Appleton Fire Department

Rules, Regulations &
Standard Operating Procedures

December, 2003

FOUNDATION

Annual Town Meeting of the Town of Appleton
Saturday, March 19, 1988

Article 18. On Motion the Town voted to adopt the Establishment of the Appleton Volunteer Fire Department. The purpose of this Fire Department shall be to provide fire protection to the inhabitants of Appleton by maintaining a municipal fire Department for fire protection and extinguishment of fires in Appleton and to respond to such calls as are required by membership in the Knox County Mutual Aid Association. The Fire Department shall be headed by a Fire Chief who shall be appointed by the Board of selectmen. Preference shall be given to the person elected by the majority of voting members of the Fire Department. The Powers and duties of the Fire Chief will be:

A) To direct and control all municipal and volunteer firefighters in the performance of firefighting operations within the Town.

B) To draw up rules and regulations, with the approval of the Selectmen, relating to Town fire protection, consistent with State statutes and Town ordinances.

C) To provide a training program for firefighters within the Town in cooperation with appropriate governmental agencies.

D) To provide for the maintenance of all town owned fire equipment and buildings used by the Fire Department.

E) To prepare and submit to the Selectmen an annual budget relating to fire protection activities.

F) To be authorized to obtain assistance from persons at the scene of a fire to extinguish the fire and protect persons and property from injury.

G) To be authorized to pull down and demolish structures and appurtenances if he judges if necessary to prevent the spread of fire

H) To suppress disorder and tumult at the scene of a fire, and generally to direct all operations to prevent further destruction and damage.

To assist the Fire Chief in carrying out his duties, the Town may employ fire officers who shall be elected by the membership of the Fire Department and be subject to confirmation by the Selectmen. The Duties of the fire officers shall be to assist the chief as he so may direct or to perform the duties of the Fire Chief in his absence. To assist the Fire Chief and his officers, the Fire Department may enlist the help of volunteer firefighters who shall be subject to confirmation by the Selectmen. The duties of the firefighters shall be to extinguish all fires to which they are called, to protect lives and property endangered by fires, and to carry out all other related activities as directed by the Fire Chief or his officers.

The appointment of the Fire Chief, his officers, and firefighters shall be for three years unless removed for just cause or disability by the Selectmen, or for resignation or retirement. The compensation of the Fire Chief and other members of the Fire Department shall be determined by the legislative body of the Town.

RULES AND REGULATIONS

All members of the Appleton Fire Department must familiarize themselves with the Rules, Regulations, and Standard Operating Procedures contained in this document so they may be efficient in carrying out their duties as firefighters.

These rules, regulations, and standard operating procedures are not expected to provide for every question or problem that might arise in a department established for emergency service. Much must be left to the conscientious and common-sense discharge of duty, loyalty, and integrity of department members, as well as to members' intelligence and discretion. According to the degree to which individual members demonstrate these qualities, activities, and judgment, will be their claim to future promotion.

In matters of general conduct not within the scope of Department rules, members should be true to the best instincts of law-abiding, self-respecting citizens. Always be regardful and zealous of the good name of the service with which you are connected. The behavior of each member contributes importantly to the reputation of the Department.

It is the policy of the Appleton Fire Department to provide and to operate with the highest possible levels of safety and health for all members. The prevention and reduction of accidents, injuries, and occupational illnesses are goals of the fire department and shall be primary considerations at all times. This concern for safety and health applies to all members of the fire department and to any other persons who may be involved in fire department activities. For further details on the department's safety policy refer to NFPA 1500.

These Rules, Regulations, and Procedures shall be known collectively as the *Rules for the Appleton Fire Department*, and shall be from time to time updated. They shall apply to every member of the Fire Department, and every member shall agree to conform to such Rules as now are, or hereafter, may be adopted.

Organization

Department meetings and training will fall on the second and fourthMondays of each month, unless that Monday is a Federal or State Holiday, in which case the Department meeting and training shall take place on the following Monday. Active membership in the Appleton Fire Department requires attendance of at least 60% of all scheduled department training meetings per calendar year, unless prior arrangements have been made with the Chief. Members not meeting this requirement prior to the 2nd week of October will be reimbursed at the end of the calendar year and may receive a prorated reimbursement based on the following equation:

60%	$200
45-59%	$150
30-44%	$100
Below 30%	$0

New members must be active in the department for four (4) months, attending at least one-half (1/2) the department training meetings before they are issued turnout gear and a radio/pager. Gear, except radios/pagers, will remain at station during non-use for first year. Probation may be accelerated at the discretion of the Chief.

Junior members sixteen years of age but younger than eighteen years may join the

Department. Junior members are subject to the same probationary requirements as regular members and, following the probationary period, shall enjoy the rights and privleges of regular members. Junior members are subject to additional rules and restrictions according to State and Federal regulations, but shall be reimbursed according to the same schedule as regular members.

The Appleton Fire Department shall consist of one Chief, at least one Assistant Chief, and as many other officers and men as the Appleton Fire Department may determine necessary from time to time.

Election of Officers

Election of the Fire Chief shall be by a majority of the members of the Department in attendance at the first business meeting in January and then confirmed by the Selectmen of the Town of Appleton. A Quorum of seven members-in-good-standing of any class must be present.

Election of Assistant Fire Chief(s), Captain(s), Lieutenant(s), Safety Officer, Equipment Officer, Training Officer, Apparatus Officer, and Self-Contained Breathing Apparatus (SCBA) Officer shall be by a majority of the voting members of the Department in attendance at the first business meeting in January, and then confirmed by the Selectmen of the Town of Appleton.

Officers

Chief
[Refer to Maine Statutes, Title 30-A §3153]

Powers
The fire chief may:

- Unless otherwise provided by charter or ordinance, employ all municipal firefighters, appoint a deputy and other officers and remove them for cause after notice and hearing;

- With the approval of the municipal officers, adopt administrative regulations relating to municipal fire protection, consistent with this chapter and municipal ordinances;

- Obtain assistance from persons at the scene of a fire to extinguish the fire and protect persons and property from injury; and

- Pull down and demolish structures and appurtenances if the fire chief judges it necessary to prevent the spread of fire.

Duties.
The fire chief shall:

- Direct and control all municipal and volunteer firefighters in the performance of firefighting operations within the municipality except as provided in Titles 12 and 25;

- Provide a training program for firefighters within the municipality in cooperation with appropriate governmental agencies;

- Provide for the maintenance of all fire equipment owned by the municipality and buildings used by the municipal fire department;

- Prepare and submit annually to the chief administrative official of the municipality a budget relating to fire protection activities; and

- Suppress disorder and tumult at the scene of a fire and generally direct all operations to prevent further destruction and damage.

Performance

- The Chief shall be the executive officer of the department and shall report to and be under the authority of the Selectmen.

- The Chief shall perform such duties as may be required by law or by ordinance, or assigned to him/her by the Selectmen. The Chief shall have absolute control and command at fires and alarms over all members of the department, and of all apparatus and equipment belonging to the department, and shall direct such measures as he/she shall deem proper for the control and extinguishment of fires.

- The Chief shall have charge of the station, apparatus and equipment, and other department property, and shall by personal inspection, assure him/herself that the station and apparatus are maintained at the highest possible standard of efficiency.

- The Chief shall arrange for frequent, regular, and adequate drills, lectures, and training for the members of the department under competent supervision. Such drills shall be participated in by every officer and member of the Appleton Fire Department.

- The Chief shall release companies and apparatus from fire duty as soon as conditions warrant and order their return to quarters. He shall not jeopardize the life of any person unnecessarily and shall leave premises where fire has occurred in such condition that the fire will not rekindle.

- The Chief shall assume such powers and discharge such duties as are required by law, shall familiarize him/herself with all state and municipal laws and regulations governing the use and occupancy of buildings so far as the safety of life and property is concerned, and familiarize him/herself with the state and municipal laws and regulations governing the transportation, handling, storage, sale, and use of flammable or explosive liquids and compounds.

- The Chief shall cooperate with every state and municipal department and Emergency Management Agency activity in the observance and enforcement of all laws and regulations for public safety.

- The Chief shall keep him/herself and the department informed on all the latest data and methods pertaining to firefighting and fire prevention.

- During the absence or disability of any officer or member of the department, the Chief shall detail the next inferior officer or member to the position temporarily vacant.

- The Chief shall arrange the duties of caring for the station and apparatus with due regard to an equal division of work.

- The Chief shall not allow lounging about the station by undesirable or intoxicated

persons.

- The Chief shall make, or cause to be made, all reports on the necessary forms, and keep all records in the books, provided by the department.

- The Chief shall make proper requisition for all necessary supplies and for all needed appliances, tools, or furnishings.

- The Chief shall not permit persons who are not members of the department to ride on any of the apparatus, either going to or returning from a fire, alarm, or drill without permission from the Officer in charge.

Assistant Chief
One or more Assistant Chiefs shall be the ranking officer(s) of the Fire Department below the Chief, and shall assist the Chief in the operation of the Department. In the absence of the Chief, the Assistant Chief shall take the place of and exercise the same powers and authority as the Chief.

Captain
A Captain shall be in direct charge of his/her respective company's operations, including whatever personnel may be assigned to that company or companies. A Captain shall assist the Assistant Chief in the operation of the Department, and in the absence of the Assistant Chief, shall take his place and exercise the same powers and authority as the Assistant Chief.

Lieutenant
Lieutenants shall be under the direction of the Chief or other officers and shall direct various companies or groups of men during firefighting, drilling, or other departmental activities.

Safety Officer
A Safety Officer is charged with the responsibility of ensuring that an acceptable level of safety is maintained while the Fire Department is executing any of its assigned activities.

Equipment Officer
An Equipment Officer shall keep a correct list of all tools and appliances carried on the apparatus, together with the department number of each length of hose, and upon return from an alarm, shall thereupon check out promptly and report damage or missing hose or other department property. The Equipment Officer shall see that the hose on the apparatus is changed periodically or immediately after returning from a fire if wet or damp.

Training Officer
ATraining Officer shall be responsible for coordinating all departmental training and for maintenance and record keeping in accordance with NFPA and OSHA requirements.

All firefighters shall be trained in occupational safety, exposure control to infectious diseases, the wear of required personal protective equipment, and any tasks to be performed, such as pump operation, vehicle operation, or exterior/interior attack. Fire training registration and material costs shall be paid for by the Town of Appleton.

Apparatus Officer

AnApparatus Officer is responsible for all maintenance and up keep of Fire Department apparatus, as well as general record keeping on all apparatus.

Self-Contained Breathing Apparatus Officer

ASelf-Contained Breathing Apparatus (SCBA) Officer shall be responsible for all SCBA and bunker gear. This includes inventory, inspections, care, and readiness. Firefighters with concerns over such equipment shall report to him or her.

General Rules

- Firefighters should recognize the chain of command and respond to orders accordingly and promptly.

- Officers shall be just, dignified, and firm with their orders to subordinates, being careful to abstain from violent, abusive, or immoderate language in giving orders and directions, as well as in conversation with them, and shall see that all rules and orders are strictly carried out.

- No officer or member of the department shall receive any fee or reward for extraordinary service rendered in the line of their duty without the special permission of the Selectmen, nor shall anyone ask, demand, or receive from any person or persons, pay for services rendered in the performance of duty, or gifts of any kind for any purpose, without such permission having been obtained. Records of all donated funds shall be made available to department members.

- Training reimbursements will be made the last week of October. All members are entitled to a yearly training reimbursement at the end of each calendar year, provided they were *active members* of the department for the entire calendar year.

- Firefighters who use the station for personal use, such as washing or servicing vehicles, shall leave the station in the order in which it was found (i.e., clean floors and apparatus in its original positions). *Never* disable a vehicle in the station or in front of the station doors unless permission to do so is granted by a Chief Officer.

- Under no circumstances should a firefighter respond to any incident or drill if he/ she has consumed any alcohol.

STANDARD OPERATING PROCEDURES

Introduction

Standard operating fireground procedures are a set of organizational directives that establish a standard course of action on the fireground, increasing the effectiveness of the firefighting team. It is difficult for any fire department to operate consistently and effectively without Standard Operating Procedures (SOPs). This is especially true during large scale, complex, or unusual operations. SOPs allow the Appleton Fire Department to develop a "game plan" before the fire-one of the most important elements of pre-fire planning.

Successful fireground command and firefighting activities require the integrated efforts of the entire team. This team must be organized and mobilized under a strong central plan. Our department must develop procedures that apply to particular problems. Local conditions, capabilities, and limitations will define specific responses. Our goal is to simplify and standardize operations.

Standard operating procedures become a collection of values and experiences that evolve into a fireground playbook and which represent the official policy of the organization. This system eliminates the guess work as to what win happen next on the fireground. it defines the roles and responsibilities of everyone on the fireground, creating an official structure where leaders lead and followers follow.

A very real management problem is trying to get everyone to do standard operations the same way. Each crew tends to develop very individual and unique ways of doing the same thing. This fragmentation can create a number of small departments operating within the same organization. It becomes impossible to achieve department wide improvement or consistency. Written SOPs give our department a fighting chance to eliminate this fragmentation.

The Appleton Fire Department must make a commitment to use SOPs on all field activity all the time. Applying the guidelines to everyday, routine business develops a set of regular habits for everyone. If a variety of decisions have been made before the fire that structures how the organization will react, the Fireground Commander can concentrate on critical rather than routine decisions. SOPs serve as the foundation for a simple fire control system model. This model defines the necessary management activities and the relationships between them.

The first step in the model forces the organization to decide on its overall incident management philosophy. Each step in the process must be defined. All levels of the department are involved, with support and direction from the Chief Officers. The document before you provides a comprehensive starting point. We'll start by carefully analyzing current operations, deciding what works and what doesn't. The plan can then be adjusted and integrated to reflect the true needs of the Appleton Fire Department.

Standard Operating Procedures provide a practical training package for everyone. They allow members to become familiar with the system before it is actually used. As we review this document, all members of the Appleton Fire Department will have the opportunity to comment on and refine it to meet our needs. This not only will produce a better set of SOPs, but will also lead to smoother implementation and ownership of the plan.

Plan review will be an on-going process. Actual fires are "show time" for the entire system. These SOPs will become the basis for post-fire critiques. Reviews will reinforce good performances and help resolve both individual and collective problems that may occur. Both positive and negative outcomes will be integrated back into the SOPs. After the fire is the time to discuss and focus on lessons learned.

Changes within the community and our fire department capabilities may require adjustments to the SOPs. Maintaining current SOPs is time consuming but ever so important. We'll strive to stay current through application of the Incident Control Model.
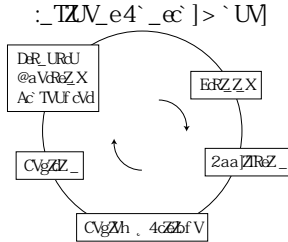
RESPONSE GUIDELINES

Risk Management

Fire fighting can be a dangerous profession. All personnel must understand the concept of *acceptable risk.* That is, the degree of risk at which firefighters will be placing their lives must be commensurate with the benefits from doing so. It makes little sense to greatly endanger the lives of firefighters when there is no threat to other persons. Conversely, when there the life of another person is in jeopardy, the level of acceptable risk rises, allowing for the placement of firefighters into situations which would otherwise be inappropriate. Nevertheless, even when there is a threat to life of other persons the degree of risk may be considered to high, making rescue inappropriate.

One of the primary functions of an Incident Command (IC) is risk management, and the outcome of the risk/benefit analysis plays a key role in the development of tactics and strategies. It is important for all to understand that risk management must be a continuous process affecting all aspects of our organization and it's many functions.

Response Manner

For many years fire departments have responded to incidents utilizing lights, sirens, and (occasionally excessive) speed. Indeed, response has accounted for approximately 1/3 of all firefighter injuries for the past several years. It makes little sense to accept a higher degree of risk in responding than that which will be accepted upon arrival at the incident.

Due to the need for clear communications and the desire to utilize plain text in the communications process the following two terms should be utilized when discussing the manner (level) of response:

- **Emergency:** A response which has been determined appropriate for, and utilizes, emergency lights, sirens, and other warning devices meant to request the right of way from other traffic.

- **Non-Emergency:** A response which has been determined inappropriate for the use of warning devices, and is conducted in a manner considered appropriate for normal vehicular traffic (i.e., obeying the rules of the road).

Incident Response

For emergencies the response manner (level) should be determined with consideration of the threat to life, the threat to property of value, the threat to exposures, and the threat to the environment. It is clearly understood that a structure fire requires a maximal response (because it is likely to involve a threat to life, it is a typically property of value, and often threatens exposures). Less clear are the times in which a minimal response is indicated. A good example would be a smoldering fire in bark mulch in a shopping center parking lot, in which the location of the fire is such that it is without exposures. It makes little sense to respond with lights and sirens, careening through intersections and running vehicles of the road, to an incident such as this.

Regardless of the nature of the incident, the manner (level) of response is based on precise, informatory, and relative dispatch information. The manner (level) of response is determined from the information which the responder receives from dispatch. Should

the information be incomplete, then the selection of the response level must be based on the information currently at hand, and a request should be made of the dispatch center to obtain the necessary additional information. If, during a response at any level, when additional information is obtained which would alter the manner (level) of response, then the Officer responding on the first due apparatus should redetermine the appropriate response level and inform dispatch and other responding units.

Alarms & Radio Communications

The Appleton Fire Department is dispatched by the county-wide Knox Regional Communications Center (KRCC, also spoken simply as "Knox" during radio communications) using a unique fire alarm tone that are received by all Appleton firefighters' pagers and hand-held radios on the county-wide emergency frequency. KRCC identifies the Department, states the Code and nature of the incident (see below), and provides an address or location of the scene. The following messages are sent:

1 st Alarm (Code I Fire) Tone
Message: "Attention all units Appleton, code 1, incident type, street address, cross street" repeat.
For all alarms such as a structure fire or whenever requested by Fire Department personnel.

I st Alarm (Code 2 Fire) Tone
Message: "Attention all units Appleton, code 2, incident type, street address, cross street;" repeat.
Whenever the IC requests an additional alarm, a tone should be transmitted indicating the current status of the alarm.

2nd Alarm Tone
Message: "Attention all units Appleton, incident type, street address, second tone;" Repeat.
For instances when no one has responded for a period of three minutes.

Call Outside of the Town, (Code 3 Fire) Tone
Message: "Attention all units Appleton, code 3, mutual aid request, incident type, street address, city or town," repeat.

Messages and Information Tone
Message: "Attention all units Appleton, this is a monitor test and one announcement...;" repeat.

Upon receipt of an alarm tone, the Chief, Assistant Chief(s), and other officers as appropriate shall respond directly to the scene, notifying KRCC and other firefighters of their response (e.g., "Appleton Unit 1 is 10-8 to the scene"). Firefighters, drivers, and other members of the Department shall report immediately to the fire house to gear up and provide appropriate apparatus and equipment response.

If no confirming radio communications from Appleton are received after three minutes from the first tone, KRCC dispatchers will automatically re-tone the alarm. Upon receipt of a second tone (no officer has responded), firefighters should individually notify KRCC by radio of their current action ("Appleton Unit 5 is 10-8 to the station" or "Appleton Unit 30 is going direct to the scene"). To provide the most appropriate response to an emergency, use of KRCC's frequency should be optimized such that all members responding to a call remain informed. Information-rich radio communications allow for

the best response by all parties to a developing situation where location and available personnel may dictate a non-standard but common-sense emergency response.

If no confirming radio communications from Appleton are received after six minutes from the first tone, KRCC dispatchers will automatically invoke mutual aid, toning an alarm for the departments of neighboring towns.

The first Appleton firefighter "on scene" becomes Incident Commander (IC), and should size up and report to KRCC, clearly describing the situation and clearly stating "Appleton Unit X has command." This report will be heard by other responding firefighters who will tailor their responses appropriately.

All vehicles and equipment leaving the station shall report to KRCC that that equipment is underway to the scene (for example, "Appleton Engine 2 is 10-8" or "Appleton Tanker 4 is enroute to Union.") The same vehicle(s) shall report to KRCC upon their arrival on scene, before switching to Appleton's working frequency as required ("Appleton Engine 2 is on-scene."). KRCC shall also b e notified when a vehicle clears a scene ("Appleton Engine 2 is returning to quarters.") and when it is back in station ("Appleton Engine 2 is back at station."). These status messages with times are officially logged by KRCC dispatchers, and may be referenced when making incident reports.

When apparatus and personnel have arrived at the scene and mitigation activity is underway, Incident Command will use the KRCC repeater frequency to direct firefighters to switch to Appleton's own radio frequency.

