

## SOP 5.00 SAFETY

**Safety -- NFPA 1001:3-1.1.1; 4-1.1** "Fire fighting is one of the world's most dangerous jobs, and accidents in this profession can result in costly losses -- the greatest losses being the death of a firefighter. Other losses may include lost manpower (due to injuries), damaged equipment (which is expensive to repair or replace,) and legal expenses. In order to prevent these losses, it is necessary to prevent the accidents that cause them. Reducing accidents will save lives and money.

The firefighter should be too smart and too professional to take unnecessary risks."

(Excerpts from pages 20-21 of *Essentials of Fire Fighting Fourth Edition*)

### 5.01 Fire Ground Safety

1. The intent of this procedure is to minimize fire ground confusion/congestion and more importantly to limit the number of personnel exposed to fire ground hazards to only those necessary to successfully control the operation. Individuals or crews shall be restricted from wandering about the fire ground or congregating in non-functional groups. If you have not been assigned to a sector or you do not have a necessary staff function to perform, report to staging and remain with your apparatus with your company intact.

In 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 fire ground perimeter. Self-standing master streams will be utilized wherever possible.

In situations 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 your actions with those of the opposing crew in an effort to prevent injuries.

Ground crews must be notified and evacuated from interior positions before ladder pipes or other exterior streams go into operation. Do not operate exterior streams, whether hand lines, master streams, ladder pipes, etc., into a structure (and just the immediate area) where interior crews are operating or live victims may be located. This procedure is intended to prevent injuries to personnel due to stream blast and the driving of fire and/or heavy heat and smoke onto interior crews.

When laddering a roof, the ladder selected shall be one which will extend at least 2'-3' above the roof line. This shall be done in an effort to provide personnel operating from the roof with a visible means of egress.

If possible, when laddering buildings under fire conditions, place ladders near building corners or fire walls as these areas are generally more stable in the event of structural failure.

When operating either above or below ground level, establish **at least** two (2) separate

escape routes/means where possible, such as stairways, ladders, exits, etc., preferably at opposite ends of the building or separated by considerable distance.

Many safety principles revolve around action that takes place on the fire ground.

For the purpose of Fire Department operations, the perimeter can be defined as the area inside an imaginary boundary that has been determined by safety considerations according to the foreseeable hazards of the particular incident. At a minimum, it will typically be the area within a distance equal to the tallest portion of the building, also known as the collapse zone.

The flexible boundary that determines the fire ground can be altered by various safety factors.

All personnel entering the fire ground perimeter shall:

1. Wear protective clothing
2. Have crew intact
3. Be assigned to a job

### **ALL OTHERS STAY OUTSIDE.**

#### **Sector Safety**

The safety of firefighting personnel represents a major reason for the fire ground sectorization. Division and Group leaders must maintain the capability to communicate with forces under his/her command so that he/she can control both the position and function of the companies.

Division and Group leaders and Company Officers shall be able to account for the whereabouts and welfare of all crews/crew members under their assignment.

Company Officers shall insure that all crew members are operating within their assigned sector only. Crew will not leave their respective sectors unless OK'd by the Division/Group leader.

When crews are operating within a division or group, Company Officers shall keep the Division/group leader informed of changing conditions within the sector area, and particularly those changing conditions which may affect the safety of personnel.

Hazards that will affect only a specific sector area should be dealt with within that sector and not necessarily affect the entire operation.

In an effort to regulate the amount of fatigue suffered by fire ground personnel during sustained field operations, Company Officers should frequently assess the physical condition of their crew members. When a crew member exhibits signs of physical or mental fatigue, that member should be reassigned to Rehabilitation if possible. If no Rehabilitation area has been set up, then definitive action will be taken to establish the area. To be reassigned to Rehab, Company Officers shall request reassignment from their division or group leader. The

Company Officer's request should indicate the crew's position/condition, etc., and need for rehab. Companies should remain intact when reporting to or leaving Rehab.

It is the ongoing responsibility of Command to summon adequate resources to tactical situations to effectively stabilize that situation, and to maintain adequate resources during extended operations to complete all operational phases.

The rotation of companies will be utilized by Command during extended operations to provide an effective ongoing level of personnel and personnel performance.

It is the intent of this policy to reduce the fatigue and trauma experienced during difficult operations to reasonable (and recoverable) level and is in no way intended to lessen the individual and collective efforts expected of all members during field operations.

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## **STRUCTURAL COLLAPSE**

In recent times structural collapse has been the 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 tactical plan.

