire Stair)

Reference Photo 8:
17 story Class 2 with 3 Rear Fire Escapes to the Roof
Reference Photo 9:
9 Story Class 2 with 1 Fire Escape to the 6th Floor Only

Reference Photo 10:
Standpipe Outlet in Public Hallway

Reference Photo 11:
Class 2 STDP Outlet Heights Can Vary

This standpipe outlet is over 7' high.
Note: 6' hook used as a height reference.
Photo 12A
In this picture the door to the public hall is open.

Photo 12A shows a picture of the Service Stair. In the forefront are two apartment doors (they are not the primary entrance doors to these apartments). Also in the picture are the standpipe and an entrance door to the public hall. The location of the service elevator is indicated by the arrow.

Photo 12B
In this picture the door to the public hall is closed.

Photo 12B shows the Service Stair with a better view of the service elevator. The door to the public hall is closed in this picture. In this instance there is access from the public hall to the Service Stair. Many times there is no access from the Service Stair to the public hall which limits operational flexibility.
Photo 13
(No separation between stair and apartment doors)

Photo 14
(Open stair that starts in the lobby)
## CL2 CIDS Worksheet

**MUST** have cement ceilings/floors and fireproof type construction

<table>
<thead>
<tr>
<th>Building address</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Super’s #</td>
<td></td>
</tr>
</tbody>
</table>

**CIDS order for Class 2 Buildings.** After building description the order of information will be

1- **Amount of Wings or Towers (if present)**. 1e.
   - 3 Wings
   - 2 Towers

2- **Stairway type and amount**. 1e.
   - One open stairway
     - One open and one enclosed stairway
     - Include STDP info only if 1 stair or STDP in all stairs
   - 1e open stair w/STDP or
   - 3 open stairs each w/STDP

3- **Roof Access**. 1e.
   - Isolated Roof
   - Roof access via exposure 2
   - FE 4 side to RF for E & F apts

4- **Secondary means of egress**
   - No Fire escape (No FE)
   - Fire escape for A and E line.
   - Fire stairs 2nd exit for A & E line
   - 2nd exit for apts in stairs

5- **Sprinkler system (if present)**. 1e.
   - Sprinkler system in stairway only
   - Cellar SPRKR

6- **Standpipe outlet location**. 1e.
   - Standpipe in service stairway
   - Standpipe in B stairway

7- **Other info**. 1e.
   - Elev to use (passenger or service) if relevant
   - Number of apartments per floor (APTS/FL)
   - Duplex/Triplex apts
   - Hallway size
   - AKA’s
   - Penthouse apts (PH on RF)
   - Number of lengths needed