It is the responsibility of Officers assuming command to record company assignments and have pertinent information available to aid the operation and assist with transfer of command as necessary. KRCC must at all time know who is in command at a scene. Thus, while command transfers may be face-to-face, a clear statement must be made to KRCC by radio to indicate that command has been transferred.

On a fireground or incident scene, operating companies and sectors should give brief periodic reports to the IC indicating position, progress, and needs. IC may ask for progress reports to help determine if hose lines, apparatus placement, ventilation, rescue, fire control, or other tactical functions are working effectively.

When the IC declares work completed at a scene, KRCC shall be notified that "All Appleton units are clear of the scene and are returning to quarters."

General Radio Procedures

KRCC procedures dictate that the sender of a transmission first announce the department name ("Appleton") and the sender's identification or equipment description ("Unit 1" or "Tanker 4"), then announce the name or unit identification of the unit to be contacted, followed by a message. Such a call may sound like "Appleton Engine One to Appleton Command" or "Appleton Engine 2 to Knox, we are clearing the scene.".

Be short and specific. Before transmitting know what to say. Choose precise terms to communicate the desired message as clearly and briefly as possible without wasting air time. Orders received by companies should indicate a specific function which is assigned to the company or reasonably performed with other companies.

In addition to being functional, assignments by radio should indicate an objective to the action. The company should know exactly where to go, to whom to report, what the job

will be, and what the objective of the job is. Orders should tell what to do-not how to do it.

Arrival

Officers must be aware of the arrival sequence of the initial alarm assignment and follow Level I Staging Procedures. The first arriving officer must assume command, transmit a report to KRCC and units on the ground, make a size-up, and select a command option. Orders and instructions must be given to later arriving companies as needed.

Size-Up

If the alarm dispatch was made to an intersection or an approximate address, the correct address should be announced on the KRCC frequency as soon as possible.

An important step in the initial command phase is size-up. Command must assemble all facts available to evaluate the situation. This consolidates observations by Command, preplan information, information from the dispatch office, persons at the scene, and reports from other units. This information is used to formulate the operation plan and includes building information. life hazard, fire hazard analysis, and associated facts with an appraisal of the situation's potential. Include the following information in an initial size-up report to KRCC:

- Building Size (include number of stories): small, medium, large
- Fire/Smoke Conditions: Nothing Showing, Smoke Showing (Indicate extent, location), Fire Showing (Indicate nature, extent, location), Fully Involved (Indicates entry/primary search precluded), Working Fire (Indicates full assignment needed). The "Working Fire" report may be given on arrival or may be a follow-up report after the initial size-up. Smoke or fire showing reports indicate some uncertainty as to the extent and should be followed by additional information.

When size-up indicates a smoke or fire showing situation is not a working fire, the IC should report the limited extent of the fire in a follow-up report.

Once Command has been established, all communications with KRCC should come from Command. The fire department dispatch office will acknowledge ALL CLEAR and UNDER CONTROL reports from Command only.

Apparatus Response

The following guidelines for response of apparatus and personnel have been established by the officers of the department to provide assistance in the assignment of apparatus and personnel. It is to be used as a guideline only. The Incident Commander or officer in charge may elect to change assignments as he or she feels necessary. Based upon the information received during KRCC's alarm message communications, engines should respond in the following order.

Code 1 Alarms

- Vehicle fire: Engine 2: Engine 3
- Grass or woods fire: Engine 3, Engine 2, Tanker 4
- Other small fires: Engine 2
- Power line down: Engine 2

- Spill or leak: Engine 2, Engine 3; Engine 5 standby
- Hazardous material condition: Engine 2, Engine 3, Engine 1, Engine 5 standby
- 10-55 P.I. extrication/rescue: Engine 2, Engine 3
- Arcing electrical equipment: Engine 2
- Ice rescue, water rescue: Engine 2, Engine 3
- Bomb scare: Engine 2, Engine 1, Engine 5, Engine 3
- Hazardous condition: Engine 2, Engine 3, Tanker 4, Engine 1

Code 2 Alarms (1st Alarm)

- Structure fire or alarm investigation: Engine 2, Tanker 4, Engine 1, Engine 3
- Chimney fire: Engine 2, Engine 3, Tanker 4, if 2 miles away from station.

Code 3 - Mutual Aid, Outgoing

- Tanker 4, with 2 firefighters.
- Engine 1, with 5 firefighters, including personnel enroute in personal vehicles, or as specified in request.

Code 3 - Mutual Aid, Incoming (3rd Alarm)

As requested by Incident Command.

Note: Engine 1, responding for mutual aid, should have a staffing of 5, including an officer. A Commanding Officer should respond as a liaison with IC.

Firefighters as Operators of Apparatus

Under the direction of the Chief, each operator shall have the care and management of motor apparatus to which he/she has been assigned and will be held responsible for its good condition. Upon returning from an alarm, they shall inspect the apparatus for which they are responsible to be assured that it is in good condition, ready for service at all times, and report any defects to the Apparatus Officer or the Chief.

- Operators should not turn a comer at a rate of speed not consistent with safety. if necessary to avoid a collision, apparatus should be brought to a full stop.

- Apparatus must be under control when crossing all intersections, and at all dangerous crossings. Apparatus must never be driven at a speed that win endanger life or property.

- Operators shall not race or attempt to race with any other apparatus or vehicle, nor shall they attempt to pass any other apparatus driving in the same direction, unless ordered to do so by the Commanding Officer (CO) in the event that the other apparatus is apparently disabled.

- Operators shall make an immediate report, by telephone or verbally, to the Chief or CO, of all accidents, collisions, or occurrences resulting in loss of life, injury to persons, or damages to property, however slight, and all other extraordinary or unusual occurrences of any nature, whether happening to members or property of others, in connection with the operations of the department, at any time or place.

- No person, including firefighters, shall ever be allowed to ride on the exterior of any fire apparatus.

- Under no circumstances should a firefighter drive any motor vehicle that is owned by the Town of Appleton or respond to a fire call or drill when he/she has consumed any amount of alcohol.

- Extra caution will be exercised when operating Tanker 4 due to the excessive weight of the vehicle and the lack of baffles in the tank which causes a shifting of the center of gravity during operation. Operators should take necessary actions to ensure that the tank is either full or empty before the truck is driven.

- All apparatus will have the rear wheels chocked when the operator leaves the cab.

- It is the State law that all persons riding in a motor vehicle shall wear seat belts, including fire apparatus.

- All apparatus shall be left at station with a minimum of 3/4 tank of gas.

Driver Safety

All fire responses will be with red signal lights and siren unless otherwise indicated by the fire department dispatch office or Command.

When responding under emergency conditions, fire department vehicle speed shall be regulated *at all times* by existing road and traffic conditions. Unless all lanes can be accounted for by the driver during an emergency response, fire department vehicles shall come to a complete stop at all stop sign intersections and negative right-of-way situations. Rule of thumb: **If you can't see, STOP.**

Respond and react according to the conditions encountered, neither poor road conditions, inclement weather, or the actions of others relieves the driver of his responsibility to drive safely. These are situations likely to be encountered at any time. Drive accordingly.

When driving apparatus at the incident scene, drivers must resist the tendency to drive hastily or imprudently. This tendency is mostly due to the urgent nature of incident operations.

All persons shall be seated and secured in the vehicle when the vehicle is in motion. This pertains to response in both apparatus and private vehicles when used for response to the scene or station.

The hazards of driving on or adjacent to the incident scene require the driver to use extreme caution and alertness. It also requires that he utilize a prudent speed for the conditions encountered, in order that he may react to the unexpected.

Drivers must consider the danger their moving vehicle poses to fire department personnel and spectators who may be preoccupied with the emergency and inadvertently step in front of or behind a moving apparatus.

Drivers must also be aware of the potential that exists for vehicle accidents on or near the incident scene due to the distractions caused by the emergency. Drivers, and indirectly the Officer, are responsible for the safety of all personnel riding on the apparatus.

Avoid backing where possible. Where backing is unavoidable, use guides. Where guides are unavailable, dismount and walk completely around the apparatus before backing.

During an emergency response, fire vehicles should avoid passing other emergency vehicles. If unavoidable, the passing arrangement should be conducted through radio communications, with approval of an Officer.

When responding with apparatus using audible warning devices, windows and doors must be fully closed unless their closing poses an imminent threat to the operation of the vehicle.

Signal lights shall be used when backing apparatus into the station.

Members of the Appleton Fire Department are authorized to use a red signal light not exceeding 5" in diameter on the vehicle. Such light may be displayed, but shall not be in operation except while the vehicle is in use for fire or other emergency service. The said red signal light shall be mounted as near as practical above the registration plate on the front of the vehicle or mounted to the dashboard with the light shielded from the driver so as not to interfere with his vision. Private vehicles are not emergency vehicles and therefore are not afforded any exceptions or special privileges under state laws.

Wildland Fires

Wildland fires present a different threat and thus require different tactics and resources than structural type fires. The mutual aid system in effect between the town and surrounding communities is established for structural type fires, when both giving or receiving mutual aid. The IC should request the specialized apparatus as needed in lieu of alarm assignments, or he may get a structural alarm assignment. Likewise, when mutual aid towns request assistance with wildland type fires, it should be clear what type of apparatus and staffing they require.

Special Response Cases

When prearranged by mutual agreement or dictated by certain incidents or occupancies a special (or sometimes automatic) response above normal mutual aid may be needed.

In instances when incoming mutual aid is utilized, the dispatch center should inform the incoming mutual aid units not only of their assignment, but also of the level of response desired. Typically, incoming mutual aid apparatus enroute to the fire scene would respond at an emergency level. It may be less appropriate for incoming mutual aid apparatus responding to the station for a coverage assignment to respond in an emergency manner.

In instances when additional, specific resources are needed at the scene of a fire or EMS incident, then the Incident Command should indicate the level of response desired. This is of particular importance during EMS incidents. For example, when requesting an engine for assistance the engine personnel are often unclear about the problems encountered on scene, the reason why they have been dispatched and the manner (level) at which they should respond. Because of this the engine crew are often placed at a greater degree of risk than the EMS personnel have determined to be appropriate for the incident. When EMS personnel are working a code, or are packaging a patient whom the EMS personnel will be transporting at an emergency status then it would usually be appropriate for additional assistance to respond at an emergency level. If, however,

the patient is going to be transported at a non-emergency level, or the engine was requested to assist with paper work such as obtaining refusals than an emergency response would be inappropriate.

Fireground Safety and Accountability

To afford accountability of personnel operating in hazardous environments, all personnel will be issued an ID tag after the probation period of 4 months on the department. Each individual must leave their ID tag with IC or an officer in charge of a particular operation, i.e. water supply, etc., prior to commencing an assignment.

All personnel shall wear their ID tags on their helmet clip when not on assignment. This tag shall be left at the assigned collection point upon entry to the hazardous environment. This tag shall also be immediately recovered from the collection point upon completing the assignment, regardless of the reason of departure.

Tactical Positioning

Positioning of operating companies can severely affect the safety of men and equipment. Firefighters must use caution when placed in the following positions:

• Above the fire (floors/roof)

• Where fire can move in behind

• When involved with opposing fire streams Combining interior and exterior attack Limited access-one way in/out

Operating under involved roof structures In areas containing hazardous materials Below ground fires (i.e., basements, etc.)

• In areas where a backdraft or flashover potential exists

The safety of firefighters represents the major reason for an effective and well timed offensive/defensive decision and the associated write-off by Commmand. When the rescue of victims has been completed, Command must consider "Is *the risk worth the property that can be saved."*

When operating in a defensive situation positioning should be as far from the involved area as possible and still remain effective. Position and operate from behind barriers if available (i.e., fences, walls, etc.).

Personnel should utilize safe positions whenever possible/available, in an effort to safeguard against sudden hazardous developments such as backdraft explosion, flashover, structural collapse, etc.

When operating in an offensive situation be aggressively offensive - effective interior attack operations directed toward extinguishing the fire eliminates most eventual safety problems.

The intent of this outline is to minimize incident confusion and congestion and to limit the number of personnel exposed to incident hazards. Individuals or crews shall be

restricted from wandering about the incident scene or congregating in non-functional groups.

At extremely hazardous situations (large quantities of flammable liquids, LP Gas, hazardous materials, difficult marginal rescues, etc.) Command will engage only an ABSOLUTE MINIMUM number of personnel within the hazard zone perimeter. Selfoperating master streams will be utilized whenever and wherever possible.

At incidents where crews must operate from opposing or conflicting positions, such as front vs. rear attack streams, interior vs. exterior streams, roof crews vs. interior crews, etc., utilize radio or face-to-face communications to coordinate actions with those of the opposing crew.

Do not operate exterior streams, (i.e., hand lines, master streams, ladder pipes, etc.), into an area where interior crews are operating. This procedure is intended to prevent injuries to personnel due to stream blast and the driving of fire and/or heat and smoke at interior crews.

When laddering a roof, select ladders that will extend 3 to 4 feet above the roof line. This provides firefighters operating from the roof with a means of stabilization when transferring on or off the roof as well as with a visible means of escape, should it become necessary.

Place ground ladders near the building comers or fire walls if possible. These areas are generally more stable in the event of structural failure.

When using any ladder, use ONLY fire department ladders. NEVER use private ladders at an incident. Fire department ladders have been tested and inspected, and meet NFPA & OSHA requirements, private ladders do not meet these same requirements and must be considered unsafe.

A minimum of one ladder shall be set at each level above the ground floor during any multiple story structure operation, to provide firefighters working above the ground level with a second means of egress.

Many safety principles revolve around action that takes place at the incident scene. For the purpose of safe operations, the hazard zone can be defined as the following: The area inside an imaginary boundary. This has been determined by safety considerations according to foreseeable hazards associated with a particular incident. All firefighters entering the hazard zone shall:

Wear full protective clothing

In an effort to regulate the amount of fatigue suffered by personnel during sustained incident operations, officers should frequently assess the physical condition of their crew members. When crew members exhibit signs of serious physical or mental fatigue, the entire crew should be reassigned to Rehabilitation if possible. To be reassigned to Rehabilitation, Officers shall request reassignment from IC. The request shall indicate the crews position/conditions, etc., and shall advise as to the need for a replacement crew.

Rotation of companies will be utilized by Command during extended operations to provide an effective ongoing level of personnel and performance. It is the intent of this outline to reduce the stress and fatigue experienced during difficult operations to a

reasonable (and recoverable) level and is in no way intended to lessen the individual and collective efforts expected of all firefighters.

Role of the Safety Officer

The recognition of situations which present inordinate hazards to incident personnel and the proper response to safeguard firefighters from these hazards is of critical importance to all fire department operations.

Command has the responsibility to recognize situations requiring the implementation of a Safety Officer. Upon arrival at a working incident the assigned Safety Officer willo report to the Command Post and unless otherwise assigned, win automatically assume the
assigned responsibilities. In the absence of the Safety Officer, Command may designate any available firefighter as Safety Officer. A Safety Officer shall be established at incidents posing a potential danger to personnel such as:

• Fire complexity; multiple alarm fires

• Hazardous structural conditions, existing or potential

• Vehicle fire/extraction

• Hazardous materials and chemicals, etc.

• Any other situation where a Safety Officer could be advantageous to the safety of the operation

The presence of a Safety Officer on the scene in no way diminishes the responsibility of all officers for the safety of their assigned personnel. Every firefighter Will be expected to operate within established safety procedures at all times.

Structural Collapse

Structural collapse has been a leading cause of serious injuries and death of firefighters. For this reason the possibility of structural collapse should be a major consideration in the development of any attack plan.

Structural collapse is a possibility when a building is subject to intense fire. If fire is allowed to affect a structure long enough, some structural failure is inevitable.

Regardless of the age and exterior appearance of a building, there is always the possibility that a principal structural supporting component is being seriously affected by heat and may collapse suddenly, inflicting serious injury to firefighters. In the typical fire involved building, the roof is the most likely portion for failure, however failure of the roof may very likely trigger a collapse of one or more wall sections. This is especially true if the roof is a peak or dome type which may exert outward pressure against both the bearing and non-bearing walls upon collapse. In multistory buildings or buildings with a basement, the floor section above the fire may collapse if supporting members are directly exposed to heat and flames.

Knowledge of various types of building construction can be invaluable to firefighters from a safety standpoint, as certain types of construction can be expected to fail sooner than others. For example: Under fire conditions, light weight truss and bar joist roof construction can be expected to fail after minimal fire exposure. Known collapses have occurred in as little as seven minutes. Structures have been known to collapse without warning, but usually there are signs which may alert firefighters.

Collapse Indications

- Cracks in exterior walls

- Bulges in exterior walls

- Sounds of structural movement (i.e., creaking, snapping, groaning, etc.)

- Smoke or water leaking through walls

- Flexible movement of any floor or roof where firefighters are operating

- Interior or exterior bearing walls or columns leaning, flexing, or twisting

Contributing Factors

The following construction features or conditions have been known to fail prematurely or to contribute to early structural failure when affected by fire.

- Large open (unsupported) areas-school gymnasiums, assembly areas, warehouses, etc.

- Cantilevered canopies-which usually depend on the roof for support and may collapse as the roof fails

- Buildings with light weight truss, bar joist, or bow string truss roofs, steel roofing, exposed steel beams, facing or facade fronts

- Buildings supported by unprotected metal beams, columns, etc.

- Buildings in the process of renovation

Buildings containing one or more of the above features must be constantly evaluated for collapse potential. These evaluations should be a major consideration when determining tactical operations (i.e. offensive/ defensive).

It is a principal Command responsibility to continually evaluate and determine if the fire building is tenable for interior operations. This ongoing evaluation of structural and fire conditions requires the input of company officers advising Command of conditions in
their area of operation.

Structures of other than fire protected or heavy timber construction are not designed to withstand the effects of fire, and can be expected to fail after approximately 20 minutes of heavy fire involvement. If after 10- 15 minutes of interior operations heavy fire conditions still exist, Command should initiate a careful evaluation of structural conditions and should be prepared to withdraw interior crews and resort to a defensive position.

If structural failure of a building or section of a building appears likely, a perimeter must be established a safe distance from the area which may collapse. Consider the full length of the wall and allow for splattering of materials after impact. All personnel must remain outside this perimeter.

Evacuation

Interior firefighting operations should be abandoned when the extent of the fire prohibits or the structure becomes unsafe to operate inside. When conditions become untenable, evacuate, regroup, re-communicate and re-deploy. When a hazard is present that may affect the safety of firefighters, the primary concern of Command is the firefighters welfare. In an effort to protect firefighters from the adverse effects of hazards such as structural collapse, explosion, backdraft, etc., a structured method of evacuation must be utilized, providing for the rapid and effective notification of all personnel involved and also accurately accounting for involved personnel.

The method of evacuation selected will vary depending on the following circumstances*

• Imminence, of the hazard

• Type and extent of the hazard

• The area that will be affected by the hazard

Incident Command may order an evacuation of firefighting personnel from a building. Upon such order all apparatus and vehicles at the scene will use all their audible warning devices (sirens, bells, and horns) to alert other personnel of the need to evacuate. Incident Command may also order a tone and emergency announcement of evacuation through dispatch.

Company officers shall be able to account for the whereabouts and welfare of all crew members under their supervision.

The Emergency Radio Traffic announcement is designed to provide immediate notification for all personnel of a hazard that is about to occur, or has already occurred. The use of Emergency Radio Traffic should be initiated only when the hazard appears imminent.

Any firefighter has the authority to utilize the Emergency Radio Traffic Announcement when it is felt that a notable danger to personnel is apparent; however, considerable discretion should be applied to its use-Emergency Radio Traffic announcements become ineffective if over used.

When a severe hazard is imminent, the Emergency Radio Traffic process should be initiated. The initiator should describe the apparent hazard and order a positive response, usually evacuation of a particular area, according to the scope of the hazard.

If possible, the officers of those areas to be evacuated should request an acknowledgment of the Emergency Radio Traffic dispatch from the crew(s) to be evacuated.

Upon receipt of the Emergency Radio Traffic evacuation order, company officers will assemble their crews and promptly ex[t to a safe location, where all crew members will be accounted for. Shortly after the evacuation order, when all affected crews and crew

members are accounted for, the evacuation process is complete. At this time a more specific determination as to the reality and extent of the hazard can be made and efforts initiated to re-deploy or redirect attack.