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

Regardless of the age and exterior appearance of the building, there is always the possibility that a principal structural supporting member 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 candidate 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 multi-story buildings or buildings with basements, 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 the Fire Officer from a safety standpoint as certain types of construction can be expected to fail sooner than others. For example: Under fire conditions lightweight truss and bar joist roof construction can be expected to fail after minimal fire exposure. There is NO reliable rule as to how long such a structure may last, so it must be assumed that if it is exposed to fire, and cannot be immediately cooled and extinguished, collapse is imminent.

### **Tell Tale Signs:**

These are signs that a collapse may be imminent, but it must be remembered at all times that many collapses occur without any of these warnings at all.

1. Cracks in exterior walls
2. Bulges in exterior walls
3. Sounds of structural movement, creaking, groaning, snapping, etc.
4. Smoke or water leaking through walls
5. Flexible movement of any floor or roof where firefighters walk
6. Inferior or exterior bearing walls or columns, leaning, twisting, flexing. The following construction features or conditions have been known to fail prematurely or to contribute to early structural failure when affected by fire:
  - a. Large open (unsupported) areas - supermarkets, warehouse, etc.
  - b. Large signs or marquees which may pull away from weakened walls
  - c. Cantilevered canopies which usually depend on the roof for support and may collapse as the roof fails
  - d. Ornamental or secondary front or sidewalls which may pull away and collapse
  - e. Buildings with lightweight truss, bar joist, or bow string truss, roofs
  - f. Buildings supported by unprotected metal - beams, columns, etc.

Buildings containing one or more of the above features must be constantly evaluated for

collapse potential. These evaluations should be of major consideration toward determining the tactical mode i.e. offensive/defensive. Again, if any structural component is exposed to fire, and cannot immediately be extinguished and cooled, collapse must be considered a certainty.

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

Any member at the scene who sees signs of imminent collapse shall immediately order **evacuation** via on emergency traffic broadcast and sounding of hi-lo sirens and air horns on all apparatus. Command should be advised of the reason for the order after it is given and acknowledged by all crews in positions of potential danger, but it is not necessary to notify the IC or seek his/her permission to order the evacuation if collapse is imminent. The Division and group leaders of those areas to be evacuated should ensure that all of their crews receive and act immediately upon the emergency evacuation order.

Upon receipt of the emergency evacuation order, Company Officers shall assemble their crews and promptly exit to a safe location. ALL tools, hoselines, etc are to be abandoned except those needed to be able to exit, and evacuation is immediate. Once in a safe location, the Company Officer will again account for all crew members. Shortly after the evacuation order, division and group leaders will begin the process of accounting for all evacuated crews. When all affected crews and crew members are accounted for, and Command is notified of this, the evacuation process is complete. At this time a more specific determination as the reality/extent of the hazard can be made and efforts initiated to redeploy-redirect attack forces.

- See also the Personnel Accountability policy.

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 operating elements. This can be a difficult shift to complete as units are committed to positions in an offensive manner. It is extremely important that everyone gets the word that a strategic shift has been made.

Hazards noted of a less than imminent nature should usually be handled by a consultation of Command, Sector Officers and/or the Safety Officer, Company Officers or outside agency authorities. These officers or specialists should make a determination as to the nature and possible effect of the suspected hazard and advise Command so that he/she can make a more knowledgeable decision as to the proper course of action. Crews retreating from interior operations often require hose line protection. The personnel protection afforded to firefighting personnel in such situations represents a major function of such back-up lines.

## **SEARCH AND RESCUE**

Search and rescue should be performed according to an efficient, well planned procedure which has included the safety of search crew personnel

The object of the search effort 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 team members should be familiar with a specific search plan including the overall objective, a designation of the search area, individual assignments, etc. This may require a brief conference among crew members before entering the search area to develop and communicate the plan.

Individual search activities should be conducted by two or more members where possible.

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

A brief look around the floor below the fire may provide good reference for the search teams, as floors in multi-story occupancies usually have a similar layout.

Whenever a search is conducted that exposes search crews to fire conditions (particularly **above** the fire floor) the search team should be protected as soon as possible with a charged hose line, in order to insure a safe escape route.

If search personnel are operating without a hose line, life lines should be used when encountering conditions of severely limited visibility.

If searching above the fire ladders should be raised to as many windows as possible to provide emergency escape routes if needed.

A fire ground perimeter will be at the discretion of Command based on need.

Pumpers supplying water shall utilize hydrants outside the perimeter if possible.

Command and staff support personnel shall remain outside the perimeter area unless entering the area to assist with interior operations.

## 5.02 Evacuation Safety

### EVACUATION

Interior firefighting operations should be abandoned when the extent of the fire prohibits or the structure becomes unsafe to operate within. When such conditions become untenable, evacuate, regroup, recommunicate, and redeploy.