Building evacuation generally involves a shift from offensive to defensive as an operational strategy. In such cases, Command must develop a corresponding operational plan and must communicate that plan to all involved personnel. This can be a difficult shift to complete as crews are committed to offensive positions. It is extremely important that everyone receives word that a strategic shift has been made.

Hazards of less than imminent nature can usually be handled by a consultation with Command. Officers and specialists should make a determination as to the nature and possible effect of the suspected hazard and advise Command so that he can make a more knowledgeable decision as to the proper course of action.

Crews retreating from interior positions often require hose line protection. This protection of firefighting personnel represents a major function of backup lines.

Search and Rescue

Search and rescue should be performed by an efficient, well planned procedure which includes the safety of search crew personnel. The object of search efforts is to locate possible victims, not create additional ones by neglecting the safety of the search crew.

Prior to entering the search area, all search crew members should be familiar with a specific search plan including the overall objective, a designation of the search area, individual assignments, etc. To develop and communicate a plan may require a brief conference among crew members before entering the search area. Individual search activities should be conducted by at least two or more firefighters when and where possible.

Officers must maintain an awareness of the location and function of all members within their crew during search operations.

When a search is conducted that exposes the search crew to fire conditions, particularly above the fire floor, the search crew shall be protected as soon as possible with charged hose lines.

Protective Clothing

The following guidelines for wearing protective clothing are policies that apply to ALL members.

Full Protective Clothing-Definition: Helmet with NFPA eye protection, turnout coat, boots with turnout pants, gloves, flash hood.

Full protective clothing shall be worn by all firefighting personnel while responding to all structural fire alarms. Helmets are not required for personnel riding inside an apparatus. When responding from quarters, all members shall dress accordingly prior to response. Gloves shall be worn when engaged in firefighting, overhaul, training with hose and ladders, when using hand tools, and any other situation where injuries to the hand are likely to occur.

Full protective clothing shall be taken on all calls, including training.

It is the intent of this guideline to ensure that no member shall cause a delay at any firefighting operation by not being fully prepared to engage in firefighting activities in a safe manner.

While operating at forest fire incidents, all members shall were leather work boots, gloves, and helmets. Full turnout gear is not required.

Gloves and helmets shall be worn when reloading trucks after calls and training.

While operating at EMS incidents, all members shall wear whatever protective clothing and equipment that is required to afford complete personal protection. When operating forcible entry equipment and tools, full protection shall be worn.

Gloves and eye protection should be worn while operating power equipment (i.e., rescue saws, chain saws, etc.).

Command may use discretion to regulate the use of protective clothing at situations where exceptions appear necessary. The use of protective clothing may compromise patient care when operating in close quarters. Full protective clothing shall be worn at all times when operating on the fire ground.

NFPA eye protection shall be utilized at any time the need for eye protection seems apparent and the SCBA face-piece is not required to be worn.

In specific situations for which no guidelines have been provided, the proper safety clothing to protect against all foreseeable hazards shall be worn.

Self-Contained Breathing Apparatus

It is the policy of the Appleton Fire Department that all members expected or likely to respond to, and function in, areas of atmospheric contamination, shall be equipped with, and trained in, the proper use and maintenance of SCBA and the personal alert safety system (PASS) device.

All certified SCBA personnel shall don air packs at all fire calls.

All members shall utilize the provided SCBA when encountering the following emergencies:'

• Below grade level;

• Contaminated atmosphere

• Situations where it is likely that the atmosphere may become contaminated

• Confined space entry

Resist the tendency to prematurely remove breathing apparatus during routine fire situations. Be aware of the respiratory hazards which exist in ordinary as well as extraordinary fire situations. It is generally true that carbon monoxide levels *increase* during overhaul, due to the incomplete combustion of smoldering materials.

Do not remove your SCBA until the atmosphere has been determined safe to operate in. Either use your SCBA or change the atmosphere.

The determination as to removal of breathing apparatus will be made by IC during routine situations. In complex situations, particularly when toxic materials are involved, the Safety Officer should be consulted.

Training

It is recommended that all personnel attend scheduled training meetings.

All personnel are required to attend 60% of all training meetings each year. Training reimbursement will be prorated if minimum attendance requirements are not met. Every effort should be made to attend scheduled training meetings. All training is important and may not reoccur for sometime. Missing the drill does not waive the need for members to have the training.

When smoke drills are conducted, ALL personnel shall wear full protective gear and SCBA while inside the hazard area. During the use of non-toxicsmoke the only personnel to be allowed in the hazard area without SCBA shall be the instructor and their designated assistants.

All live fire drills shall conform to NFPA 1403, Standard for Live Fire Training Evolutions in Structures.

If written exams are to be administered during or at the conclusion of any program, an alternative test shall be available to the students. This may be in the form of an oral exam, practical test of skills, or a private session with the instructor at which time the exam can be taken under the direct supervision of the instructor with such explanation as the students needs. Any exam may be repeated upon the request of the student.

Command Procedures

The following procedure outlines the SOPs to be employed in establishing command. Command procedures are designed to place into operation an Incident Management System to reduce the amount of confusion, duplication of efforts, and general chaos that often accompanies emergency scene operations.

The title *Command* shall refer to the member or officer in charge of the first arriving fire department unit at the incident scene.

Once Command has been established it will remain in effect until the incident has been terminated. NO alarm will be canceled until an officer has arrived and assumed Command. Command procedures shall be placed into operation at all incidents. Fire, medical, hazardous materials, investigations, single company responses, etc., as well as at any manipulative performance training session or demonstration.

Under this procedure it may be possible that any *member* of the department will assume the role of Incident Commander and remain in that capacity throughout the duration of the incident regardless of rank; firefighter, officer, chief officer, etc. Assumption of Command by chief officers shall be at their discretion.

The Incident Commander is responsible for Command functions throughout the incident. If the identity of Command changes, through Command transfer, the responsibility

shifts with the title. The term command in this outline refers jointly to both the person and the function.

Establishing Command

The first arriving officer at an incident scene shall assume Command (when deemed necessary) and remain in Command until Command has been passed, transferred or the incident is terminated.

Initial Report

The first arriving officer shall transmit a *brief* initial radio report to dispatch including the following:

1. Unit identification on the scene and announcement confirming assumption of Command.

2. Incident description: Building type, size, commercial/residential, corrected address if needed, etc. Vehicular accident, number of injuries Hazardous material leak, spill, fire Rescue situation

3. Fire condition: Nothing showing Smoke showing Working fire Fully involved

4. Action taken-brief description

Radio Designation

The radio designation "Command" will be used with a geographical description of the incident. This designation will identify the incident in progress and will be referred to as such throughout the incident. (Main Street Command, XYZ Restaurant Command, etc.)

Initial Command Responsibilities

1. Assume an effective Command position

2. Transmit a brief initial radio report
3. Evaluate the situation (size-up)
4. Develop a plan of attack
5. Assign units as required

Continuing Command Responsibilities

6. Provide continuing overall Command
7. Assign sectors as needed
8. Review and evaluate efforts, revise as needed
9. Request and assign additional units as necessary
10. Return units to service and terminate Command

The first five listed items are initial Command responsibilities. The continuing responsibilities stay with Command whether the initial officer remains in Command or Command is transferred.

For fire involving a warehouse, store, or other buildings in which food products are housed, the Department of Agriculture should be notified (287-3841, 643-2401, 549-3408). The exception to this is for restaurants, when notification should be made to the Department of Human Services (287-5674).

<h2 style="text-align:center">Command Structures</h2>

It will be the responsibility of Command to develop an organizational structure utilizing SOPs as soon as possible after arrival and implementation of initial tactical control measures. The size of the Command Structure will be dictated by the size and complexity of the incident. The ideal structure of a complex incident would include four levels.

1. Strategic Level (Command)
2. Control Level (Operations)
3. Tactical Level (Sectors)
4. Task Level (Companies)

When using master streams, bed gun, or fly gun the first step to successfully achieving an effective stream is apparatus placement. The apparatus should be placed in safe locations, considering:

Occupancy Factors

- Business
- Mercantile
- Public assembly
- Institutional
- Residential
- Industrial
- Storage
- Educational
- Current status
- Open/closed
- Value
- Size and nature of fire load
- Contents
- Time/status of property
- Occupied/vacant/abandoned/under construction
- Property conservation, profile probability of contents to damage, need for salvage

Life Hazard Factors

- Number, condition, location of occupants
- Incapacity of occupants
- Exposure to fire & toxic products
- Access to victims escape routes
- Commitment required for search and rescue
- Treatment needs
- Status of spectators
- Hazards to firefighters

Arrangement Factors

- Location and distance of external exposures
- Access to exposures
- Nature of their combustibility
- Most dangerous direction of spread
- Barriers
- Obstructions
- Capabilities and limitations of apparatus movement
- Nature of internal exposures
- Multiple buildings

Special Circumstances

- Time of day
- Day of week
- Holiday season
- Special event
- Seasonal factors
- Weather
- Strike
- Traffic conditions
- Riot
- Festivities
- Wind, rain, heat, cold, humidity and visibility

Fireground Resource

- Personnel and equipment at scene or available;
- Mutual aid response times
- Utilities
- Police
- Heavy equipment
- Outside resources
- Condition of personnel/equipment
- Red Cross
- Logistics support
- Breathing air
- Adequacy of Command/communications system
- Adequacy of water
- Location of supplemental water
- Sprinklers

- Standpipes
- Alarms

Fireground Action

- Effect of current action?
- Effect of Command?
- Is Command established and working?
- Has plan been forecasted?
- Is the plan still effective?
- Are victims safe?
- Is the fire stopped?
- Is loss stopped?
- Are forces operating safely'?

Tactical priorities identify the three separate tactical functions that must be completed in order to stabilize any fire situation. These priorities also establish the order in which these basic functions must be performed.

These functions should be regarded as separate, yet interrelated activities that must be dealt with in order. Command cannot proceed on to the next priority until the current function objective has been completed. Basic tactical priorities are as follows:

- **Rescue:** The activities required to protect occupants, remove those who are threatened, and to treat the injured.

- **Fire Control:** The activities required to stop the forward progress of the fire and to bring the fire under control.

- **Property Conservation:** The activities required to stop or reduce additional loss to property.

All three tactical priorities require somewhat different tactical approaches from both a command and an operation standpoint. While Command must satisfy the objective of each function in its priority order, it must, in many cases, overlap and "mix" the activities of each to achieve that sequential priority. Examples are the frequent need to achieve interior tenability with active fire control efforts before the primary search can be made. Another example would be the need to initiate salvage operations while active fire control efforts are executed.

Rescue

It is standard operating procedure to extend a primary search in ALL involved and exposed occupancies which can be entered. Command must structure initial operations around the completion of the primary search. Primary search means companies have quickly gone through ALL affected areas and verified the removal and/or safety of all occupants. Time is the critical factor in the primary search process. Successful primary search operations must be extended quickly during the initial fire stages.

The rescue functions that follow lengthy fire control activities will be regarded tactically as presenting a secondary search. Secondary search means that companies thoroughly search the interior of the fire area after initial fire control and ventilation activities have been completed. Secondary search should preferably be completed by different

companies than those involved in the primary search activities. Thoroughness, rather than time, is the critical factor in secondary search operations.

The completion of the primary search is reported utilizing the standard radio report: *"Primary Search Completed, All Clear."* It is the responsibility of Command to coordinate primary search assignments, secure completion reports from interior companies and to transmit the All Clear report to the fire department dispatch office. Dispatch will record the time of this report from Command.

The stage of the fire becomes a critical factor that affects the rescue approach developed by Command. The following items outline the basic Command approach to fire stages:

• In nothing showing situations or in very minor fire cases that clearly pose no life hazard, Command must structure a rapid interior search and report All Clear. The interior search for victims will also verify no fire.

• In smoke showing and working fire situations, fire control efforts must be extended simultaneously with rescue operations in order to gain entry and control interior access to complete the primary search. In such cases, Command and operating companies must be aware the operation is in a rescue mode until the primary search is complete, regardless of the fire control required. In working fire situations, a primary search must be followed by a secondary search.

• In cases of fully involved buildings or sections of buildings, immediate entry and primary search activities become impossible and survival of occupants is improbable. Command must initially report fully involved conditions and that he will NOT report an All Clear. As quickly as fire control is achieved, Command must structure what is in effect a secondary search for victims.

Command and operating companies cannot depend upon reports from spectators to determine the status of victims. Attack firefighters should utilize reports as to the location, number, and condition of victims as supporting primary search efforts and must extend and complete a primary search wherever entry is possible.

Command must consider the following factors in developing a basic rescue size-up:

Number, location and condition of victims
How long victims have been exposed and the effect the fire has had to this point

Capability of the firefighters to enter the building, remove and protect victims, and control fire

Command must make the basic rescue decision:

• Do we remove victims from the fire? or

• Do we remove the fire from the victims?

In some cases, occupants are safer in their rooms than moving through contaminated hallways and interior areas. Such movement may also impede interior firefighting. Command must realistically evaluate the manpower required to actually remove victims. in cases involving multiple victims, Command must call for adequate resources and quickly develop an organization that will both stabilize the fire and provide for the removal of the occupants.

Rescue efforts should be extended in the following order:

1. Most severely threatened
2. The largest number (groups)
3. The remainder of the incident area
4. The exposed area

Command must make specific primary search assignments to companies to cover specific areas of large complex occupancies and still maintain control of these companies until the entire area is searched. When primary search companies encounter and remove victims, Command must assign other companies to continue to cover the interior positions vacated by those companies.

All initial attack efforts must be directed toward supporting rescue efforts and hose lines must be placed in a manner to control interior access, confine the fire, and protect avenues of escape. Hose line placement becomes a critical factor in these cases. Command and all operating companies must realize that the operation is in a rescue mode. It may be necessary to operate in a manner that writes-off the structure in order to buy rescue time.

Normal means of interior access (i.e., stairs, halls, interior public areas, etc.) should be utilized to remove victims whenever possible. Secondary means of rescue (i.e., platforms, ladders, fire escapes, ropes, etc.) must be utilized in their order of effectiveness. Command must provide for the treatment of victims after removal. Multiple victims should be removed to one location for more effective treatment. Command should coordinate and utilize available paramedic capability and assign companies as required to an exterior Medical Sector.

Once the primary search has been completed and the All Clear transmitted, Command must maintain control of access to the fire area. DO NOT ALLOW occupants or others to enter the building.

The following items represent the SOPs that will normally be performed by engine and ladder companies. These basic functions will provide the framework for field operations for these companies.

Engine Company Functions

• Establish sufficient, uninterrupted water supply (i.e., lay & pump hose, operate nozzles)
• Search and rescue
• Protect exposures
• Confine fire
• Extinguish fire
• Conduct salvage and overhaul
• Perform ventilation and forcible entry as needed

Ladder Company Functions

• Forcible entry
• Extrication
• Raise ladders
• Provide fighting
• Perform salvage and overhaul

The first arriving engine and ladder companies will perform these functions as required unless otherwise ordered by Command. This does not limit a company to only its fisted functions. Every company will be expected to perform all basic functions within the limits of their capability and it will be the responsibility of Command to integrate these operation functions as required with the on-scene units.

The assignment of these basic operations to an engine or ladder company represent a standard plan for tactical operations designed to improve the effectiveness of all units working together. This plan should in no way limit the initiative of any members or officers and should enhance the decision making process by establishing a standard operational framework.

The objective of the staging procedure is to provide a standard system of initial placement for responding apparatus, manpower, and equipment prior to assignment at incidents. Effective utilization of this procedure:

- Prevents excessive apparatus congestion at the scene.
- Allows time for Command to evaluate conditions prior to assigning companies.
- Places apparatus in an uncommitted location close to the immediate scene to facilitate more effective assignment by Command.
- Produces more effective communications by virtue of reducing radio traffic during the critical initial stages of fire operations.
- Allows Command to formulate and implement a plan without undue confusion and pressure.

Staging

1. The assigned Chief Officer will respond directly to the scene. Placement should provide:

- Maximum visibility for the Fire Ground Commander
- Views of at least two sides of fire building
- Located to be easily identified outside of the danger area

2. The first engine company will respond directly to the scene and position itself to the best advantage.

Offensive

- Short of, or beyond the fire building
- For rapid line advancement
- Refrain from blocking fire apparatus access
- For long driveways, lay in a feed line/rural hitch from main access road
- Best location for ladder operations
- For removal of victims
- For ventilation
- To assist in rescue and fire control

Defensive

- In a safe location
- With a strong water supply
- For effective master stream operation
- To protect exposures

- To stop forward progress of the fire
- Make portable equipment readily available

All other units (regardless of alarm) will stage in their direction of travel, uncommitted. A position providing a maximum of possible tactical options with regard to access, direction of travel, water supply, etc., should be selected.

Generally, the second due engine company function will be to assure an adequate water supply for the attack engine. This company must ensure the best possible water supply to the attack engine. In rural situations, the second due engine will pump the rural hitch if applicable, setting up folding tanks and/or using tankers for supply. The objective in rural situations is to ensure a pumped water supply to the attack engine. This may take the form of pumping the rural hitch or relay operations. Should distances mandate a tanker shuttle, the third engine would provide an adequate, pumped source of supply from a static source. The ultimate water supply goal in a tanker shuttle would be to provide two sources of supply for tankers, providing a maximum of possible tactical options with regard to access and direction of travel.

Staged companies or units will, in normal response situations, report company number, staged, and their direction from the incident scene. ("Engine One Staged East") It may be necessary to be more specific when reporting staged positions.

It will be the responsibility of dispatch to acknowledge the arrival of the first arriving company and confirm that Command has been established.

Uncommitted Apparatus

At some incidents, such as a major emergency, it may be necessary to designate a parking area for uncommitted apparatus near the incident scene. The parking area should be close enough to the incident site to allow easy transfer of needed equipment to the scene. The parking area should in no way impede necessary access for ambulances or other units to the incident area.

Command Options

At incidents where a Chief Officer arrives first, his efforts will automatically be directed towards establishing a Command Post and carrying out the listed responsibilities.

The first arriving Company Officer must decide on an appropriate operational commitment for his/her company:

Nothing Showing:
These situations generally require investigation by the first arriving company. Normally the company officer and crew will respond utilizing the portable radio to continue Command.

Fast Attack:
Situations that require immediate action to stabilize, such as interior fires in residences, apartments or small commercial occupancies where a fast interior attack is critical, the officer will utilize the portable radio to remain in Command while participating in the firefighting operation. This type of operation does not exclude the officer of the responsibility for performing the listed Command functions. This operation should not last more than a few moments and will end with one of the following:

A. Situation is stabilized
B. Command is passed to the next arriving company
C. Command is transferred
D. Situation is not stabilized and the officer must remove him/herself to an outside Command position.

Transfer of Command

The following procedure should be followed when transferring Command:

1. The officer of the first arriving company will assume or pass Command.

2. A Chief Officer arriving first will automatically assume Command.

3. Chief Officers arriving after Command has been established may assume Command at their discretion. Transfer of Command under this circumstance is not automatic.

NOTE: This does not preclude the option of the first arriving Company Officer to pass Command to another Company or Chief Officer arriving with him or close behind. This may be by pre-arrangement or may be necessitated by circumstances.

Passing Command will be confirmed by *both parties*. Within the guidelines indicated above, the actual transfer of Command will be regulated by the following procedures:

1. Arriving Chief Officers assuming Command will communicate with the Officer being relieved by radio or preferably face-to-face upon arrival.

3. Command notifies KRCC of the transfer (for example, "Appleton Unit Two to Knox; Unit 2 has command.")

2. The Officer being relieved will brief the Chief Officer assuming Command indicating the following: A. General situation status:

• Fire location, extent, conditions, extension
• Effectiveness of control efforts
• Deployment and assignment of operating companies
• Appraisal of need for additional resources at that time

Public Information

It is the policy of the Appleton Fire Department to establish and maintain a positive operating relationship with the news media. This outline will establish a procedure to provide the news media with information normally requested from the fire department about fires and other incidents, to control the movement of media personnel for safety reasons, and to establish an operating framework for public information that will effectively integrate into the overall incident management system.

Standard Public Information Procedure

Command will be responsible for the management of public information at an incident. No firefighter or person affiliated with the Appleton Fire Department shall ever give out any information about any fire, rescue call, or any other situation that the department

has been involved in. This includes any radio, television, newspaper, or any other type of press or media, etc. The spokesperson will be the Chief only. The only exception would be in the Chiefs absence, in which case, it would be an Officer designated by the Chief

While at any scene, firefighters shall restrain from making *any* comments regarding the situation to anyone other than fire department personnel.

Police

A large number of incident situations involve some interaction, of a routine nature, between police and fire personnel. In complex situations, however, there is often a need for command level interaction between the two departments. In cases where this interaction becomes complex the Police Sector will coordinate all activities requiring coordination between the departments. Examples are:

• Traffic control
• Crowd control
• Evacuation-hazardous materials, etc.
• Crime Scenes-arson, bombings, etc.
• Persons interfering with fire department operations

At crime scenes, fire departments often operate in a supporting role to the police department, providing specialized equipment or expertise. All personnel must be aware of the police department's jurisdiction at such incidents.

Traffic Control

Dispatch will automatically notify the police department of the need for traffic control at working incidents. When the need for traffic control is urgent or complex, this should be reported to dispatch to be relayed to the police. Time will be saved if specific traffic locations are relayed. (Example: "Have Police Dept. close Searsmont Rd. from E. Sennebec to W. Appleton Rd.)

When special traffic control measures are needed, such as with hazardous materials incidents, the basic requirements may be relayed through dispatch with a request for a Police Supervisor to report to the Command Post.

Crowd Control

The police department will enforce a safety line as identified by the fire department. It is the responsibility of the police department to keep unauthorized persons outside this safety perimeter. Authorized personnel inside the safety perimeter are the responsibility of the fire department, including news media, utility personnel, etc. Command must identify the area to be controlled by the police department, keeping in mind the possible dangers of the situation and the area needed for operations.

Within the Safety Perimeter is a smaller area known as the "Hazard Zone." This is the immediate danger zone where only specifically assigned personnel with protective clothing and equipment are authorized. Control of this zone is a fire department responsibility.

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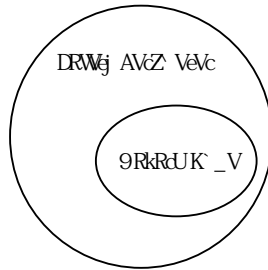
Persons Interfering with Fire Department Operations

When fire department personnel encounter interference from anyone at the scene of an incident, a specific request shall be made to the police department identifying the type of problem encountered and the desired action. If the situation reaches a point where fire department personnel are physically endangered by an unstable civil situation, fire department companies will withdraw until the police department can stabilize the situation. Unstable civil situations are a police responsibility and fire department personnel and equipment will not be involved with violent crowd control situations except in self-defense.

Evacuation

At incidents presenting exposure danger to large numbers of citizens, such as hazardous material incidents, it becomes necessary to use police officers to effect and maintain evacuation of an area.

Building Evacuation

At firefighting and other emergency operations, it often becomes necessary to evacuate a building or part of a building. This outline is intended to establish a standard system for evacuation.

- **Establish a plan:** Plan the evacuation and make assignments.
- **Evacuate persons in the greatest danger first:** The people in the greatest danger at a fire are those in the immediate area and those above.
- **Assign specific areas for evacuation:** Companies should be assigned, according to priorities, to specific areas, sectors or floors to evacuate and report **all clear.**
- **Identify safe evacuation routes:** Usually an evacuation is intended to remove occupants from a hazard. The objective should include moving occupants to safe areas by identified safe routes. Companies may have to be assigned to keep the evacuation routes safe (protective lines, ventilation, etc.). Use normal means of egress first (e.g., halls, stairs, elevators, etc.). Ground ladders, fire escapes, etc., are secondary means of egress. If the evacuation route is unsafe, consider leaving the occupants where they are until conditions can be improved.
- **Mark rooms after evacuation:** When evacuating a building, mark doors to areas which have been searched and evacuated to avoid duplication of effort.
- **Use alarm and communications systems:** Alarm systems are designed to warn people of the need to evacuate. Use these in conjunction with evacuation teams

when the need to evacuate is urgent. If the situation is not urgent, personal contact is less distressing than alarm bells.
- **Avoid panic:** Firefighters must consciously work to lessen occupant anxiety to avoid panic. Explain the problem and what needs to be done as accurately as possible.
- **Assign sufficient companies to the evacuation process:** Rapid evacuation of a building may require a major commitment of companies. The commitment of companies must be sufficient to provide for non-ambulatory evacuees and those needing physical assistance. Never leave evacuated occupants unattended.
- **Do not evacuate unnecessarily:** If conditions are such that they do not present a hazard, evacuation may be unnecessary. Send firefighters to evaluate conditions and judge the need for evacuation if the need is not obvious.
- **Authority to evacuate:** The fire department may order citizens to evacuate if there is significant danger.

Evacuation Areas

With a variety of possible situations it may be necessary to evacuate an area of the town. This may include hazardous material emergencies, potential explosions, major fires, or similar situations. An evacuation of anything more than a single structure requires a coordinated effort between the fire department and police at the scene to ensure that evacuation is rapid and complete without unnecessary duplication of effort. It requires a definite plan and a method of reporting progress.

Identification of the Evacuation Area

When evacuation of an area is indicated due to an imminent physical hazard (i.e., fire, explosion, toxic material, etc.) the size of the evacuation area will normally be determined by fire department Command at the scene in consultation with the Police Supervisor at the scene. The practical considerations of what resources are available and what degree of risk is involved will necessarily be factors in the determination of evacuation limits.

- Use the PA function of electronic sirens to alert citizens and/or door-to-door notification if needed. Do not hesitate to make noise and attract attention if the situation is urgent.
- Start with areas in most immediate danger first. Assign priorities following the degree of risk.

Public Information for Evacuation

Any major evacuation will require and benefit from complete public information notification to radio and television stations as quickly as possible to explain exactly what the situation is and what the people involved should do. Radio and television stations will make special announcements when requested by the fire department dispatch office.

Fire department dispatchers must also be informed of the situation to answer calls which can be expected from people wanting to verify information. Fire department dispatchers should alert area hospitals that they may be receiving casualties.

Evacuation Centers

At most situations it is desirable to have a location where evacuees can be directed. This should be a school, church, or public facility where evacuees can gather and find

temporary shelter in a safe location. This center should be located and identified as quickly as possible. When a long-term evacuation (more than 2-3 hours) is anticipated, contact the Red Cross to set-up temporary shelter. The Red Cross has a plan in effect to cover this situation.

Additional Situations

In addition to conventional evacuations, some situations may indicate different approaches:

- **Atmospheric hazard:** Some hazardous materials situations may pose a problem to persons exposed to outside air only. This may be caused by a wind-carried irritant vapor, or escaping gas. In this case the best alternative could be to advise people to stay indoors with windows closed with heating and air conditioning units shut down.
- **Advisory notification:** With some situations it may be necessary to notify citizens of the potential risk and suggest that they relocate for their own convenience.

Rehabilitation

No member will be required to continue emergency operations beyond safe levels of physical or mental endurance. This in no way is intended to diminish the initial fire attack aggressiveness. The intent is to establish a reasonable procedure to lessen the chance of injury resulting from long sustained incident operations. Members cannot be completely insulated from the hazards and difficulties encountered with initial aggressive attack operations.

The purpose of rehabilitation is:

- To protect the life and health of personnel committed to incident operations.
- To establish procedures for implementation and functioning of rehabilitation for incident operations.

Command will designate a location for a Rehabilitation Area (REHAB). This should be in an area away from the operational activity where protective equipment and clothing may be removed.

Welfare

It is the policy of the Appleton Fire Department to deal with the welfare of citizens affected by fire or other incidents. It is common for those involved with fire to need assistance with temporary housing, clothing, food, etc. Since the fire department is not equipped to MI. these needs, it is important that we coordinate the efforts of those agencies that can render the needed assistance.

It is extremely important, in most situations, particularly those involving injury or death, that fire department personnel provide for both the physical and emotional welfare of the victims and their relatives and friends. This means that to the best of our abilities, at any particular incident, we will be aware of the needs of all concerned and attempt to deal with them effectively, compassionately, and in a supportive manner. The details and extent of fire department involvement is discretionary and depends on the circumstances involved; the guidelines will be to provide as much assistance as possible within our capabilities.

At all incidents causing serious loss to inhabited dwellings, Command shall notify (via dispatch) the Red Cross or other appropriate agency of the situation. This notification should be given as soon as possible after the incident has been stabilized.

The welfare of the occupants and those affected by the fire shall be monitored by fire department personnel until the arrival of Red Cross personnel or other appropriate agencies.

Fireground factors offer a standard outline of basic items Command must consider in the evaluation of tactical situations. This outline should provide Command with a .checklist" of the basic items that are involved in size-up, decision making, initiating action, review, and revision on the fireground.

Fireground Decision Making

An effective Commander soon learns that he can only deal with a limited number of factors on the fireground. Within the framework of that limitation, the identification of the critical factors is extremely important. All factors are not critical in any one tactical situation. Command must identify the critical fireground factors that are present in each tactical situation. The outline of factors offers a framework for the process. Many times, we begin operations before adequately, considering the critical fireground factors. Size-up is a conscious process involving the very rapid but deliberate consideration of the critical factors and the development of a rational plan of attack based on those conditions. Attack is many times an instinctive action process that involves taking the shortest and quickest route directly to the fire. Action feels good at fireground situations while thinking delays action. Beware of non-thinking attack situations and non-thinking attackers. Fireground factors represent an array of items that are dynamic during the entire fireground process. The relative importance of each factor may change throughout the operation. Command must continually deal with these changes and base decisions on factor information that is timely and current. Beware of developing an initial plan of attack and sticking to the same initial plan throughout the fire, even though conditions continue to change. Effective fire operations require attack plan revisions that continually reconsider factors based upon information feedback.

In critical fire situations, Command may develop an initial plan and initiate an attack based on a incomplete evaluation of fireground factors. In such cases, Command must continue throughout the operation to improve the information decisions are based upon. Command will seldom operate with complete information during initial operations.

Most tactical situations represent a complex problem with regard to how Command deals with fireground factor information. There are factors that can be determined from the operating position on the outside of the structure and other factors that can only be determined from other operating positions-both inside and outside the structure. Fireground intelligence available to Command is developed utilizing an overlapping variety of information and factors. Information revolves around the three following means.

Visual Factors

These factors include those obvious to visual observation and those absorbed subconsciously. This visual information is categorized as to the type that can normally be gained by actually looking at a tactical situation from the outside. This form of intelligence involves the perceptive capability of Command.

Reconnaissance Factors

These factors include information that is not readily available to Command from its position on the outside of a tactical situation and must be gained by actually sending someone to check-out, go-see, look-up, research, advise, call, go-find, etc. This generally involves Command making a specific assignment and then receiving an informationoriented report.

Preplanning Factors

These factors include the intelligence that is gained from formal pre-fire planning and by general informal familiarization activities. Such intelligence increases the information initially available to Command from the outside of a tactical situation. This information arms Command with intelligence that it would normally have to assign to reconnaissance or do without.

Major Fireground Factors

There are eight major categories of factors. They are the fire, building, occupancy, life hazard, arrangement, special circumstances, resources, and action.

Fire Factors

- Size
- Extent (% of structure involved)
- Location
- Stage (inception/flashover/backdraft)
- Direction/ avenue of travel (most dangerous)
- Time of involvement (how long)
- Type and amount of material involved in the structure, interior finish, contents
- Type and amount of material left to burn
- Product of combustion liberation
- Access (can firefighters operate directly on fire)

Building Factors

- Size in area and height
- Age
- Interior arrangement/access
- How resistant to the effects of fire
- Condition-faults/weaknesses
- Value of building and contents
- Avenues of fire spread
- Openings
- Concealed spaces
- Utilities /type/ shutoff locations
- Security
- Special hazards

The most urgent reason for calling additional help is for the purpose of covering life safety-Command must develop a realistic rescue size-up as early as possible.

The term *Search and Rescue* should be used when structuring a primary search over the radio. All Clear should be used only as a completion report.

Fire Control

In an attempt to stabilize fire conditions, it is standard procedure to extend an aggressive, well placed and adequate offensive interior attack. The initial attack must be provided with the necessary support functions to reduce fire extension and bring the fire under control. A critical Command decision (both initial and ongoing) relates to the offensive/defensive status of the situation:

Offensive Strategy: Interior attack and related support activities directed toward quickly bringing the fire under control.

Defensive Strategy: Exterior attack directed to first reduce fire extension and then bring the fire under control.

Command must decide upon offensive/defensive operation based upon the following:

- Fire extent
- Structural condition
- Entry capability
- Ventilation
- Rescue operations
- Amount of resources

Basic Offensive Plan

- Take command
- First line-fast, aggressive interior attack
- Provide support activities (ventilation, forcible entry)
- Primary search
- Second line-back up first/cover rear
- Quickly evaluate success or lack of and react

Basic Defensive Plan

- Take command
- Evaluate fire spread/write off lost property
- Identify key tactical positions
- Prioritize fire streams
- Provide large, well placed streams
- Quick determination on additional resources (call for help)
- Surround and drown

Offensive Operations

Many times offensive/defensive conditions are clear cut and Command can quickly develop a decision that relates to that operation. In other cases, the situation is marginal and Command must initiate an offensive interior attack, while setting up defensive positions on the exterior. The effect of the interior attack must be evaluated and the attack abandoned if necessary. Operation changes can develop almost instantly or can take a long period of time. Command must be aware and responsive to such operation changes.

Command must consider the most dangerous direction and avenues of fire extension particularly as it affects rescue activities, confinement efforts, and exposure protection. It must then allocate resources based upon this fire spread evaluation. In some cases, the most effective tactical analysis involves an evaluation of what is NOT burning, rather than what is actually on fire. The unburned portion represents where the fire is going and should establish the framework for fire control requirements.

Offensive fires should be fought from the *interior-unburned side.* Interior capability is the principle offensive strategy factor. Initial attack efforts must be directed toward supporting primary search-first attack must go between the victims and the fire and protect avenues of escape. Determine the fire location and extent before starting fire operations. Do not operate fire streams into smoke.

Command cannot lose sight of the very simple and basic fireground reality that at some point the firefighters must engage the fire and fight. Command must structure whatever operations are required to put water on the fire. The rescue, fire control, extension, and exposure problem is solved in the majority of cases by a fast, strong, well placed interior attack.

Effective fire control requires that water is applied directly on the fire or directly into the fire area. Fire streams can be bounced of roofs and operated into smoke all day and night, and the fire will progress until it runs out of fuel. Command must establish an attack plan that overpowers the fire with actual water applications.

When fires involve concealed spaces (attics, ceiling areas, construction voids, etc.) it becomes very important that ladder companies open up and engine companies operate fire streams into such areas. Early identification and response to concealed space fires can save the structure. Officers who hesitate to open up because they don't want to damage the building many times must attempt an hour later to hold the fire to the neighborhood of origin.

In structural fires involving offensive operations at least one, and preferably two, ground ladder(s) will be placed to each story above the level of exit discharge, with priority given to the fire floor, the floor above the fire floor, and then the floor below the fire floor. Any ground ladder which is used as a means of entrance into the building shall not be relocated while those who gained entrance using it are still in the building.

Command must consider seven sides (or sectors) of the fire: Front, back, sides, top, bottom, and interior.

Where the fire is sizable, establish a safe and remote position to begin operations from, then move in on the fire. The basic variable relating to attack operations involve:

- Location/position of attack
- Size of attack
- Support functions

Command develops an effective attack through the management of these factors. Time becomes an extremely important factor with regard to attack operations. The bigger the attack, the longer it takes to get into operation; the more interior the attack is positioned, the longer it takes. Command must balance and integrate attack size and position with fire conditions and the resources available.

Tactical realities many times require that pure placement principles are violated. Such violations generally relate to the factor of time vs. pure placement. When such principles are violated, Command must implement back-up action to cover the "uncovered" area(s).

Lacking direction, when fire is showing, companies will many times lay hose and put water on the fire utilizing the fastest, shortest, most direct route. This process is called the *candle moth syndrome,* everyone wants to go to the flame. An attack from the burned side generally will drive the fire, smoke, and heat back into the building and the interior attack firefighters out of the building. The fastest place to put water on the fire is generally from the outside at the point where the fire is burning out of the building-the very worst application point most of the time.

When fire is burning out of a building and not affecting exposures, let it bum out, and extend an interior attack from the unburned side. It is usually venting In the proper direction. It requires discipline on the part of firefighters not to submit to candle moth temptations.

Command must develop a fire control plan of attack that first stops the forward progress of the fire and then brings the fire under control. In large complex fires, Command will not immediately have adequate resources to accomplish all of the attack needs it faces, at that point. Command must prioritize attack efforts, act as a resource allocator, and determine the response that will eventually be required. Accurate forecasting of conditions by Command becomes critical during this initial evaluation process. Anticipation is the key to successful fire operations.

Command must develop critical decisions that relate to cut-off points and must approach fire spread determinations with pessimism. It takes a certain amount of time to "get water" and the fire continues to bum while the attack is set up. Command must consider where the fire will be when attack efforts are ready to actually go into operation; if Command misjudges, the fire may burn past its attack/cut off position. Don't play "catch up" with a fire that is burning through a building. Project your setup time, write-off lost property, and get ahead of the fire. Setup adequately and overpower it.

Don't put water into burned property, particularly where there is unburned property left to bum. Many fire streams are directed into property that is already lost, many times at the expense of exposed unburned property. Write-off property that is already lost and go on to protect exposed property based on the most dangerous direction of spread. Do not continue to operate in positions that are essentially lost.

Defensive Operations

The decision to operate in a defensive mode indicates that the offensive attack strategy has been abandoned for reasons of personnel safety, and the involved structure has been conceded as lost (written off).

The announcement of a change to a defensive operation win be made as Emergency Radio Traffic and all personnel will withdraw from the structure and maintain a safe perimeter. Officers will account for the safety of their crew members. Interior lines will be withdrawn (or abandoned if necessary) and repositioned when changing to a defensive operation. Lines should not be operated directly into doorways or windows but should be backed away to positions which will protect exposures.

All exposures, both immediate and anticipated, must be identified and covered. The first priority in defensive operations is to protect exposures. The second priority is to

knock down the main body of fire. This may assist in the protection of exposures but does not replace it as a first priority.

Master streams are generally the most effective tactic to be employed in defensive operations. For tactical purposes, a standard master stream now of 500 GPM should be the guideline. Adjustments may be made upward or downward from this figure but it is very significant in the initial deployment of master streams. When the exposure is severe and water is limited, the most effective tactic is to put the water on the exposure.

Once exposure coverage is established, attention may be directed to knocking down the main body of fire. The same principles of large volume procedures should be employed.

The completion of bringing the fire under control is reported utilizing the standard radio reporting term: Fire *Under Control* It is the responsibility of Command to transmit this report to the fire department dispatch office. They *win* record the time of this report. Fire under control means the forward progress of the fire has been stopped and the remaining fire can be extinguished with on-scene resources; it does NOT mean the fire has been completely extinguished.

Apparatus Placement

Apparatus function should regulate placement. Poor placement can reverse this rule by limiting options and eliminating the functions of that particular apparatus. Firefighters operate with a natural inclination to place apparatus as close to the incident as possible. Many times this results in positioning of apparatus that is both dysfunctional and dangerous. The placement of all apparatus at the incident scene should be a reflection of one of the following:

• A standard operational procedure for first arriving companies

• A prearranged staging procedure

• A direct order from Command

• A conscious decision on the part of the Officer(s) in charge of the apparatus based on existing or predictable conditions

Water Supply

Generally, the second due engine company function will be to assure an adequate water supply for the attack engine. In urban areas, this company must ensure the best possible hydrant supply to the attack engine. If the first due engine failed to lay it's own supply line, then the second due engine must perform this task. The decision of whether to forward lay or reverse lay is that of the driver or officer on board, unless otherwise instructed. The line must be secured to a hydrant or to another stationary object (attack engine). The appropriate items should be left were they will be needed; large diameter spanner wrench must be at the hydrant, and a hose clamp must be positioned and engaged near the attack engine.

While laying a line, the apparatus should not be traveling more than 5 MPH and every effort should be made to lay the line on the same side of the road as the hydrant and not crossing over the road until reaching the incident scene.

In rural situations, the second due engine will pump the rural hitch if applicable, setting up folding tanks and/or use a nurse tanker for supply. The objective in rural situations is to ensure a pumped water supply to the attack engine. This may take the form of pumping the rural hitch or relay operation. Should distances mandate a tanker shuttle, the third engine would provide an adequate, pumped source of supply from a static source. The ultimate water supply goal in a tanker shuttle would be to provide two sources of supply for tankers, providing a maximum of possible tactical options with regard to access and direction of travel. If the supply line is greater than 1200 feet, a relay pump should be utilized. In some instances, such as up steep inclines, it may become necessary to have a second pumper closer than 1200 feet.