Our primary concern when a hazard which may affect the safety of fire personnel becomes apparent is the welfare of those personnel. In an effort to protect personnel which may suffer the adverse effects of such hazards such as structural collapse, explosion, backdraft, etc. a structured method of area evacuation must be utilized, one which will provide for the rapid! effective notification of those personnel involved, and one which will be able to accurately account for those personnel.

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

1. Imminence of the hazard
2. Type and extent of hazard
3. Perception of the area affected by the hazard

The emergency traffic announcement is designed to provide immediate notification for all fire ground personnel of a notable hazard that is either about to occur, or has occurred and will be the use of the High/Low tones on the siren.

The use of "*Emergency Traffic*" should be initiated only when the hazard appears to be imminent.

Any member has the authority to utilize the "Emergency Traffic" announcement when it is felt that a notable danger to personnel is apparent; however, considerable discretion should be applied to its use. Emergency traffic announcements become ineffective if overused.

When an imminent hazard has been realized, the emergency traffic process should be initiated. Usually either a Company or Sector Officer will be the initiator. The initiator should describe the apparent hazard and order a positive response, usually to evacuate a particular area or section, according to the scope of the hazard.

Access to this area will be rigidly controlled and only personnel with proper protective equipment and assigned activity will enter. All companies will remain intact in designated staging areas until assigned. Personnel will be assigned to monitor entry and exit of all personnel from the Hazard Zone. The Hazard Zone should be geographically described to all responding units if possible.

### EVACUATION ZONE

The Evacuation Zone is the larger area surrounding the Hazard Zone in which a lesser degree of risk to personnel exists. All civilians would be removed from this area. The limits of this

zone will be maintained by law enforcement personnel. The area to be evacuated depends on the nature and amount of the material and type of risk it presents to unprotected personnel (toxic, explosive, etc.).

In some cases, it is necessary to completely evacuate a radius around a site for a certain distance (i.e., potential explosion).

In other cases, it may be necessary to evacuate a path downwind where toxic or flammable vapors may be carried (and control ignition sources in case of flammable vapors).

## **SAFETY PROCEDURES Sectors - SAFETY SECTOR**

The recognition of situations which present inordinate hazards to fire ground personnel and the proper response to safeguard personnel from those hazards is of critical importance to all Fire Department operations.

Command has the responsibility to recognize situations requiring the implementation of a Safety Sector and to confirm the response of assigned personnel. Upon arrival at a working incident, assigned personnel (Safety Officer, or anyone assigned by Command) will automatically report to the Incident Commander and assume assigned responsibilities. Assigned duties include the following options at the direction of the Incident Commander:

1. As his/her aide, with time periods allowed as time and conditions allow to continue the monitoring of the Safety Sector.
2. Establish Safety Sector and preside over.
3. Any need of high priority that needs attention immediately in the Incident Commander's opinion. This would be preferably of a temporary nature until sufficient manpower can be utilized.

A Safety Sector shall be established at those incidents posing a high potential danger to personnel such as:

1. Fire complexity; i.e., most multiple alarm fires
2. Hazardous structural conditions, existing or potential
3. Hazardous materials and chemicals, etc.
4. Any other situation where a Safety Sector could be advantageous to the safety of the operation

## **SAFETY PROCEDURES / SECTORS - SAFETY SECTOR Continued**

The establishment of a Safety Sector or 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 and of each and every member to utilize common (safety) sense, and to work within the intent of established safety procedures at all times.

Safety Sector responsibilities are divided into two general areas: Safety procedures and Technical Safety.

1. Monitor condition of personnel for signs of exhaustion and effects of products of combustion or toxic materials.
2. Observe operations for proper observance of safety procedures and precautions by all personnel.
3. Assure proper use of protective clothing and equipment by all personnel in operating areas.
4. Observe general fire ground for unsafe or hazardous conditions and interact with Command Officers to take adequate precautions.

Responsibilities in the area of Technical Safety include:

1. Structural Safety: Observation of structural conditions which could present a safety hazard, including interaction with building safety and structural engineering experts.
2. Monitoring concentrations of toxic or explosive vapors and use of monitoring instruments.
3. Consultation with Command on handling of incidents involving hazardous materials, flammable liquids and other materials presenting unusual problems.
4. Consultation with command on handling of situations involving fire protection systems, mechanical equipment, collapsed structures and similar situations of a complex, technical nature.
5. Liaison with outside agencies and other departments in situations involving unusual hazards (sewer, electricity, gas, etc.).

Personnel assigned to the Safety Officer, recognizing a safety problem must take appropriate action to cause its correction.

The command structure shall be used to effect appropriate response to a safety problem.