Firestream Management

It is the responsibility of an engine company assigned to a key position to provide for its own uninterrupted and adequate supply of water. *Provide* in this case does not mean the company must necessarily lay their own line. It is the company's responsibility to get water into their pump, by whatever means appropriate.

Hose line judgments generally involve the trade-off of time versus pure tactical placement. If a tactical placement principle is violated, backup action must be taken. Use the size hose line that will eventually be required from the beginning. If a large line is needed provide it from the outset. If there is any doubt go to the next larger size hose line.

When the decision is made as to which size fire stream to apply, select the size that is actually required. Beware of automatically going for the size most often used, or the size that is fastest/easiest. The natural tendency is to rely on one size fire stream.

When changing commitment from offensive to defensive and hand lines are removed from the interior, do not continue to operate them as hand lines-convert them to, exterior master streams. Give priority to water supply and application. The operating positions of such streams must also be evaluated-do not continue to operate into burned property.

Fire control personnel must consider the characteristics of fire streams:

- Solid Stream: More penetration, reach and striking power.
- Fog: More gross heat absorption/expansion, low reach.
- 1-1/2" Lines: Fast, mobile, low volume.
- 2-1/2" Lines: Big water, big knockdown, slow/immobile.
- Master Streams: Mostly stationary, slow to set-up, maximum water.

Choose the proper nozzle and stream for the operation.

Offensive attack activities must be mobile, as their movement slows down, they become more defensive in nature and affect. Offensive attack positions should achieve an affect on the fire quickly. Consequently, backup judgments should also be developed quickly. If water is applied to an offensive attack position and the fire does not go out-react. Back it up or back it out. The following items represent an index of the tactical effectiveness of hose lines:

- Size
- Placement
- Speed
- Mobility

• Supply

These factors also represent the options involved in fire stream management. Hose lines should be advanced inside fire buildings in order to control access to halls, stairways, or other vertical and horizontal channels through which people and fire may travel.

Basic Hose Line Placement

• The first stream is placed between the fire and persons endangered by it.
• When no life is endangered, the first stream is placed between the fire and the most severe exposure.
• A second line is taken to the secondary means of egress (always bear in mind the presence of men opposite the second line).
• Subsequent lines are used to backup first lines or other critical areas.
• Whenever possible, position hose lines in a manner and direction that assists rescue activities, supports confinement, and protects exposures.

Be cautious when operating hose lines in the same position for long periods of time. Conditions change during the course of operation. The effect of hose line operations must be continually evaluated. If the operation of hose lines become ineffective, move, adjust, or redeploy them.

Be aware of the limitations connected with nozzle operation through small openings. Mobility of such streams is necessarily limited and it is generally difficult to evaluate the effectiveness of such streams. Often walls, floors, etc. must be breached to operate. Realize the limitations of such situations.

Hose lines, particularly fog streams, pump as much air as they pump water. Think of them as fans when making line placement judgments and use the fan characteristics in a manner that provides for confinement and reduces loss. When entering basement fires do not open nozzles until you can see and are near the fire-do not use fog streams in basement fires.

When attack crews are commited to inside operations, **do not operate exterior streams into the building.** Do not combine interior and exterior attacks in the same building. It may be necessary to coordinate pulling crews out of the building while an exterior large stream knockdown is made. Know when to shut down nozzles. Many times, continued operation of large streams may prevent entry and complete extinguishment. Do not operate streams into smoke-fire location must be determined before water can be effectively applied.

When exterior streams are placed into operation, control the water being delivered. Shut down small streams and change to large streams equipped with solid stream tips. This allows for maximum penetration.

Have attack lines ready during forcible entry operations. Attack crews should be fully protected and supervised before forcible entry is effected. Officers must assume responsibility for the effectiveness of their fire streams. Firefighters must maintain an awareness of where streams are going and their effect. Periodic reports must be made to Command on their effectiveness or lack of spread and the potential for building collapse, a minimum of 30 feet from the fire building, and in a position suitable for elevated master streams.

Do not apply water to the outside of a roof and think you are extinguishing the fire. Such water application may offer effective exposure protection; but, if part of the roof is intact, it will shed water just like it was built to do and will prevent water from reaching the seat of the fire. Do not operate streams down ventilation openings during offensive operations. Be aware of who has water from the standpoint of company, position and function. Utilize available water to its full advantage.

Support Activities

Tactical support activities are those functions that assist active fire control and rescue operations. They generally include forcible entry, ventilation and the provision of access. Most confusion at an incident scene is the result of lack of such support functions and does not generally relate to a breakdown in basic water application activities. Command must cause these support functions to be completed in a timely and effective manner, Command must support the nozzle. When a fire building is lost it is usually because of lack of support, not lack of water. A fire building is ventilated for two principle reasons:

• To prevent mushrooming and limit fire spread

• To gain and maintain entry

Vertical Ventilation

Vertical ventilation is the most effective form of ventilation in working interior fire situations. Ventilation should be as close to directly over the fire as possible. The timing of ventilation becomes extremely important and must be coordinated with fire attack activities. Ventilation should be provided in advance of attack lines. Radio communications between the interior sector and roof sector facilitates this interaction.

Fire will burn out of openings in roofs naturally, regardless of whether the opening has been cut or the fire burns through. If the fire bums through the roof (defensive ventilation) it will generally do so in the best location-directly over the fire. If ladder companies cut the roof, they must locate ventilation openings in a manner that will support rescue activities and fire confinement. If openings are cut in the wrong places, the fire will naturally be channeled to them and expand loss.

When opening a roof, make the opening large enough to accomplish the purpose. The purpose of ventilation is to alter interior conditions. The best operating position to determine if a building requires ventilation and the location and tin-ling of that ventilation is from the inside sector. Interior and roof firefighters must communicate in order to coordinate the ventilation effort effectively.

Do not operate hose lines, particularly ladder pipes, through ventilation openings. Be cautious of hose lines to roofs. Operate roof lines only for the purpose of protecting personnel and external exposures.

Forcible Entry

Forcible entry involves a trade-off of time versus damage; the faster you force-the more damage you do. The more critical the fire, the less important forcible entry damage becomes and vise-versa. If the fire is progressing and you must get into attack from the unburned side, don't waste time trying to pick locks, force the doors.

The provision of access many times will determine if the fire is cut off and extinguished. Access activities generally involve pulling ceilings, opening up concealed spaces and voids, and the activities required to allow attack efforts access to operate on hidden fire. These operations cause damage to the fire building and must be done in a timely, wen placed manner. In such cases, do not hesitate-if size up reveals fire spreading inside a concealed space, get ahead of it, open up, and cut it off.

Be cautious of the premature opening of doors, windows, access openings, etc., before lines are placed and crews are ready to operate. Good timing requires effective communication between engine and ladder companies.

Additional Resource Management

The decision required to provide for adequate resources is an important factor for effective incident forecasting. Command must balance the tactical problems with the resources required to control all problems and stay ahead of the situation. Beware of crisis management, if situations grow at a pace faster than the response rate, Command ends up with an out-of-control situation and inadequate resources to control it.

Many times Command will reach a point where it begins to debate whether to call for additional help or not-in such cases call for it. Always opt for the extra in the "Should I or shouldn't I" stage. If the extra resource is not needed, it can easily be put back in service.

It is the continuing responsibility and function of Command to determine the amount of resources required to control the situation and to provide for the timely call for any additional resources required. The early call for additional help will tend to be consistently right.

Command must be aware of both the capability and response time of additional resources and effectively integrate these factors into calls for additional help. Some tactical situations move slowly, while others move very quickly. Command must call for additional resources at a rate that stays ahead of the incident. Some situations require the call for additional help upon knowledge of particular characteristics or conditions. In other situations, Command will initiate some control activities, ask for reports, and based upon receipt of information, call for additional companies.

As Command calls for additional resources, it must build a corresponding Management Organization Structure to manage the additional resources. Command cannot encounter a large incident situation, call additional help and then expect to effectively manage the additional resources in an initial alarm response operation.

- Call for help when an actual or potential incident situation exists and the life hazard exceeds the rescue capabilities of initial alarm companies.
- Call for help when the number, location, and condition of actual victims exceeds the rescue and removal, treatment capabilities of companies.
- Call for help when conditions become severe or the situation deteriorates significantly.
- Call for help when all companies have been committed and the incident is still out of control.
- Call for help when manpower has been depleted due to exhaustion, injury,

trapped, or missing. Command must forecast the effect the incident will have on personnel and provide for the support of such personnel in advance.

- Call for help when Command runs out of some resources (i.e., men, apparatus, water, equipment, management, etc.).
- Call for help when there is evidence of significant fire and companies are unable to determine the location and extent.
- Call for help when the commitment of companies is not effective.
- Call for help when companies cannot effectively perform early salvage operations.
- Call for help when the situation becomes so widespread or complex that Command can no longer effectively cope-the situation requires a larger management structure.
- Call for help when Command instinctively feels the need to summon additional resources. Don't disregard hunches.

Attack Teams

In many tactical situations it is desirable to group companies together as sectors to achieve more effective results. This consolidates the efforts of the companies toward tactical goals and makes Command more manageable.

The Attack Team is an extension of this concept. Companies are assigned at the incident in groups with a specific goal and/or geographic area assigned. The assignment of an attack team in the early stages of an incident naturally provides an effective sectorization which may be built upon as the incident progresses.

A standard attack team will consist of two engine companies plus a company assigned to ladder company functions. In some cases these teams will be created on the scene from single unit companies assigned by Command. The teams may be assigned at one time or built-up, starting with a single company and adding resources as they become available.

In the early deployment of companies at an incident, Command should try to identify tactical requirements in terms of attack teams and sectors. An attack team assigned to establish a sector should perform as an effective team unit. One of the officers Will assume the role of Sector Officer unless or until a designated Sector Officer is assigned by Command.

Sector Officers should structure requests for additional resources in terms of attack teams whenever possible. More effective teamwork will be achieved by this type of assignment. This does not mean that Command may not request single companies or special units when indicated.

The usual deployment for an attack team will involve a forward pumper supplied by a large diameter line from a pumper. With this configuration the officer of the "forward" engine company normally becomes the Sector Officer.

The deployment of initial assignment companies may be such that there is insufficient resource to place a full attack team at each urgent strategic position. Command may elect to assign a single unit to a position and assign subsequent arriving units to fill out the team as they arrive. In this case, the first engine would usually lay a large supply line to the forward position and a later arriving unit would pump the line and join the first crew at the attack location. A decision could also be made by Command to make one key position attack with a full attack team and leave less urgent positions for later arriving companies. This is a strategic decision which must be made by Command.

Property Conservation

It is standard procedure to commit whatever resources are required to reduce property loss to an absolute minimum. The activities that relate to effective property conservation require the same early and ongoing functions and aggressive action as both rescue and fire control. All firefighters are expected to perform in a manner that continually reduces loss during operation.

When the fire has been extinguished, shut down fire streams. Early recognition that the forward progress of the fire has been stopped is an important element in reducing loss. The earlier the salvage operations begin, the smaller the loss. When fire control has been achieved, Command must commit and direct companies into "stop loss" activities. Such activities generally include:

• Evaluating damage to overall fire areas

• Evaluating the salvage value of various areas

• Evaluating the personnel and equipment that will be required

• Committing the required companies to salvage operations

• Converting hose lines from fire control operations to salvage operations.

Where there is an overlapping need for both fire control and salvage to be performed simultaneously and where initial alarm companies are involved with firefighting while salvage remains neglected, call additional help and commit these companies to salvage functions. Commit the same overall sector resources to salvage operations as were devoted to rescue and fire control. Be aware that firefighters involved with rescue and fire control operations are generally fatigued by the time property conservation must be completed-this can result in poor work and injuries. Evaluate the condition of personnel and replace with fresh firefighters if needed.

<div align="center">

Fire Cause Investigation

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It is the responsibility of Command to provide for cause investigation of every fire incident. This must be accomplished after fire control activities and before taking salvage and overhaul actions which could hinder the investigation. When a fire investigator is on the scene or responding, companies shall delay nonessential overhaul until the investigator has time to survey the area. Salvage activities which stop further property damage should continue if they do not interfere with the area of origin and any possible evidence.

When delay in response by an investigator is indicated, Command shall assign personnel to protect the fire scene and maintain custody until the arrival of an investigator. If the incident is of a minor nature (no injuries, slight damage), and the cause can be readily determined, units on the scene will collect the information needed.

After achieving fire control, Command will release companies not required to complete the investigation and overhaul. In some cases, involving lengthy investigation time,

companies can return to quarters and later return to the scene to complete overhaul activities.

Command will turn over jurisdiction of the fire area to the investigator as soon as possible after the fire is stabilized. The investigator retains jurisdiction until he releases it back to Command. The investigator will request from Command any manpower or equipment needed to assist in the investigation. Command will respond to such requests to the extent possible under the prevailing circumstances. The investigator may inform Command that he/she intends to maintain custody of the scene for further investigation.

All personnel will cooperate with the investigator. Protection of the fire scene and preservation of physical evidence will be a primary concern once life safety is secured and fire control is achieved.

Destruction of Evidence

The misconception that evidence is destroyed in a fire has been the reason many incendiary fires have never been brought to the attention of the courts.

Evidence Preservation

Evidence is not destroyed in fires, except in rare cases. The form, shape, color, size, and weight of the evidence are certainly altered, but it can still be identified and placed in proper perspective.

The fire department must protect the scene from damage during:

- **Extinguishment:** Evidence can be washed out the door with misuse of fire streams.
- **Overhaul:** The most damaging time for evidence that might possibly be used by the fire investigator and police department in court.
- **Salvage:** This operation should not be too thorough until the investigation is completed, except to diminish the eventual loss.

The fire scene is the investigators laboratory. He or she must:
- Search it carefully and thoroughly
- Photograph everything, IN PLACE
- Diagram carefully
-

Evidence-Guard the Scene

- Post a guard
- Maintain custody until release of the scene
- Do not allow unauthorized persons to enter. The fire department has authority to close the scene, even to the owner
- Prevent personnel from unnecessarily walking through the fire area. Avoid walking on evidence

Evacuation Officer

At some situations a significant number of occupants may need to be evacuated or otherwise directed. It may be advantageous to separate this area of responsibility from firefighting to the Emergency Management Agency (EMA) Local Director. An Evacuation

Officer may be assigned from the fire department to accomplish this function and reduce Command's span of control.

Tactical Considerations for Fighting Rubber Tire Fires

Exterior tire fires, such as scrap tires, may be extinguished by using large volumes of water or high expansion foam. Bulldozers, front end loaders, and similar equipment can be used to move tires not yet involved in the fire, to create fire breaks in the tire pile, or to cover burning tires with soil.

Tactical Plan for Residential Type LP Gas Emergencies

Propane is a bottled gas that can be found virtually anywhere. The containers for this extremely dangerous gas range in size from small canisters used for household heating torches, to cylinders used for portable gas grills, to much larger industrial size tanks. Most propane is odorized so that leaks may be detected, however some propane is sold for use as a propellant for aerosol spray cans or as pure propane for laboratory and industrial settings. Propane intended for such usages does not have an odorant added and is sold and shipped as propane rather than LPG, the use of UN 1978 is a tip off that the product may not be odorized.

Large leaks often can be detected by the presence of a vapor cloud, but this vapor cloud does not necessarily indicate the extent of the leak. Propane is heavier than air and tends to collect in low spots. Two of the threats these products pose are:

Flashback: A spark may ignite the propane gas cloud and rapidly bum back through the cloud at approximately 15 feet per second

Bleve: Exposure of the tank surface to flame above the liquid level can rapidly deteriorate the canister's properties and, in the event of container failure, cause the rapid release of the contents in the container (mostly liquid state, which when converting to gas increases 270 times in volume). When this happens the tank becomes a rocket that can travel hundreds of feet, with the propane contents ejected violently as a large fireball.

It is important the precautions are taken and the methods used for controlling the incident are appropriate. When arriving at the scene do not allow the apparatus to pass through areas that may contain gas, such as downwind areas or topographical depressions. If there is a propane leak in a building don't ring the door bell, flip fight switches, electrical appliances or even the main switch at the fuse box. Do not allow smoking or flares in the area and extinguish open flames, such as pilot lights, if this can be done safely. An adequate water supply must be quickly established and an evacuation of the hazard area must be initiated. Propane can be directed and move about with hose streams. It is not soluble in water, but fog streams reduce the probability (or severity) of flash backs and can physically move the gas. All electrical or mechanical equipment used should be explosion proof. Once ventilation is underway attempt to locate and control the leak. Control often can be effected by closing the valve, crimping a copper tube, or plugging a hole or pipe with soft wood plugs. If the tank is exposed to fire for more than a few minutes or an unknown length of time, do not attempt to cool the container. Retreat and evacuate an area at least 2500 feet from the site. If it is possible the tank may be kept cool by hose lines, or the fire may even be extinguished, however this still poses the hazard of leaking gas which is now not being consumed by the fire.

Residential type containers, for portable gas grills, should be approached with extreme caution. If involved in fire, it is often not possible to stop the leak by shutting off the valve. The valve handle usually melts away quite rapidly and the rubber 0 ring inside of the valve is not entirely effective once melted. Establish an adequate water supply (at least 1000 gpm) and evacuate an area of 150 feet in all directions as well as neighboring structures located all sides of the site. With the smaller cylinders, hose lines must be applied with caution so as not to over turn the container, release liquid propane, or push the container around the site increasing the potential for exposure problems. The one nice thing about these smaller cylinders is the limited supply of fuel. One 20 lb. container can produce a sizable fire, but when exposed to direct name, impingement on the vapor space, will bum out in about 20 minutes, and there's always the possibility of a bleve.

Tactical Plan for Vehicle Fire Suppression

When being dispatched to a vehicle fire, the actions taken by the responding crew can dramatically effect the overall outcome of the operation. Decisions that are made can either create a positive image for the department, or severely tarnish the effectiveness of the organization as a whole. Listed below are some considerations that all personnel need to be aware of so that they operate efficiently and safely.

While riding to and from responses, all personnel are reminded to follow existing driver safety policy that is consistent with current SOPs.

Sizing-up the situation will produce the necessary strategy to effectively knockdown the fire. Important safety issues include:

Vehicle fire only
Vehicle fire and accident
Location and extent of fire
Protection of exposures with additional resources being dispatched
People injured or trapped

Possibility of a fuel spill, Electrical utility lines down Accident involving hazardous materials with and without a fire.

Upon arrival, the priorities of the company officer should follow a systematic approach to the rescue of individuals, the protection of victims, medical evaluation and treatment, the protection of exposures, and any existing danger to potential spectators. Specific attention should further address the number of personnel required on scene and traffic control considerations.

The initiation of fire attack should coincide with placement of fire apparatus. Staging and positioning of equipment should be performed from upwind/uphill to avoid personnel from standing in fuel leaks, to increase visibility during smoke and fire conditions, and to minimize exposure to possible chemical vapor hazards. All personnel will utilize full turnout gear which will include SCBA

Fire attack should include as a minimum, placing into position one 13/4" hand line with a combination nozzle. If sufficient personnel are available, a second 13/4" should be pulled, charged, and manned as a backup line. When approaching the vehicle to initiate fire attack, the attack line should be charged to provide a water curtain. The approach to the vehicle should be from an angle so that personnel aren't approaching the vehicle

headon, Special extinguishing agents include AFFF/ATC foam and dry chemical extinguishers specific for the class of fire.

Specific safety issues with regard to fire suppression include control of flammable vapors. Do not remove the fuel cap. Don't turn your back on the vehicle. Keep a charged hand line readily available and eliminate all ignition sources.

in the event of a leaking fuel tank, it is recommended that the opening is not enlarged. Make an attempt to stop the leak by using conventional methods and avoid sparks by utilizing non-sparking tools.

Other inherent safety considerations include: toxic fire gases, smoke, flame, battery acid, steam, dangerous cargo, exploding tires, catalytic converters, sharp objects, broken glass, hollow drive shafts, energy absorbing bumpers, compatibility of different fuels, high pressure hoses, combustible metals, electrical shock, air suspension systems, and air bag restraint systems. All personnel must recognize the specific dangers associated with any of the conditions listed.

It should be the responsibility of the company officer to preserve the scene for evidence so that fire/law enforcement officials can conduct a complete investigation concerning accidental/incendiary causes and situations where a violent crime may have been committed.

Tactical Plan for Matress Fires

After finding and extinguishing a mattress or over-stuffed chair cushion, the cushion should be rolled as tight as possible and removed through the burned section of the home, if possible. A charged hose line shall be present when the mattress is unrolled. This should help prevent pieces of the mattress from falling out and spreading the fire and keep the mattress from bursting into flames while being carried out of the building.

The Appleton Fire Department Dispatch alarm policy revolves around a timely and adequate dispatch of the closest companies required to control an emergency incident situation. Fire department dispatch personnel will dispatch companies based upon initial judgments arrived at through the information received and knowledge of the potential. The timely response and effective management of fire control and emergency medical situations represents the most immediate priority of the Appleton Fire Department. Upon receipt of adequate information, the fire department dispatch will dispatch the appropriate assignment and will continually upgrade the response requested until the incident is effectively stabilized.

Confined Spaces

According to OSHA, there is approximately fifty-four so called preventable confined space fatalities each year. The overall majority of these deaths and injuries are due to atmospheric conditions within the space. Of those deaths, 60% are would-be rescuers according to NIOSH.

Characteristics of a Confined Space

• Is large enough and so configured that an individual can bodily enter and perform assigned work.

- Has limited means of access and egress.
- Is not designed for continuous employee occupancy.

-ALL three criteria must be met for the location to be considered a confined space (according to OSHA) -

Confined spaces may include all of the following:

- Boilers pits
- Furnaces
- Diked areas
- Sewers silos
- Septic tanks
- Storage bins
- Tunnels
- Hoppers
- Manholes
- Vaults
- Vessels
- Digesters
- Pumping stations
- Tank cars
- Wells
- Cisterns

Some confined spaces are defined by OSHA as Permit Required Confined Spaces (OSHA 29 CFR 1910.146). In order for a space to be classified as a permit-required confined space, it must first meet the criteria of a confined space (listed above). Next, the space in question must contain one or a combination of the following confined space hazards:

- Contains or may contain a hazardous atmosphere
- Contains a material that could engulf an entrant
- Has an internal configuration of inwardly converging walls that could entrap or asphyxiate an entrant
- Contains mechanical or electrical hazards
- Contains any other recognized serious safety and health hazards

In the most general of terms, we as responders will consider confined spaces which we encounter as a result of emergency responses to be categorized as a permit required confined space. Obviously, if there is a need for a rescue, or for fire department services, then it typically follows that there is a hazard *present* which requires special consideration.

Confined Space Hazards include:

Hazardous Atmospheres
An atmospheric hazard exists when it may expose an employee to the risks of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from:
- Flammable gas, vapor, or mist in excess of 10% of its lower flammability limit (LFL)
- Airborne combustible dust at a concentration that meets or exceeds its LFL
- Atmospheric oxygen concentrations below 19.5% or above 23.5%
- Atmospheric concentrations of particular substances with special exposure
- Any other atmospheric condition

Engulfment Hazards
Engulfment is the surrounding or capturing of an individual by a liquid of finely divided loose solid substances (i.e., sand, grain).

Entrapment or Configuration Hazards
Configurations which promote these types of hazards have inwardly converging walls or a floor which slopes downward and tapers to a small cross-section.

Mechanical Hazards
Most accidents associated with these types of hazards are the result of not properly isolating the space.

Contamination Hazards
- Chemical reactions from products stored in vessels.
- Absorption: The lining of some product storage tanks has the ability to absorb liquids or liquefied gases. If the liquid level in the tank drops, the absorbed product in the lining can be released as a vapor or gas.
- Desorption: The reverse process of absorption, in which a product moves from outside a confined space inside one.
- Insertion: The process of introducing something into a confined space. This may be controlled or uncontrolled. Partial or complete engulfment may occur.
- Corrosive chemicals
- Oxidation/reduction reactions
- Decomposition of organic matter
- Cleaning agents
- Welding, spray painting, grinding, brazing, sand blasting
- Inerting with non-flammable gases

Fire and explosion hazards from organic hydrocarbon based substances Ignition sources from static electricity, hot electrical equipment Lack of proper training Lack of permit entry program Loose materials stored in tank Pyrophoric chemicals Lack of adequate safety control policies and practices. Other confined space hazards include:
- Noise
- Electrical equipment (not utilizing explosion proof equipment or ground fault circuit interrupters)
- Difficult access/egress
- Lighting
- Falling/tripping/insecure footing and falling objects
- Claustrophobia
- Critical incident stress

Evaluating Atmospheric Hazards
Possessing a sound knowledge of how confined spaces become contaminated is essential to the overall risk/benefit analysis profile. It is extremely important to fully understand proper atmospheric monitoring techniques so that acceptable entry conditions can exist prior to rescue operations.

General recommendations when conducting atmospheric testing:
- Utilize monitoring equipment that has been properly calibrated, maintained, and is deemed intrinsically safe.
- Trained operators who are skilled and knowledgeable with the use and limitations of the instrument should do the testing.
- Perform monitoring samples around the confined space opening for any hazardous

gases or vapor concentrations.
- Be aware that opening confined space hatches could change the atmosphere to a combustible/explosive situation. Remember to open the cover just enough to allow the test probe to take a sample.
- Oxygen concentrations must be analyzed first. Flammable gases or vapors must not exceed 10% of the LFL.
- Test for toxic substances measured in parts per million (ppm). Never use a standard flammable gas indicator to test for toxic substances.
- Sample all levels in the confined space for stratification of vapors or gases. The atmospheric envelope should be tested a distance of four feet in the direction of travel and to each side.

CONFINED SPACE ENTRY

Entry into a confined space is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space. Prior to entry into a confined space it is important to assess the hazards present.

Some atmospheric hazards can be addressed by the selection of the appropriate personal protective equipment. Take note, however that some atmospheric hazards require other precautions such as purging, ventilating, and/or neutralizing, to be taken before entry. Personal protective equipment alone may not be sufficient to protect the entrant from hazard(s).

Mechanical and electrical hazards also require special consideration. It is important that these hazards are isolated prior to entry into the confined space. Standard isolation procedures include the following:
- Lock out and/or tagging out all electrical circuits and valves.
- Completely deenergize all mechanical, pneumatic, hydraulic systems.
- Ensure all stored energy is removed from the equipment.
- Block any equipment that could have stored energy or gravity-activated parts.
- Guard machinery.

The basic duties of *authorized entrants* are as follows:
- Know the hazards that may be encountered during entry
- Properly utilize the equipment
- Communicate with the attendant, as necessary
- Alert the attendant when a dangerous situation or prohibited condition is recognized
- Exit the space where a hazard or prohibited condition arises, the attendant or entry supervisor orders evacuation, or an evacuation signal is activated

Providing an attendant outside a permit space is extremely important. This individual is charged with the responsibility of monitoring the status of entrants, monitoring the conditions within the space, and requesting rescue services. The following is a list of responsibilities for the attendant:

- Know the hazards that may be faced during entry.
- Be aware of possible behavioral effects of hazard exposure in authorized entrants.
- Continuously maintain an accurate count of entrants in the space.
- Remain outside the permit space during entry operations until relieved by another attendant.
- Communicate with authorized entrants as necessary and alert entrants of the need to evacuate.

• Monitor activities inside and outside the space.

The fire department shall be responsible for each individuals training pertaining to personal protective equipment and rescue equipment necessary for making rescues from permit spaces.

Respiratory and Retrieval Systems

The use of particulate air filters or air purifying respirators (APRs) may not provide the necessary protection for a confined space rescuer. The sole intended purpose of the APRs is for the device to provide protection if the filter is deemed compatible with the atmosphere the rescuer is working in. Prior to using the APRs, the atmosphere must be monitored. Entry control should establish in priority the following. First qualify, then quantify the level of ppm of that particular toxic vapor or gas inside the confined space to verify the ability of the APR to protect the rescuer. APRs are prohibited in immediately dangerous to life or health (IDLH) atmospheres.

Since rescue may require the lowering and raising a victim and rescuer into and out of a confined space, a retrieval system that complies with OSHA standards must be utilized to perform safely in a permit-required confined space. Proper retrieval equipment includes:
• Chest or full body harness
• Heavy-duty life-fine
• Mechanical winches
• Tripods
• Wristlets

Retrieval lines are extremely effective in assisting in the safe removal of victim(s) from permit spaces. It is required that each entrant must use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head.

Wristlets may be used in lieu of chest or full body harness if circumstances dictate that the use of a harness is not feasible or may create a greater life safety hazard. An example where wristlets may be used is when the entrant may need to be withdrawn through a small opening.

It has been documented that retrieval lines may pose an additional risk by creating an entanglement hazard. If this particular situation occurs, the following guidelines may be utilized to determine if retrieval lines are appropriate:
• A permit space with obstructions or turns that prevent pull on the retrieval line from being transmitted to the entrant does not require the use of a retrieval system.
• The individual(s) being rescued with the retrieval system would be injured because of forceful contact with projections within the space does not require the use of a retrieval system.
• A permit space that was entered by an entrant using an air supplied respirator does not require the use of a retrieval system if the retrieval line could not be controlled so as to prevent entanglement hazards with the air line.

When determining what type of retrieval equipment is needed for a specific permit entry space, an evaluation of the space must be carried out to determine the following conditions:
• Size and configuration of the confined space

- Size and location ' of the opening
- Any obstacles within the space
- Determining if the rescue of the entrant would be vertical or horizontal
- Potential hazards within the space

If situations arise where retrieval lines or harnesses cannot be worn, then it becomes imperative that an alternative system be in place to facilitate safety considerations. If for some reason an alternative system is not available, then entry is denied until an acceptable system is in place.

Below Grade Rescue SOP Outline

Emergency Rescue Guide for Trenches & Excavation

Enroute Considerations :

Respond Police Dept. for:
- Traffic and crowd control
- Evacuation or occupancy shut down assistance

Approach Site to Maintain Ground Load Hazard
- Last rain fall
- Current weather conditions

Immediate Considerations
- Condition of victim(s)?
- Completely or partially buried?
- Elapsed time?
- How deep?
- Local type of soil?

Hazards
- Water or other liquids present? (increases hazard)
- Condition. of shoring and angle of slope?
- Is spoil bank or other loading less than 2 feet from lip?
- Tension cracks present?
- Will seismic activity continue? (first ____ hours most hazardous)
- Any vibrations on-site or off-site?

Shut Down Sources
Control Site Access and Movement On-site
Immediate Actions

- Basic life support for victim(s)
- Have emergency air supply available
- Provide temporary protection for victims and rescue personnel
- Casing
- Trench shield or portable shield
- Mark level and area with powder extinguisher agent-if more cave-in possible
- Stage secondary rescue team as back-up

Immediate Follow-up Actions
- Establish a command post
- Control all utilities, toxic/flammable gases and liquids

- Emergency shoring
- Evaluate and organize resources, request as needed
- Establish a Logistics Base

Additional Follow-up Actions
- Establish a liaison with contractor supervisory personnel
- Stage relief personnel
- Establish press release information area (away from command post)
- Notify medical facility/coroner Request technical consultants?

Trench rescue and below grade rescue is a very specialized fire department operation, which requires specific equipment, training and experienced manpower. To operate in a safe manner, rescue personnel must understand the hazards associated with trench collapse and the intricacies of responding to such an emergency.

The most common type of trench accidents that rescue personnel may encounter are the following:
- Lip of the trench cave-in
- Lips of both sides cave-in
- One or both walls slough in
- An entire wall or both walls sheer away and collapse

- Workers trapped by heavy equipment or tracked vehicles
- Workers trapped by pipe, bedding material or spoil pile

Trench rescue can be classified into the following phases:

- **Preparation:** To effectively deal with a trench rescue, it is paramount that the department rely on community resources for specialized assistance. These specialized resources include lumberyards, building suppliers, heavy equipment contractors, and industrial facility personnel. A response guideline checklist should be handy for quick access of information.

- **Response:** Special information that needs to be obtained from dispatch includes exact location of the trench/excavation site, number of people involved, width and depth of trench, problems with equipment or entrapment hazards. Emergency vehicles should stage at a minimum of 100 feet. All traffic and other vehicles/equipment should be kept at a distance of 300 feet in all directions to help prevent a secondary collapse due to vibrations.

- **Assessment:** Initial size-up of the situation should follow current command procedures. The first arriving officer shall assume command and transmit a concise statement to dispatch headquarters. Be prepared to describe incident situation with appropriate action taken or needed. Next, try to determine the mechanism of the accident; i.e. cave-in, entrapment, heavy equipment or water. Are flammable liquids or gases present. Consider other potential hazards such as electrical hazards, exposed or broken utilities. Determine the number and location of victims. Access situation for likelihood of rescue or body recovery.

- **Hazard Control:** Secure the scene by controlling traffic and bystanders. Plan for making the lip of the trench safe. Prepare for air monitoring since this is classified as a confined space. Prepare the trench for safe entry by utilizing correct sheeting and shoring techniques.

The training program should consist of three levels.

- Level 1 - a four hour classroom session for all department members that addresses introduction to hazards and basic techniques.
- Level 2 - a specialized course consisting of 16 hours of live trench training for personnel most likely to perform rescue.
- Level 3 - this level covers 40 hours of intense training pertaining to sheeting and shoring, rigging, building shoring, size-up and tactics for shoring.

HAZARDOUS MATERIALS

Standard Operating Procedures for Hazardous Materials are applicable to ALL responders with affiliation to the Appleton Fire Department. All members must be knowledgeable and competent in the application of the following SOPs. All responding mutual aid companies will be subject to the departmental SOPs when operating at a hazardous materials incident. When operating independently, these mutual aid companies will be supervised by a member of the Appleton Fire Department who will assist them in the application of these SOPs while on scene.

The goal of the following procedures is to enhance the awareness and readiness of the Appleton Fire Department and its members in the discipline of hazardous materials, and in so doing, maximize the potential for successful outcomes at such incidents. With proper instruction and training and the application of the SOPs in both training and hostile missions, mistakes will be minimized, resulting in increased understanding and effectiveness.

All members are expected to be trained to a minimum competency level of Hazardous Material First Responder (8-hour course). Personnel operating at hostile hazardous materials incidents without this minimum training will be relegated to rear echelon support functions only. Personnel who receive training will be expected to perform tasks in training and hostile environments within the limitations of the training they have received.

Training received in hazardous materials will be credited to the individual if the following provisions exist:

Training is received through an "outside" course instructed by a state or federally certified Hazardous Materials instructor.

All training and certification will be based on the NFPAs Standard for Professional Competence of Responders to Hazardous Materials Incidents NFPA 472.

Currently, there are two recognized levels of hazardous materials expertise within the Appleton Fire Department. These levels include:
• Hazardous Materials First Responder-Awareness Level (8-hour course);
• Hazardous Materials-Operations Level (24-hour course).

Provisions and training material are available for personnel to achieve certification at the Hazardous Materials Technician level (80-hour course) and the Specialist Level (50-hour course). All course criteria must be met by students receiving instruction in any of the above training in order for certification to be awarded. All personnel must receive annual refresher training at the appropriate level in order to maintain certification.

Response to Hazardous Materials Calls

Each incident has the potential for exposure to hazardous materials for the responders. Recognition and identification of hazardous materials may be made by first arriving units, off-duty personnel, on-scene personnel, police, mutual aid units, civilians, site specific employees, or other affiliated personnel. In some instances, recognition and identification may not take place until units have been on-scene for some time. Units responding to all incidents must rule out the presence of hazardous materials in each situation. Additionally, first arriving units must take *every precaution* to insulate themselves from danger. Once a hazardous materials presence is detected, all responding units will be notified of the situation. The identifying unit will notify dispatch immediately and an appropriate alarm will be struck. If an Operations Level response or above is necessary to mitigate the incident, a hazardous materials response alarm will be broadcast. As with any other fire related incident, the first arriving officer must make a size-up and establish command. For rescue personnel thrust into this role, the crew chief of the ambulance must assume this responsibility. Information required from Command will be included in this document in the tactical section.

For all first arriving units, establishment of command and the maintenance of scene safety are the initial priorities. Incidents that are not classified as "large scale" incidents produce their own inherent dangers and first arriving units are cautioned not to take ANY hazard lightly and to always operate within the limitations of their training and resources. If the proper equipment is not available to on-scene units, do not attempt to circumvent its use. This increases the risk to responders and civilians alike and will likely expend a similar amount of time as it would have taken to acquire the appropriate equipment. Lastly, with respect to response, any first arriving units should take every precaution to avoid becoming part of the problem.

Dispatch

The Appleton Fire Dispatch will attempt to obtain any and all information from the person reporting a hazardous materials incident. The information should, whenever possible, include the material's name and/or type, amount and size of container(s), problem (i.e., leak, spill, fire, etc.), and dangerous properties of the materials. The dispatcher should stay on the telephone with the caller to gain additional information after the appropriate companies have been dispatched. Any additional information shall be relayed to responding companies after dispatch.

When a potentially serious situation is reported, a full assignment plus special units as indicated by the hazard will be dispatched. If it is ascertained by Command that the situation is a hazardous materials incident and that mitigation and/or stabilization of this incident will require the minimum to Operations Level trained personnel, a hazardous materials alarm will be broadcast.

If the call comes from a person with knowledge of the hazardous situation, have the person meet and direct the arriving units.

Dispatchers will immediately begin to research the situation using resources at their disposal (reference books, telephone contacts, etc.). The Appleton Fire Dispatch will obtain prevailing wind speed and direction from the weather station and announce them to responding units. Weather information may be obtained quickly from the United States Coast Guard. Units on-scene should verify and recheck this information.

Dispatchers should attempt to anticipate the needs of any hazardous materials situation and be prepared to aid Command with all information available.

Tactical

Hazardous materials incidents encompass a wide variety of potential situations including, fires, spills, transportation accidents, chemical reactions, explosions, and similar events. Hazards involved may include toxicity, flammability, radiological hazards, corrosives, explosives, health hazards, chemical reactions, and combinations of these factors. The following provides a general framework for handling a hazardous materials incident, but does not address specific tactics or control measures for particular incidents.

Every incident presents the potential for exposure to hazardous materials and the products of combustion of an ordinary fire may present severe hazards to personnel safety. The following procedure is specifically applicable to known hazardous materials incidents, but does not reduce the need for appropriate safety precautions at every incident. The use of proper level of Chemical Protective Clothing (CPC), turnouts and

SCBA shall be considered mandatory at all incidents involving known or suspected hazardous materials.

First Arriving Unit

The first arriving officer will establish Command and begin a size-up. *Mefirst unit must consciously avoid committing to a dangerous situation.* When approaching, slow down or stop to assess any visible activity taking place. Evaluate effects of wind, topography, and location of the situation. *Commandwill advise all other units to stage until instructed to take specific actionL* Units must stage in a safe location, taking into account wind, spill flow, explosion potential, and similar factors in any situation.

Size-Up

The objective of the size-up is to identify the nature and severity of the immediate problem and gather sufficient information to formulate a valid action plan. A hazardous materials incident requires a more cautious and deliberate size-up than most fire situations.

Command must make a careful size-up before deciding on commitment. It may be necessary to take immediate action to make a rescue or evacuate an area. This should be done taking advantage of available CPC or other protective equipment and with an awareness of the risk to fire department personnel.

Avoid premature commitment of companies and personnel to potentially hazardous locations. Whenever possible, utilize binoculars to assess the situation at a safe distance before taking any action. Proceed with caution in evaluating risks before formulating a plan and keep uncommitted companies at a safe distance. Identify a hazardous area based on potential danger, taking into account; materials involved, time of day, wind and weather conditions, location of the incident, and degree of risk to unprotected personnel. If possible, take immediate action to evacuate and/or rescue persons in critical danger, (See Evacuation Zone).

The major problem in most cases is to identify the type of materials involved in the situation, and the hazards presented, before formulating a plan of action. Look for labels, markers, and shipping papers. Ask personnel at the scene (i.e., plant management, employees, truck drivers, etc.). Utilize reference materials carried on the apparatus and have the Appleton Fire Dispatch contact other sources for assistance (CHEMTREC, manufacturers of materials, and other agencies) in sizing-up the problem.

Action Plan

Based on the initial size-up and any information available, Command will have to formulate an action plan to deal with the situation. Most hazardous materials are intended to be maintained in a safe condition for handling and use through confinement in a container or protective system. The emergency is usually related to the material escaping from the protective container or system and creating a hazard on the exterior. The strategic plan must include a method to get the hazardous materials back into a safe container, dispose of it, neutralize it, or allow it to dissipate safely, while keeping life safety a primary priority, and with the consideration that in some instances the only option available to the Incident Commander will be to minimize the risk to personnel (citizens, site workers, emergency personnel) by pulling back and attempting to allow the incident to run its natural course.