When the urgency of the situation demands it, Safety Sector personnel have full authority to cause immediate action by direct order to personnel or by use of "Emergency Traffic."

Operating personnel receiving safety instructions from Safety Sector personnel shall immediately take appropriate action. Failure to comply will be subject to subsequent review in the critique.

## TACTICAL POSITIONING

Positioning of operating companies can severely affect the safety/survival of such companies. Personnel must use caution when placed in the following positions;

1. Above the fire (floors/roof)
2. Where fire can move in behind them
3. When involved with opposing fire streams
4. Combined interior and exterior attack
5. Where sector cannot control position/retreat
6. With limited access - one way in! out
7. Operating under involved roof structures
8. In areas containing hazardous materials
9. Below ground fires (basements, etc.)
10. In areas where a backdraft potential exists

The safety of fire fighting personnel represents the major reason for an effective and well timed offensive/defensive decision and the associate write-off by Command. When the rescue of savable victims has been completed, Command must ask "Is the risk to my personnel worth the property I can save?"

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

The intent is for personnel to utilize safe positioning where possible/available, in an effort to safeguard against sudden hazardous developments such as backdraft explosion, structural collapse, etc.

## 5.03 DRIVER SAFETY

See also SOP 2.06 Emergency Vehicle Operations

Under wet, foggy or any other hazardous weather or road conditions, Fire Department vehicles should react pessimistically to the conditions encountered and not exceed the posted speed limit.

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 red light intersections and negative right-of-way situations. Rule of thumb: "If you can't see, STOP."

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

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

We must respond and react according to the conditions encountered. Neither poor road conditions, nor inclement weather, nor the actions of others relieves the driver in the his/her responsibility.

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#### **5.04 Shop Safety**

Most firefighters' duties and activities center around the station, and a significant portion of their on duty time is spent there. Hazards in the fire station not only endanger firefighters but can also endanger visitors who enter the station. Visitors are the responsibility of the fire department while they are in the building. Therefore, safe conditions must exist to limit the possibility of accidents injuries.

Certain safety hazards are common to any fire station. Also, certain types of accidents are not limited to any specific location within a station. Improper lifting techniques and slip-and-fall accidents are two of the most common causes of injury. Although back strains are the most common injuries related to improper lifting and carrying techniques, bruises, sprains, and fractures can also result. Improper lifting techniques not only cause personal injury, but they may also end in damage to equipment if it is dropped or improperly handled. Back injuries have been statistically proven to be the most expensive single type of accident in terms of worker's compensation, and they occur with surprising frequency. A firefighter should not attempt to lift or carry an object that is too bulky or heavy for one person to safely handle but should get help to lift or carry it. Lifting and Carrying heavy or bulky objects without help can result in unnecessary strains and injuries.

Other common accidents are slips, trips, and/or falls. Numerous factors contribute to these types of accidents. A slip, trip, or fall generally results from poor footing. This can be caused by slippery surfaces, objects or substances on surfaces, inattention to footing on stairs, uneven surfaces, and similar hazards. These accidents can easily result in minor and serious injuries as well as damaged equipment. To prevent such accidents, it is important to stress good housekeeping. For example, floors must be kept clean and free from slipping hazards such as loose items and spills. Aisles must be unobstructed and stairs should be well lighted.

## **5.05 Tool and Equipment Safety**

Tools and equipment are vital to a firefighter's job. However, accidents can happen if the firefighter is not properly trained in the use and care of tools and equipment. Poorly maintained tools and equipment can be very dangerous and can result in costly accidents to firefighters in the station and at the emergency scene. NFP A 1500 stresses the importance of safety in every aspect of tool and equipment design construction, purchase, usage, maintenance, inspection and repair.

When working in a station shop or on the emergency scene, firefighters must use appropriate personal protective equipment (PPE). Using PPE is fundamental for safe work practices: Although PPE does not take the place of good tool engineering, design, and use practices, it does provide personal protection against hazards.

The most widely used tools in the station shop are hand tools and small power tools. Observe the following procedures when using hand and power tools:

Wear appropriate personal protective equipment.

Remove jewelry, including rings and watches.

Select the appropriate tool for the job.

Know the manufacturer's instructions and follow them.

Inspect tools before use to determine their condition. If a tool has deteriorated or is broken, replace it.

Provide adequate storage space for tools, and always return them promptly to storage after use.

Inspect and clean tools before storing.

Consult with and secure the approval of the manufacturer before modifying the tool.

Use spark-resistant tools when working in flammable atmospheres such as around a vehicle's fuel system.