The specific action plan must identify the method of hazardous control and identify the resources available and/or required to accomplish this goal. It may be necessary to select one method over another due to the unavailability of a particular resource or to adopt a "holding action" to wait for needed equipment or supplies.

The Action Plan Must Provide For
- Safety of citizens
- Safety of firefighters /responders
- Evacuation of endangered area if necessary
- Control of situation
- Stabilization/neutralization of hazardous materials, and/or;
- Disposal or removal of hazardous materials, equipment

Avoid "experimenting" with techniques or tactics. Many times it is necessary to evacuate and wait for special equipment or experts to arrive.

EVACUATION AND HAZARD ZONES

A hazardous materials incident has four zones associated with the scene. These zones are assigned and depicted below.
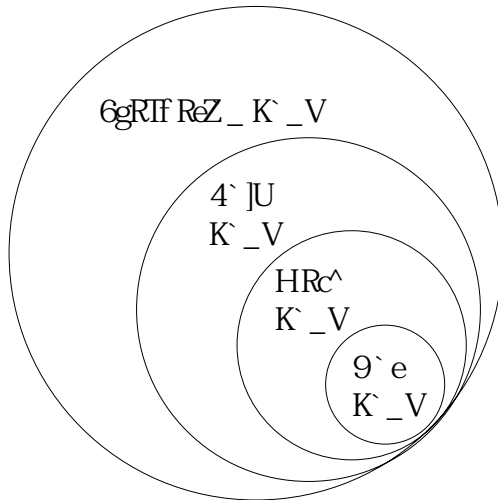
Evacuation Zone

The evacuation zone perimeter will be determined by the Incident Commander based on the resources and on-scene information available. This zone will be determined as a "Safe Area" for civilian and non-incident personnel occupancy.

The evacuation zone's forward boundary (boundary closest to hazard) win meet or exceed the distance prescribed in DOT Guidelines. Any discrepancy in this distance, based on resources available, will be judged by IC. After initial evacuation and accountability

procedures have been completed, the status and further displacement of evacuees and the evacuation zone will be reevaluated based on the scope of the incident, prevailing weather, and any other special considerations. The forward boundary of the evacuation zone will also serve as the rear boundary of the hazard cold zone.

Police and other emergency personnel will cooperate to assume control of movement within this zone.

NOTE: When toxic or irritant vapors are being carried downwind, it may be more effective to keep everyone indoors with windows and doors closed to prevent contact with the material instead of evacuating the area. In these cases companies would be assigned to patrol the area assisting citizens in shutting down air conditioning and heating systems and evacuating persons with susceptibility to respiratory problems. With these hazards in mind, appropriate level of protection should be donned.

Hazard Cold Zone

The hazard cold zone perimeter will be determined by the Incident Commander based upon the resources and on-scene information available. This zone will be determined a "Support Area" for emergency personnel and incident-affiliated personnel. Support functions for hazardous materials incidents will take place in this zone. All personnel, regardless of affiliation, entering this zone will do so only with the approval of the Incident Commander. Rosters of personnel who enter this zone should be kept and all movements to and from this zone controlled and documented. The forward boundary of the hazard cold zone will also serve as the rear boundary of the hazard warm zone.

Hazard Warm Zone

The hazard warm zone perimeter will be determined by the Incident Commander based upon the resources and on-scene information available. This zone will be determined a "Decontamination and Accelerated Support Area." All personnel, regardless of affiliation, will enter this zone only with the approval of the Incident Commander. Rosters of personnel who enter this zone should be kept and all movements to and from this zone controlled and documented. In most cases, the personnel in this area should be confined to those organized to the stabilization of the "Entry Team" or incident itself. All personnel in this zone, regardless of affiliation, will don and stay donned in the appropriate CPC or other protective clothing prescribed by the Incident Commander. The level of protection should not be compromised until the Incident Commander gives the All Clear. The forward boundary of the hazard warm zone win also serve as the rear boundary of the hazard hot zone.

Hazard Hot Zone

The hazard hot zone perimeter will be determined by the Incident Commander based on the resources and on-scene information available. This zone will be determined the "Immediate Hazard Zone." Entry into this zone will be made by the hazardous materials entry team and other qualified personnel only. Their entry into this zone will be a coordinated action initiated by the Incident Commander only. Rosters of personnel entering this zone should be kept and all movements in and out of this zone should be controlled and documented. All actions of the hazardous materials entry team while in this zone should be monitored from an appropriate vantage point in the hazard warm zone. All personnel entering this zone will don and remain donned in the appropriate level CPC. At no time during entry and inhabitance of this zone, or in the decontamination area will this level of CPC be compromised. Chemical Protective Clothing level will be

determined by the Incident Commander. The perimeter of this zone will be centered on the "Immediate Hazard," as conditions permit. A marked and controlled point of entry and egress into the zone will be established from the hazard warm zone. This point of entry and egress will be known as the "Hazard Corridor." The decontamination area will precede this area in the hazard warm zone. ALL movements into and out of the hazard hot zone will occur through this corridor.

Use of Non-Fire Department Personnel

In some cases it may be advantageous to use non-fire department personnel to evaluate hazards and perform certain functionsfor which they would have particular experience or ability (i.e., chemists, physicians, technical experts, or incident organizational advisors).

When such personnel are outfitted with protective clothing and breathing apparatus, they must be made aware of the limitations and precautions necessary in their use. Fire department personnel with the necessary protective equipment must closely monitor and/or accompany such personnel for safety. Be aware that Command is responsible for the safety of all endangered citizens and personnel involved at any incident.

General Factors for Consideration

Due to the wide variety of situations firefighters may encounter in dealing with hazardous materials, these considerations will not attempt to provide specific guidelines on any one individual chemical or situation.

It is imperative that the first arriving fire department company determine what hazardous material(s) is involved, and how much, prior to taking action to stabilize the incident. Entering the scene to make positive identification in some cases, may be a considerable risk. The danger of explosives, leaking gas, and poisoning may be extreme.

Action taken prior to determining the product involved may be totally wrong and may severely compound the problem.

Transportation emergencies are often more difficult than those at fixed locations. The materials involved may be unknown, warning signs may not be visible, or obscured by smoke and debris, the driver may be missing or dead. DOT Hazardous Materials Marking Systems are often inadequate because some hazardous materials in quantities up to 1000 lbs. do not require a placard and there may be combinations or products involved with only a "DANGEROUS" label showing. Sometimes, only the most evident hazard is identified, while additional hazards are not labeled.

The following items may be significant to consider at any hazardous materials incident. Not all will be significant at any particular incident.

Cooling Containers
- Use adequate water supply
- Apply large streams to vapor space
- Apply water to the point of flame impingement
- Use unmanned streams
- Use natural barriers to protect personnel

Removal of Uninvolved Materials
- Move individual containers

- Move tank cars away from flame
- Cool containers before moving

Stopping the Leak
- Close valves
- Place plugs in openings
- Place container in upright position
- Use fog streams to approach leak

Apply Diluting Spray or Neutralize Agents
- Dilute water-soluble liquids
- Flush corrosives to reduce danger
- Use streams to absorb vapor
- Use water with caution on some materials

Constructing Dams, Dikes, or Channels
- Direct running liquid away from exposures
- Control run off from corrosive materials
- Use sand or dirt

Removing ignition Sources
- Start downwind
- Eliminate all sources of heat, sparks, friction

Calling for Additional Help and Equipment
- When their need is anticipated
- The actions taken by Command in the first few minutes of an incident affects the outcome more than any other single factor.

KRCC has a reference list of personnel and organizations that may be helpful during a hazardous materials emergency. These include:

Fire department personnel with particular experience or knowledge

Authorities in charge of landfills and dumps where hazardous materials may be disposed

Commercial chemical experts with experience in handling the disposal of most common chemicals
- Pesticide consultants and disposal teams with equipment to clean-up agricultural chemical spills
- Personnel from State and Federal Regulatory Agencies. These personnel should be contacted for incidents involving transportation of hazardous materials.
- Railroad information numbers
- Tank truck companies with defueling capabilities
- Radioactivity and n-Alitary weapons emergency contacts
- State Fire Marshal's Office
- Red Cross
- Civil Emergency Preparedness (CEP)
- Local Emergency Planning Committee (LEPC).
- State Police (should be contacted in all transportation accidents involving hazardous materials).

Training

All responders operating within a designated "Zone" at a hazardous materials incident will be trained to the acceptable performance level of the task they Will be expected to perform. Decontamination team members will be trained to the Hazardous Materials Operations Level, as defined by NFPA 471 & 472, at a minimum. All members will be expected to complete an annual refresher training program.

Decontamination

All decontamination procedures used by the Appleton Fire Department will be in accordance with Standards for Professional Competence of Responders to Hazardous Materials Incidents (NFPA 472).

The Decontamination Area

The Incident. Commander will determine the location of the decontamination area at all hazardous materials incidents. The decontamination area will be designated as the "Warm Zone" at all hazardous materials incidents. All decontamination will take place in the warm zone at the incident location, regardless of the severity of the hazard. Factors considered when choosing a decontamination area should include: wind &weather, topography, water availability, proximity to the hot zone, and location of groundwater exposures. The consideration of these factors will ensure the of the hazards to areas outside of the hot zone, and the security of the environment.

Decontamination Area Layout

When setting up the decontamination area, the following features should be provided:

- Clearly marked borders to deny entry to unauthorized personnel from outside the warm zone, will be set on all sides of the decontamination area, to include the hot/warm and warm/cold zone borders. These perimeters should be marked and easily identifiable to all personnel operating at the incident site.

- A corridor will be marked, extending from the beginning of the hot zone, through the warm zone to the warm/cold zone perimeter. This corridor will be utilized by the entry team personnel when exiting the hot zone as a pathway through the decontamination process. The decontamination stations will be located within this corridor. All personnel exiting from the hot zone will stay within the perimeters of this corridor. All decontamination procedures will take place within the perimeters of this corridor. Support functions for the decontamination area (i.e. spare cylinder station, spare equipment station, tool drop, monitoring equipment station) may be located outside of the corridor in an appropriate location with consideration to the decontamination area factors.

- The decontamination stations located within the corridor will have equipment for the containment of runoff placed on the ground throughout the length of the decontamination station. Equipment used for this purpose will be determined by the Incident Commander, based on the severity of the hazard. Additionally, containment receptacles (buckets, trash bags, sealing and overpack drums) should be placed on both sides of each decontamination area station.

- A warm zone support sector should be established to provide spare air cylinders to decontaminees and decontamination team personnel. This sector can also provide the decontamination area with extra containment receptacles or other necessary Items as dictated by the incident or Incident Commander.

- Decontamination stations will be spaced within the decontamination area at

regular intervals with regard to the severity of the hazard. The number of decontamination stations within the decontamination area win be at the discretion of the Incident Commander.

• Security within the decontamination area will be monitored on a constant basis. Personnel exiting the hot zone will do so on an individual basis at timed intervals. Personnel entering the warm zone after decontamination procedures have been initiated will do so only with the authorization of the decontamination team leader after consultation with the Incident Commander.

• Once decontaminated, personnel exiting the decontamination area win move directly into the cold zone and proceed to the EMS/Rehabilitation Sector. With regard to the severity of the hazard and the size of the incident, the number of personnel comprising the decontamination team and the level of decontamination necessary will be determined by the Incident Commander.

LEVELS OF DECONTAMINATION

With regard to the specific hazard involved, any one of six (6) levels of decontamination will be utilized. These levels are as follows:

• Level A: For EXTREME hazards
• Level B: For MEDIUM hazards
• Level C: For LIGHT hazards
• Level E: For ETIOLOGIC hazards
• Level R: For RADIOLOGICAL hazards
• Level W/R: For WATER REACTIVE hazards

A general synopsis of the procedures involved with each level of decontamination is provided.

Level A Decontamination

The decontamination team member, wearing appropriate level CPC, flushes decontaminee downwards from head to toe with copious amounts of low pressure water. Decontaminees CPC is then scrubbed, head to toe, by a decontamination team member using a soft bristle scrub brush with a solution of not less than 3% sodium tri phosphate soap. After this scrub is complete, the decontaminee is again flushed, head to toe. Chemical Protective Clothing is then removed by decontamination team member by rolling the suit onto itself (thus eliminating contact from the outside of suit with the decontaminee). All garments removed from the decontaminee are stored in containment receptacles. SCBA worn by decontaminee is stored on separate containment receptacle. Number of flush points in decontamination area will be determined by the decontamination team leader after consulting with the Incident Commander. Decontarninee should have CPC removed in a systematic process by decontamination team members ONLY. When ready to exit the decontamination area the decontaminee will then, and only then, remove the SCBA facepiece and cease breathing cylinder or supplied air. When possible, decontarninee should have station or civilian clothes removed and placed in containment receptacle. While in the decontamination area, personnel are prohibited from smoking, eating, drinking or touching exposed skin. Once decontamination procedures are complete, all containment receptacles are sealed and left, with all other contaminated articles, inside the warm zone.

Level B Decontamination

This procedure closely resembles the procedure used in Level A Decontamination. The type of CPC and equipment utilized by entry team and decontamination team members may be different. Decontamination stations in the decontamination area may be reduced, as may manpower requirements.

Level C Decontamination

This is done with a minimum of personnel in the decontamination area. It is utilized when the hazard is light. Decontamination stations within the decontamination area may be reduced to one (1). All garments worn by the decontarninee should be sealed in containment receptacles as prescribed above.

Level E Decontamination

This procedure mirrors the Level A Decontamination procedure. After Rushing the decontarninee with water, a 6% bleach solution is administered from a spray can to the CPC, boots and gloves included. All articles removed from the decontarninee should be placed in contaim-nent receptacles and sealed IMMEDIATELY. Once the decontaminee has removed their SCBA facepiece, a surgical mask will be placed on their face. Prior to securing from the decontamination area, all runoff water and affected terrain should be treated with the bleach solution. All contaminated articles should remain in the decontamination area in sealed receptacles. Upon return to quarters, decontaminees should shower, scrubbing entire body with soap and water, with particular emphasis on areas around the mouth and nostrils, and under fingernails. All hair should be scrubbed thoroughly. Decontarninees should avoid eating, drinking, smoking, or touching exposed skin until this step is completed.

Level R Decontamination

This is done in accordance with Level A Decontamination procedures with a few notable exceptions. The decontamination area is divided into two parts. Once exiting the hot zone or hazard area, the decontaminee is monitored using radiological monitoring equipment. If contaminated, the decontarninee is scrubbed with a detergent solution, and then flushed with water. The decontaminee then moves to the second part of the decontamination area, where they are monitored again. If any residual contamination is found, the decontaminee returns to the first part of the decontamination station and repeats the first step. All other steps in this decontamination procedure are consistent with Level A Decontamination.

Level W/R Decontamination

This is a procedure used with water reactive hazards. The set up in the decontamination area is identical to that used in a Level A Decontamination. Instead of water, a dry soft bristle scrub brush and vacuum cleaner are used together from the head down to the toes. Once stripped down to SCBA, the SCBA harness is slackened and cleaned behind the straps and backplate. All other procedures are consistent with Level A Decontamination.

Emergency Decontamination Procedures

In the event that a viable victim is found at the scene, or a team member should fall victim, the following procedures should be utilized:

- Remove the victim from the contaminated area into the decontamination area and ensure the victim is supplied with uncontaminated air or oxygen.
- Immediately wash with flooding quantities of water any areas of the body that may have been contaminated.
- If wearing SCBA, remove the backpack and harness assemblies from the victim, leaving the facepiece in position.

- Remove all clothes from the victim, where practical, and continue flushing with water.
- Remove victim to a clean area. Render first aid as necessary. Note all equipment used in treatment of victim.
- Notify medical facility and provide with as much information as possible about the hazard encountered.

Changing SCBA Cylinders in Decontamination Area

When changing SCBA cylinders within the decontamination area, the following steps should be followed:

- Flush empty cylinder and surrounding area of the decontaminee's back with copious amounts of water.
- Flush facepiece and breathing tube.
- Remove breathing tube and disconnect cylinder. Place empty cylinder in containment receptacle.
- Member removing cylinder should wear appropriate CPC and SCBA.
- Insert new cylinder. This should be done by an individual tasked to do only this to avoid possible contamination.

Decontamination for Decontamination Team Members

The theory behind decontamination is to minimize the hazards in a systematic and manageable fashion. Decontamination areas will be tailored to the size of the incident and the severity of the hazard(s) encountered. A large incident will have many decontamination stations throughout it decontamination area, spread over a larger area, than a smaller incident. As decontaminees pass from station to station, the hazard is minimized until they reach the cold zone. When the decontamination of entry team members is complete, the decontamination of the decontamination team will begin. Those decontamination team members closest to the hot or hazard zone will be decontaminated first. This procedure is consistent with Level A Decontamination procedures. Each decontarnination station, beginning with those closest to the hazard zone, will seal all containment receptacles and proceed through the remaining decontamination stations. The last decontamination station, theoretically in the area of lightest hazard, will decontaminate each other, assist each other in removing their garments, and move out of the decontamination area. All decontamination team members will follow the same procedures as the entry team upon exiting the decontamination area.

Securing Zones

Once all members have exited the decontamination area or warm zone, it will be declared SECURE, and dependent upon the hazard encountered, all equipment still inside the secured zones will be turned over to the appropriate cleanup/removal agency for further decontamination or disposal. The Incident Commander, based on the information available, will then make a determination about the status of the scene. If deemed too hazardous to inhabit, security should be posted to ensure NO UNAUTHORIZED ENTRY by any personnel. At the discretion of the Incident Commander, units may remain on-scene in standby status during clean-up and/or disposal of equipment, containment water, contaminants, or inquiry of environmental impact.

Termination

When the neutralization/stabilization of a hazardous materials incident has been effected, a systematic approach to releasing the scene back to its original status must be undertaken. In some instances, the only action taken by the hazardous materials response personnel may be to eliminate the immediate life safety risk to on-site personnel

and the surrounding community. This does not eliminate the risk, both short and long-term, to the site and the environment.

With the information available, and appropriate consultation with qualified personnel, the Incident Commander must decide whether to reopen the site or maintain the hazard area status quo. If the area remains status quo, security must be posted to ensure NO UNAUTHORIZED ENTRY takes place. In some instances, security personnel may be required to don, or have available, CPC in the event of wind or weather changes or any other change in hazard status. Monitoring equipment should be utilized to determine the severity of the hazard area and the level of contamination within this zone, where applicable, when determining the status of the site.

Once the site is determined habitable, All Clear status is assigned to the site. Dependent upon the severity of the hazard, periodic follow-up monitoring may be required of the site, or personnel working therein. All results of this monitoring, and/or any other subsequent follow-up activities, should be documented. If an outside agency is delegated the responsibility of site restoration after a hazardous materials incident, the release of such sites from hazard status will be done by the Incident Commander or the Fire Chief after inspection of the site is done upon completion of its restoration.

Medical Surveillance

All personnel who are expected to per-form functions at a hazardous materials incident which place them within the boundaries of the two forward-most zones (hot and warm) should be given baseline pre-incident medical evaluations. Records of such evaluations should be kept on file with appropriate steps taken to ensure confidentiality. Subsequent evaluations should take place on a semi-annual basis for all such employees. (See OSHA 1910.120)

Exposure

Any individual who becomes exposed as result of contact with hazardous materials should report this exposure immediately. Proper decontamination should take place whenever possible. If emergency decontamination is necessary, documentation of this procedure and why it was implemented should be noted. Medical Control should be notified immediately upon employee exposure with a description of the substance(s) involved, quantity, inherent hazards, and area of contamination. An exposure report must be filled out by a supervisor for the effected employee. This report must be updated periodically to account for short/long-term effects, follow-up evaluation and changes or lack of in the employee's status. Employees who become exposed must receive the proper decontamination and EMS treatment initially and Medical Control must be contacted expediently as the exposed employee may pose a significant exposure threat to others in the chain of contact. Company incident reports should reflect any and all employee exposures and subsequent transport to medical facilities.

Emergency Response List

The Appleton Fire Department shall take whatever action is deemed necessary in response to an incident involving a release of hazardous materials. The Fire Chief or the Senior Fire Officer at the scene shall become the Incident Commander. NO personnel shall be allowed to enter the incident area without appropriate protective clothing and equipment.