### **HAND TOOLS**

Inspect all tools before each use to ensure that they are in good condition. This inspection may prevent an accident caused by tool failure. Home-made tool handle extensions, or "cheaters," are sometimes incorrectly used to provide extra leverage for wrenches, pry bars, and similar tools. The use of a cheater can overload the tools beyond its designed capabilities. This overloading is unsafe and can cause the tool to break suddenly not only while the cheater is attached but also later when the weakened tool is being used normally.

## **POWER TOOLS**

Grinders, drills, saws, and welding equipment are commonly found in fire stations. Improperly used, these tools can cause a serious or life-threatening injury. Whether the tool is driven by air or electricity, it has a specific, safe method of operation that must be understood and followed. Only those firefighters who have read and who understand the tool manufacturer's instructions should be allowed to use power tools. It is important for instructions to be accessible to firefighters.

Repairs should always be made by someone trained and authorized to properly repair the damaged tool. Depending on the situation, this person may be someone within the fire department or an outside equipment dealer and repair agent.

Any electrical tool not marked "double insulated" should have a three-prong plug. For firefighter safety, the third prong must connect to a ground while the tool is in use. Bypassing the a ground plug in any way opens the door to injuries or deaths from unpredictable electrical shorts.

## **POWER SAWS**

The most common types of power saws used by firefighters are rotary saws and chain saws. When improperly operated or maintained, a power saw can be the most dangerous type of tool a firefighter will use.

Following a few simple safety rules when using power saws will prevent most typical accidents:

Match the saw to the task and the material to be cut. Never push a saw beyond its design limitations.

Wear proper protective equipment, including gloves and eye protection. Avoid wearing loose, dangling clothing that may become entangled in the saw.

Have hoselines in place when forcing entry into an area where fire is suspected or when performing vertical ventilation. Hoselines are also essential when cutting materials that generate sparks.

Avoid the use of all saws when working in a flammable atmosphere or near flammable liquids. Sparks generated by the saw or the saw's hot muffler are ignition sources for the vapors.

Keep unprotected and unessential people out of the work area.

Follow manufacturer's procedures for proper saw operation.

Use caution to avoid igniting gasoline vapors when refueling a hot, gasoline-powered saw. It is best to allow the saw to cool before refueling.

Keep blades and chains well sharpened. A dull saw is far more likely to cause an accident than a sharp one.

## **SOP 5.06 Thermal Imaging Camera Use and Maintenance**

### **Background:**

The Argus Thermal imaging Camera (TIC) is an invaluable tool in firefighting and lifesaving efforts. However, for maximum benefit it must be employed properly, and be well maintained. It is not a substitute for good basic firefighting skills and sound tactical decisions on the fire scene.

### **Policy:**

The Argus TIC will be operated only by those personnel properly trained in its use and maintenance.

The Department owns two TIC's and one will be kept on the first due apparatus at each station.

Each camera will be kept in its case, with two rechargeable battery packs, and two "AA" size alkaline battery packs, with at least one spare 8-pack of alkaline batteries.

### **General TIC Information:**

This TIC is designed to aid firefighters in seeing through smoke and darkness. It is not night vision equipment, and does not rely on the existence of visible light. It also cannot replace good firefighting skills and sound decisions at the fire scene.

This unit is NOT considered intrinsically safe, and *must not be used in flammable or explosive atmospheres!*

According to the Manufacturer's specifications, this camera can tolerate 140 degrees for one hour, 212 degrees for 20 minutes, or 302 degrees for 15 minutes maximum. The tolerable temperature range for storage is 14 to 140 degrees. If the firefighters using the camera are experiencing heat stress, the camera is too, and should be taken from the environment.

The camera will detect images or objects that have temperature contrast with their surroundings at distances of about 3 to 98 feet. Warmer objects appear lighter in color than darker objects.

An automatic iris adjusts sensitivity, allowing very hot scenes to be viewed. This circuitry also protects the camera from damage. However, directing it at very intense sources such as the sun or welding arcs will still cause damage, and must be avoided. Also, directing it at a fire for any length of time may cause temporary overloading and the loss of function, and should be avoided. In a fire environment, attempt to "look around" the fire, keeping the fire just out of the field of view. It will not see past the fire anyway.

The sharpness and clarity of the image provided is related to the temperature of the object(s) in view and their thermal contrast with each other. Warmer environments provide more thermal/infrared energy, and thus sharper views and greater detail.

Glass, water, and plastic are not transparent to infrared, and in fact may reflect images, so this unit must not be relied on for looking through windows, water, or water streams. It may be used, though, to identify hot windows that would indicate fire within.

The unit cannot see through walls or buildings, but it can detect differences in temperature that may prove helpful in identifying warmer parts of the building's exterior or walls that would indicate fire within that area.