Initial Response

- Observe the situation from a safe distance, use binoculars if necessary.
- Note location and things affected (i.e., people, animals, environment, etc.).
- Check wind direction, prevailing weather, and position equipment and apparatus

upwind.
- Identify the source of hazardous material.
- Identify (or confirm) the chemical name and form (i.e., solid, liquid, gas).
- Refer to orange Emergency Response Guidebook (DOT) for initial response to hazardous materials incident for emergency response information.
- Report findings to dispatcher to notify other response agencies that might be involved.
- Determine the level of the incident with law enforcement and facility personnel.
- Initially determine which level of public protective action shall prevail.
- Establish the hazardous area-hot line, contamination control areas.
- Monitor and control the exposure of personnel to hazardous substances.
- Initiate public notification.
- Request appropriate mutual aid, resources, and support services.
- Establish a Command Post to coordinate all emergency and support activities.
- Designate an Incident Commander to be in charge of the Command Post.
- Rescue all injured persons.
- Maintain overall command of the emergency scene until the hazard is contained or until Command is passed effectively to another department/agency.
- Coordinate with facility personnel regarding appropriate actions and response for the situations.
- Monitor and control exposure of personnel to hazardous substances.
- Establish and maintain communications with the emergency operating center.
- Establish a staging area for incoming equipment, personnel, and materials.
- Shut off source of hazardous materials leak, if possible.
- Contain spill if possible.
- Remove contamination if possible.
- Decontaminate personnel and equipment.

Alerting via Dispatcher
- Receive alert notification
- Alert emergency response agencies
- Activate fixed warning devices
- Initiate mobile warning efforts
- Notify special care facilities and schools
- Notify surrounding jurisdictions
- Notify County/State authorities

Operating Procedures
For any incident, existing fire department SOPs and mutual aid agreements shall prevail, as needed.

Ongoing Incident Assessment
- Fire service personnel will provide incident assessment information from the field to the Incident Commander at the Command Post.
- Incident assessment information will be collected and forwarded to the EOC on a regular basis or as necessary.
- Identify potential problems associated with secondary- effects (i.e., fire, explosion, water or sewer contamination).
- Determine health hazard. Coordinate Emergency Medical Services.
- Determine when additional resources are needed and release them as soon as possible.
- **Continually update dispatch.** Involve CHEMTREC as required.
- Be cognizant of incident spreading across political boundaries and coordinate actions as required.

Incident Commander Checklist
- Verify report
- Check guidebook and consult with technical advisors (facility, DEP) to find out what protective actions are necessary (i.e., public warning and/or evacuation).
- Notify addition response agencies as needed
- See that local officials are notified
- Consider necessity of establishing a Command post
- Select safe area arid set up command post

Command Post Checklist
- Make sure the Command Post is staffed with adequate representation from all necessary emergency agencies that could assist in handling the incident.
- Check hazard vulnerability report to determine type of health and/or environmental hazard and impact area.
- Start gathering data on weather, wind direction, injuries, etc.
- Collaborate among response agency chiefs and facility technical representatives.
- Determine response level and initiate actions.
- Call CHEMTREC, 800-424-9300, with any further questions.
- Set up media information center.
- Take protective or precautionary actions as necessary. Consider whether evacuation or in-place sheltering is needed.
  Ensure protective actions for response personnel.
  Ensure that all personnel and equipment are decontaminated as required.
  Initiate containment or displacement techniques as advised by DEP. Check to make sure proper agency has been notified and is enroute.

Ongoing Incident Assessment
- Keep monitoring situation and ensure information is relayed to EOC if opened.
- Keep reevaluating response levels and actions.
- Call for assistance as needed.
- Determine any threats to water supply, sewerage treatment, and soil contamination.

Rescue Service Checklist (in Support Mode)
- Be aware of dangers at the scene.
- Take proper precautions when handling casualties.
- Coordinate with the Command Post.
- Coordinate support activities with response agencies as required.
- Establish decontamination and casualty collection points in a safe location.
- Assist fire department in decontaminating any victim exposed to hazardous material.
- Provide on-site treatment of victims and transportation to hospitals.
- Provide communications from rescue units to the hospitals for medical treatment information and assignment of patients to various hospital locations as directed.
- Provide medical screening and care at shelters if required.
- Monitor and control exposure of personnel to hazardous substances.
- Report ongoing assignments and equipment as required.
- Decontaminate personnel and equipment as required.

Organizations
- Fire department personnel
- Fire Marshall's Office
- Landfflls and dump sites pollution control

- Commercial chemical companies
- Pesticide consultants
- State and federal agencies
- Railroads tank truck companies
- Radioactivity and military weapons
- Evacuation
- State Police Department
- Sheriff s Office
- Civil Emergency Preparedness
- Red Cross
- FMC Chemist

Expert Contacts for Hazardous Materials Incidents
- CHEMTREC (chemicals and pesticides) 800-424-9300
- National Response Center (oil and hazardous substances) 800-424-8802
- Bureau of Explosives (explosives) 202-835-9500
- Center for Disease Control (Etiologic and Biomed material) 404-633-5313
- Dept. of Transportation (Office of Hazardous Materials) 202-426-0656
- US Coast Guard (Portland MSO) 800-424-8302
- US Coast Guard (So. Portland) 800-424-8302
- US Coast Guard (Rockland) 207-596-6666
- National Agricultural Chemical Assoc. (Pesticides) 513-961-4300
- Department of Defense (military items) 202-545-6700
- EPA (environment protection and clean up measures) 202-655-4000
- Department of Energy (radioactive materials) 202-252-5000
- Institute of the makers of explosives (explosives) 212-986-6920
- OSHA (Worker Safety) 202-561-2221
- Nuclear Regulatory Commission (NRC) (Radioactive Materials) 215-337-5000
- State Police (Traffic Control) 800-452-4664
- Maine Emergency Management Agency 800-452-8735
- DEP (spill containment and cleanup) 800-482-0777
- Department of Transportation 207-289-2551
- Poison Control (EMS Advice for chemical exposure) 800-442-6305
- Sheriff Department
- Emergency Management Agencies

Blood Borne Pathogens

Communicable Disease Policy Statement

This department recognizes that communicable disease exposure is an occupational health hazard. Communicable disease transmission is possible during any aspect of emergency response, including in-station operations. The health and welfare of each member is a joint concern of the member, the chain of command, and this department. While each member is ultimately responsible for his/her own health, the department recognizes a responsibility to provide as safe a workplace as possible. The goal of this program is to provide all members with the best available protection from occupationally acquired communicable disease.

Exposure Control Plan

The purpose of the exposure control plan is to identify those tasks and corresponding job classifications for which it can be reasonably anticipated that an exposure to blood, other body fluids, or other potentially infectious materials may occur; to establish a schedule for implementation of the department's infection control plan; and to identify the procedure for the evaluation of circumstances surrounding exposure incidents.

Roles and Responsibilities

Chief of the Department
The tasks of managing the department Occupational Health & Safety and Infection Control programs are delegated to appropriate staff officers and commiittees as noted below. The ultimate responsibility for the health and welfare of all members remains that of the Chief. The Chief will serve as the department's designated officer as required by the Ryan White Comprehensive AIDS Resources Act of 1990 (PL 10 1 -38 1).

Safety Officer
The Safety Officer, in addition to duties described in NFPA 1501-1987, will serve as cochair of the Infection Control Committee. The Safety Officer win assume the duties of the Infection Control Officer when the latter is unavailable.

Infection Control Committee
The Infection Control Committee consists of

- Chief
- Safety Officer
- Infection Control Officer
- Assistant Infection Control Officer

Department Infection Control Officer and Assistant
The department Infection Control Officer will be appointed by the Chief This person must have five or more years of recent fire/EMS experience. The department Infection Control Officer will:
- In conjunction with the Infection Control Committee, develop criteria for the purchase of infection control personal protective equipment and determine adequate stocking levels for each station and response vehicle.
- Evaluate possible member exposures to communicable diseases and report this to the Chief.

- Collect quality assurance data on the department Infection Control Program and report this to the Chief
- Notify the Safety Officer if quality assurance data indicate a safety hazard requiring immediate attention.
- Conduct spot inspections of on-scene and station operations to ensure compliance with department infection control policy
- Coordinate the immunization program with the Chief and maintain immunization records in the EMS Office.
- Maintain a confidential database of exposures and treatment given, in conjunction with the Chief.
- Provide technical expertise to the division of training in development of the infection control curriculum.
- Keep abreast of new developments in the field of infection control and make appropriate recommendations to the Infection Control Committee.

Training Officer
In addition to existing duties, the Training Officer is responsible for the development and delivery of a comprehensive infection control educational program which complies with OSHA Regulation 29 CFR Part 1910.1030. Technical assistance win be provided by the Chief and the Infection Control Officers.

Department Managers and Supervisors
Chief Officers and Company Officers will:
- Support and enforce compliance with the Infection Control Program.
- Correct any unsafe acts, and refer members for remedial infection control training if required.
- Mandate safe operating practices on-scene and in-station.
- Refer for medical evaluation any member possibly unfit for work for infection control or other reasons.
- Company officers will not allow new members to assume emergency response duties until initial medical evaluation, immunizations, and infection control training have been completed.

Members
All members will:
- Assume ultimate responsibility for their own health and safety.
- Always use appropriate PPE as the situation dictates.
- Report any suspected occupational exposure to communicable disease to their company officer.
- Report any diagnosis of communicable disease (occupational or nonoccupational) to the department Infection Control Officer.

Health Maintenance
Work restrictions for reasons of infection control may be initiated by a physician. These may be temporary or permanent. As an example, members with extensive dermatitis or open skin lesions on exposed areas may be restricted from providing patient care or handling and/or decontamination of patient care equipment.

All members will be offered immunization against hepatitis. The risks and benefits of immunization will be explained to all members, and informed consent obtained prior to immunization.

Any member may request serologic testing prior to hepatitis B immunization to determine if previous immunity exists. Members may refuse immunizations, or may

submit proof of previous immunization. Members who refuse immunization will be counseled on the occupational risks of communicable disease, and required to sign a refusal of immunization form. Members who initially refuse immunization may later receive immunization upon request. Any member returning to work following debilitating injury or illness or communicable disease (occupational or nonoccupational) Will be cleared by a physician or designee prior to resuming emergency response duties. The Chief will assume the maintenance of records in accordance with OSHKs CFR 29, Part 1910.1030. Member participation in the Infection Control Program will be documented, including:

- Name and SSN of member
- Immunization records
- Circumstances of exposure to communicable diseases
- Post-exposure medical evaluation, treatment, and follow-up

Infection control records will become a part of the member's personal health file and will be maintained for duration of employment plus 30 years. Medical records are strictly confidential. Medical records will be maintained under the direction of the Chief and will not be kept with personnel records. Medical records will not be released without the signed written consent of the member. Records of participation in member assistance programs or critical incident stress debriefing are considered medical records.

Members may examine their own medical records, and may request that copies be sent to their personal physician. Release of medical records to another physician will be made only with the signed written consent of the member. Abstracts of medical records without personal identifiers may be made for quality assurance, compliance monitoring, or program evaluation purposes, as long as the identity of individual members cannot be determined from the abstract.

Infection Control Training
All members providing emergency services will be required to complete an initial infection control training at the time of assignment to tasks where occupational exposure may occur and refresher infection control training at least annually thereafter. Training will be in compliance with NFPA Standard 1581 and OSHA Regulation 29 CFR Part 1910.1030 and 29 CFR 1910.134(b).

Station Environment
Storage, decontamination, and disposal areas:
- Under no circumstances will kitchens or bathrooms, be used for decontamination or storage of patient care equipment or infectious waste.
- Infectious waste storage areas will be marked with biohazard signs and win be maintained in accordance with all EPA and local regulations.
- Other contaminated materials will be stored in leak proof bags with appropriate biohazard markings and color coding.
- If outside contamination.of a disposal bag is a possibility, a second bag with identical markings will be placed over the first.
- All disposal of biohazard waste will be in accordance with EPA and local regulations and will be performed by an approved licensed contractor designated by the department.
- Any potentially contaminated uniform as well as lab coats will be bagged and sent to the laundry promptly.
- All linen used for patient transport is considered potentially contaminated. Contaminated linen will be exchanged by the medical facility receiving the patient. Contaminated linen will not be washed in station laundry facilities.

Disposable gloves shall be worn when handling potentially contaminated linen.

Kitchen Area
- Food preparations areas, counter tops, and cutting boards win be constructed of nonporous materials.
- Under no circumstances will any kitchen facility be used for the purpose of cleaning, sterilizing, disinfecting, storing, or disposal of any infectious material or waste.

Bathroom Area
- Disposable hand-drying materials will be used. Cloth towels will not be used.

Personal Protecive Equipment
Standards for personal protective equipment will be developed by the Chief and the Infection Control Officer. The department is responsible for the supply, repair, replacement, and safe disposal of infection control PPE. The Infection Control Officer and Infection Control Committee will determine proper stock supply levels of PPE both for stations and for response vehicles:
- The amount, type, and location of PPE will be standardized on all response vehicles.
- Available PPE (in addition to PPE for structural firefighting) will include disposable gloves, rubber gloves for disinfection purposes, full face shields, and leak proof disposal bags.

Selection and Use of Personal Protective Equipment
Emergency response is often unpredictable and uncontrollable. While blood is the single most important source of HIV and HBV infection in the workplace, in the field it is safest to assume that all body fluids are infectious. For this reason, PPE will be chosen to provide barrier protection against all body fluids. In general, members should select PPE appropriate to the potential for spin, splash, or exposure to body fluids. No standard operating procedure or PPE ensemble can cover all situations. Common sense must be used. When in doubt, select maximal, rather than minimal PPE.

Disposable latex gloves will be worn during any patient contact when potential exists for contact with blood, body fluids, nonintact skin, or other infectious material.

Gloves will be replaced as soon as possible when soiled, torn, or punctured. Wash hands after glove removal. When and where possible, gloves should be changed between patients in multiple casualty situations. Structural firefighting gloves will be worn in situations where sharp or rough edges are likely to be encountered. Heavy duty utility gloves may be used for the handling, cleaning, decontamination, or disinfections of potentially contaminated patient care equipment.

Facial protection will be used in any situation where splash contact with the face is possible. Facial protection may be afforded by using a full face shield. When treating a patient with a suspected or known airborne transmissible disease, face masks or particulate respirators will be used. The first choice is to mask the patient, if this is not feasible, mask the member(s). Face shields on structural firefighting helmets will not be used for infection control purposes.

Fluid-resistant gowns are designed to protect clothing from splashes. Structural firefighting gear also protects clothing from splashes and is preferable in fire, rescue, or vehicle extrication activities. Gowns may interfere with, or present a hazard to, the member in these circumstances. The decision to use barrier protection to protect clothing,

and the type of barrier protection used will be left to the member. Structural firefighting gear will always be worn for fire suppression and extrication activities.

Scene Operations

The minimum number of members required to complete the task safely win be used for all on-scene operations. Members not immediately needed will remain a safe distance from operations where communicable disease exposure is possible or anticipated.

Hand washing is the most important infection control procedure. Members will wash hands:
- After removing PPE
- After each patient contact
- After handling potentially infectious materials
- After cleaning or decontaminating equipment
- After using the bathroom
- Before eating

Hand washing with soap and water will be performed for ten to fifteen seconds. If soap and water is not available at the scene, a waterless hand wash may be used, provided that a soap and water wash is performed immediately upon return to quarters or hospital.

Eating, drinking, smoking, handling contact lenses, or applying cosmetics or lip balm is prohibited at the scene of operations. Patients with suspected airborne communicable diseases will be transported wearing a face mask or particulate respirator whenever possible. Ambulance windows will be open and ventilations systems turned on full whenever possible. Personal protective equipment will be removed after leaving the work area, or as soon as possible if contaminated. After use, all PPE will be placed in leakproof bags, color coded and marked as a biohazard, and transported back to the station for proper disposal. No medical information will be released on-scene. Patient confidentiality will be maintained at all times.

At conclusion of on-scene operations, all potentially contaminated patient care equipment will be removed for appropriate disposal or decontamination and reuse.

Post-response
Upon return to quarters, contaminated equipment will be removed and replaced with clean equipment. Supplies of PPE on response vehicles will be replenished. Contaminated equipment will be stored only in the decontamination area. Cleaning and decontamination will be performed as soon as practical. Disposable equipment and other biohazard waste generated during on-scene operations will be stored in the biohazard disposal area in appropriate leak proof containers.

Gloves will be worn. for all contact with contaminated equipment or materials. Other PPE will be used depending on splash or spill potential. Heavy-duty utility gloves may be used for cleaning, disinfection, or decontamination procedures. Eating, drinking, smoking, handling contact lenses, or applying cosmetics or lip balm is prohibited during cleaning or decontamination procedures. Disinfection will be performed with a department-approved disinfectant or with a 1: 100 solution of bleach in water. All disinfectants will be tuberculocidal and EPA approved and registered. Any damaged equipment will be cleaned and disinfected before being sent out for repair.

The manufacturer's guidelines will be used for the cleaning and decontamination of all equipment, unless otherwise specified.

Work surfaces will be decontaminated with an appropriate disinfectant after completion of procedures, after spillage, contamination with blood, or potentially infectious materials. Seats on response vehicles contaminated with body fluids from soiled PPE also will be disinfected upon return to the station.

Contaminated structural firefighting gear (turnout coats/bunker pants) will be cleaned according to manufacturer's recommendations found on attached labels. Normally, this will consist of a wash with hot soapy water followed by a rinse with clean water. Turnout gear will be air dried. Chlorine bleach may impair the fire-retardant properties of structural firefighting gear and will not be used. Contaminated work clothes, jumpsuits, t-shirts, uniform pants) will be removed and exchanged for * clean clothes. The member will shower if body fluids were in contact with skin under work clothes. Contaminated work clothes will be bagged and sent to the laundry. Under no circumstances will contaminated work clothes be laundered at home by any member.

Infectious wastes generated during cleaning and decontamination operations will be properly bagged and placed in the biohazard disposal area.

Post-exposure Protocols
ny member exposed to potentially infectious material will immediately wash the exposed area with soap and water or saline eye wash if the eyes are involved. Any member having an occupational communicable disease exposure will immediately report the exposure to his/her supervisor. Needlestick injuries will be reported to the infection control officer immediately. The member will fill out a communicable disease exposure report before completion of shift for any of the following exposures:

- Needlestick injury
- Break in skin caused by potentially contaminated object
- Splash of blood or other potentially infectious material onto eyes, mucous membranes, or non-intact skin
- Mouth-to-mouth resuscitation without pocket mask/one-way valve
- Other exposure that the member may feel is significant

The report will include details of the task being perfonned, the means of transmission, the portal of entry, and the type of PPE in use at the time. The supervisor will review the communicable disease exposure repor-t and forward it to the Chief and the Infection Control Officer. The Infection Control Officer will evaluate the report for exposure hazards. If a possible exposure occurred, medical evaluation by a physician or designee will be arranged by the Infection Control Officer no later than 48 hours post- exposure. If no exposure took place, the Infection Control Officer will counsel the member on exposure hazards. The Infection Control Officer will complete the communicable disease exposure report, indicating disposition of medical management, and file the report in the office of the Chief

The Infection Control Officer will perform of refer members for infection control retraining or for stress management counseling if indicated. Spousal counseling will be available.

The source patient will be traced to the receiving medical facility by the Infection Control Officer. The Infection Control Officer will notify the receiving facility that a communicable disease exposure took place, and request an infectious disease determination, as provided under the Ryan White Act of 1990. Request for consent to test the source patient for

HIV and HBV will be made. The source patient has the right to refuse such testing under present regulations.

The Chief will request appropriate diagnostic work-up and treatment of members with communicable disease exposures. Services will include long-term follow-up and member/spousal counseling.

Under the Ryan White Act, medical treatment facilities will notify the department Infection Control Officer of any patient transported by members of the department with a diagnosis of an airborne transmissible disease. When so notified, the Infection Control Officer will contact members involved and schedule medical evaluation with a physician.

The Safety Officer will assume the duties of the Infection Control Officer in his/her absence.

Compliance and Quality Monitoring

he Infection Control Officers and the Safety Officer will collect compliance and quality monitoring data including:
- Inspections of station facilities
- Observation of on-scene activities
- Analysis of reported exposures to communicable diseases.

The Infection Control Program will be reevaluated annually by the Safety/Infection Control Committee to ensure that the program is both appropriate and effective. In addition, the Infection Control Program will be reevaluated as needed to reflect any significant changes in assigned tasks or procedures; in medical knowledge related to infection control; or in regulatory matters.