### **Use Procedures:**

Upon removing the camera from its case, a battery pack should be securely seated in the battery compartment, and the door closed and latched. It is recommended that AA alkaline battery packs be used on scene, and rechargeables for non-emergency and training situations.

Turn the camera on before entering any hazardous area, and be sure it is working properly, and shows full battery power on the power bar to the left of the screen (green bar graph all the way to the top of the display). If at any time the battery power approaches the red portion of the bar graph, there is five minutes or less life left in the batteries.

After power up, the camera goes through a self diagnostic and warm up period, and should be ready to use within about 30 - 45 seconds.

If during use the lens becomes contaminated with water or debris, it can simply be wiped clean.

### **Cleaning and Maintenance:**

Ordinarily no routine maintenance is required of these units. The TIC should be turned on during truck check to verify that it is working properly, and should be allowed to run for ten minutes or so each time. Rechargeable battery packs should be periodically changed out. In the charger, they should be ready for use upon arrival at a scene, but will lose most of their capacity in one week of storage if not charged during that time (hence the suggestion to use the alkaline packs on scene).

After use and prior to stowage, the camera should be wiped clean and dried. If dirty, soap and water can be used to clean the exterior. It must be fully dry before storing.

If there are any questions, refer to the owner's manual in the storage case.

### **Operational Issues:**

With two cameras in the Department, it is hoped that most fire calls will have two on scene. Any interior crew should have a camera if at all possible. If attack and search crews are not the same crew, the search and rescue crew will have priority. The second camera could then go to the attack crew when available. If only one interior crew is working, the second camera should be provided to the Incident Commander to use in doing scene size up. In so doing, it is to be kept immediately available to the Rapid Intervention / Firefighter Assist team in case of an emergency requiring rescue of fire service personnel inside.

When doing fire attack, make every effort to use a straight stream instead of a fog pattern. This reduces the thermal inversion effect, which burns firefighters and victims, and also creates a hot, steamy atmosphere that overloads the camera and makes it almost useless. A straight stream directed into the superheated atmosphere, or directly onto the burning fuel is equally effective, but minimizes the thermal inversion.

In a mutual aid situation in which our TIC is specifically requested, Rescue One will respond with a crew of NO LESS than four firefighters *who are qualified on SCBA and TIC* use and physically capable of doing interior work. We will not rely on other departments' abilities to rescue our members if things were to go bad, and thus will respond with two crews, one of which can rescue the other if needed, or may relieve the first. If responding to a department that we clearly know is capable of providing competent rescue or relief to our crews, then crew size can be reduced accordingly if their only need is for the TIC.

We will respond the TIC on mutual aid to any request in which its presence brings with it a realistic likelihood of being able to save a life, or to save property that might otherwise have been lost. As with any mutual aid request, the Chief or senior officer present can and should turn down the request if responding would jeopardize our primary mission of protecting our own district due to lack of personnel or equipment, or if the potential benefit does not justify the cost, risk to personnel or equipment, or other commitment. Another factor to consider is whether a closer department is available that also has a TIC. If these are not the case, though, we will make every effort to accommodate any reasonable request for mutual aid.

## **SOG #5.07 Substance use/abuse**

### **I. Background:**

Use and abuse of illegal drugs, as well as illicit use of prescription drugs, and abuse of alcohol are pervasive problems in today's society. From a standpoint of Department operations, they carry the potential to contribute to property damage, injury, and even death of firefighters or members of the public if a firefighter's judgment or his/her mental or physical abilities are chemically impaired during the performance of their duties. This carries with it tremendous liability, and even if no direct harm occurs, any suggestion that firefighters may have been impaired during the performance of their duties, even if unfounded, can bring public embarrassment and damage to the Department's reputation that could take years to overcome. Because of that, the Department must adopt a zero tolerance policy towards any illegal use of any substance (legal or illegal), as well as any legal use that could impair judgment or performance, or reflect negatively on the Department.

### **II. Policy:**

1. Any use of any illegal substance, and any illegal use of any legal substance (i.e. alcohol violations, prescription drug abuse, etc.) will be strictly banned at all times.
2. Any possession of or use of alcohol or any illegal drugs will be banned at all times on Department property, in Department vehicles, while on duty, responding to calls, or in Departmental uniform or attire. The only exception will be in the case of the collection, transport, or storage of evidence.
3. Any response to calls or attendance at meetings or training after any legal use of any prescription drug or alcohol that may affect judgment or mental or physical abilities is prohibited. If a member must use any prescription that may impair their performance, or chooses to consume more than one alcoholic drink, they are to turn their pager, radio, and scanner off prior to consumption, to avoid having to make a decision whether to respond in case of a page for a call, during a time in which judgment may already be impaired. The pager is to remain off until a minimum time period after the last drink equal to one half hour per drink consumed, or until the effects of the medication have subsided in the case of prescriptions.
4. If a member has consumed one alcoholic beverage, they are not banned from responding provided this is a quantity that they know that they normally tolerate without impairment. However, it is their responsibility to ensure that it is not discernible on their breath, as a member of the public smelling alcohol on a responder's breath will make the assumption they are intoxicated with no further evidence, potentially causing great harm to the Department's and the individual's reputation. If more than one drink is to be consumed, #3 applies.
5. Any officer on the Department who reasonably believes that any member is in violation of any portion of this policy is to immediately relieve that member of duty. The member will be required to immediately leave the emergency scene or Department property via a safe means. The incident will be reported in writing to the Chief within 24 hours, and the Chief and officers will make a determination how to proceed from that point.

### **Drug Testing:**

1. At this time no routine drug testing is planned. It may be implemented at a later time if the need is perceived. However, in special circumstances testing may be required as outlined below.
2. In the event of any traffic accident involving major property damage, injury, or death, whether or not substance use is suspected, or any reason to suspect substance use/abuse may have contributed to the accident regardless of the severity, a chemical test will be required. If law enforcement is obtaining a chemical test, that will suffice. If not, the member will be accompanied to the Emergency Department of Mercy Health Center by an officer or responsible senior firefighter who is not directly involved in the occurrence, and will be tested via blood or urine for alcohol and drugs at the Department's expense. The member will be entitled to a copy of any test results provided to the Department.
3. If a member is reasonably suspected by an officer of the Department of being impaired during the performance of their duties, they may be required to submit to a drug and/or alcohol test, and the reporting requirements of section 2 will apply.

### **IV Disciplinary Action**

1. Violation of any portion of this policy will result in Departmental discipline, up to and including potential suspension or termination from the Department
2. In a situation in which drug testing may be mandated due to an accident or similar incident, refusal to submit, or to consent to the release of results, will result in disciplinary action, including the possibility of termination from the Department.
3. Determination as to whether a member is in violation of this policy will not be limited by statutory definitions of criminal violations, or whether there will be any criminal prosecution. In other words, if a chemical test shows that a driver had less than the legal limit (0.08%) of alcohol in their blood stream, but an amount that would equate to more than one drink, they may still be subject to Departmental discipline for policy violation, even though it may be determined that no criminal violation will be prosecuted.

## 5.08 Respiratory Protection

### Background:

Respirators, and specifically Self Contained Breathing Apparatus (SCBA) have been an integral part of the fire service for many years, and have been used successfully by most or all current members of the Department. In doing so, we have required training, and a demonstration of the ability to make a seal, and to work without difficulty in SCBA prior to allowing a member to use them in an actual operational setting. However, new regulations (OSHA 3079 and state equivalents) now impose substantial new requirements on the Department and individual members who will use SCBA.

### Requirements:

#### When Respirators are Required:

Positive pressure SCBA will be required under the following circumstances:

- Any member working in any "Immediately Dangerous to Life and Health (IDLH) environment
- Any situation involving a possible, suspected, or confirmed oxygen depleted atmosphere.
- Any situation involving exposure to heavy smoke from any source other than vegetation out doors (i.e. wildland fires do not require SCBA, but any other direct fire attack exposing the member to smoke from any source other than vegetation, indoors or out, requires SCBA).
- Any situation involving possible exposure to toxic dust, mist, fumes, or vapors
- Any other situation with the Officer in Charge determines may present a respiratory risk to members sufficient to warrant the use of SCBA.

It should be noted that the HotShield masks provided for wildland firefighting are primarily fire/heat protection, and also offer "nuisance" respiratory protection for the comfort of the wearer. They are not rated for, nor do they provide for actual protection from respiratory hazards, and therefore are outside the scope of this policy. Additionally, any member who chooses, for his or her own comfort, to wear a filter-type respirator in a situation in which it is not required, for comfort and convenience reasons, will not be burdened with compliance issues related to this policy.

#### Administration Responsibility:

OSHA requires a plan administrator to be designated. It is therefore designated that the Fire Chief shall be the plan administrator, but he/she may delegate any portion of that responsibility to one or more qualified officers or firefighters on the Department, including but not limited to fit-testing, record keeping, and enforcement. It is the duty of every officer on the Department to ensure that his/her personnel operating at any situation involving the use of SCBA abide by all portions of this policy.

**Two-In- Two-Out:**

OSHA and NFPA requirements are very specific that any time any person is operating in an IDLH environment, they must work with at least one partner, and must remain in visual, voice, or physical contact with that person(s) at all times. Radio contact between partners is not sufficient. Additionally, an equal or greater number of persons must remain immediately available outside the entrance to the area, fully geared (including SCBA, though they do not have to be "on air"), and equipped with forcible entry and rescue tools, to serve as a Rapid Intervention Team (RIT) in the event the entry team encounters difficulty. One member of the RIT must physically remain immediately outside the point of entry, to monitor the safety of the entry team, and must be in immediate contact with other member(s) of the team and with Incident Command via radio or immediate voice contact. The other members of the RIT may, if circumstances dictate, perform other tasks such as stretching hoselines, Incident Command, pump operations, ventilation, or other such tasks, providing they can immediately abandon their task in the event of an emergency involving the entry team and respond for firefighter rescue. The person at the entry point may have no other task beside safety and rescue of the entry team. This person should perform a quick check of members prior to entry, and secure their second Accountability Tag, which they may secure to their own coat or otherwise place in a handy location to track who is inside. The tags are to be returned immediately after the members exit safely. In the event of an emergency, this safety person must immediately notify the Incident Commander, using the term "Mayday", which is reserved strictly for firefighter emergencies on the foreground, and emergency operations will be initiated as indicated in the Personnel Accountability Policy and elsewhere.

*Exception:* There is one exception to the two-in-two-out rule. If members arrive on the scene and have a reasonably reliable belief that there is a trapped, and saveable victim inside, two members may make a risk-benefit decision in cooperation with the Incident Commander (unless the first unit has advised of the situation and passed command to the second due company) that the need for rescue outweighs the risks, and may make entry for rescue purposes without a RIT in place yet. Two-in-two-out is not applicable in the case of small, incipient stage fires that would not reasonably be expected to result in an IDLH environment.

**Fit Testing/Medical Evaluation:**

OSHA requirements state that no person may work in a respirator until he/she has been fit tested on that particular model and size of mask, and that they must undergo medical evaluation prior to that fit testing to ensure that they may safely wear and use a respirator. Any new member joining the Department will have to complete this prior to being issued an SCBA mask. Those members whose jobs do not require them to use SCBA will not have to complete this process. Any member who chooses for personal reasons not to complete fit testing and/or medical evaluation will be ineligible to use SCBA for any reason, as required by regulations.

Medical evaluation starts with a multi-page questionnaire established by OSHA. It must be completed by the member, and is confidential, so it will be sealed by the member in an envelope with the response form provided. These are sent to an RN or physician for review, and he/she may approve the member for fit testing, may disapprove them, or may require further medical testing. Certain answers on certain questions automatically require an exam by a physician. Any erroneous, false, or misleading answer may subject the member to health or safety risks, and is purely the responsibility of the member providing such incorrect

answers, as the Department is not allowed to review the content of the questionnaire in any way. Evaluation of the questionnaire, and follow up medical examinations must, by OSHA mandates, be paid for by the Department and not by the member. A Department approved physician or clinic will be used, because of requirements that the person evaluating must be familiar with the OSHA requirements. A member's personal physician can only be used if he/she is specifically familiar with the OSHA respiratory protection standard.

Because of these requirements, it will not be permissible to allow anyone who is not an active member of this Department, or who has not completed medical evaluation and fit-testing on our particular model of SCBA to utilize our SCBA at any time. Mutual aid departments will have to develop their own policies and procedures for complying with these regulations, and will have to provide adequate SCBA to their personnel for use. We cannot loan SCBA outside of our membership for training or emergency operations.

### **Personal Masks:**

Anyone who is authorized to use our SCBA will have a personal mask issued. That mask may only be loaned to another member of our Department upon mutual agreement of the two members involved, and only if it is the same size the borrowing member has been fit-tested and approved on. We will allow members to fit test on more than one size mask if they wish, and they can wear all sizes they have passed fit-testing on.

It will be the individual member's responsibility to ensure that they bring their mask to every call that could warrant the use of SCBA, and to ensure that it is kept in clean, serviceable condition. It is to be cleaned with soapy water after each use, and allowed to thoroughly dry. For those equipped with voice amplifiers, the amplifier should not be submerged. It should also be checked at least monthly to ensure that it is in serviceable condition. Prior to donning for use it should receive a quick visual inspection to ensure that it is ready for use, and upon donning a manual seal test should be performed to ensure that it is sealed properly.

SCBA on the apparatus are to be checked carefully every time a truck check sheet is completed to ensure that they are in serviceable condition. Noting on a truck check sheet that SCBA were checked and okay will be considered an indication that a detailed check was conducted, and not merely that they are present in their brackets.

### **Rehab:**

At any significant fire or incident involving the use of more than one SCBA bottle by any individual, a rehab sector should be established. This may be done by the EMS agency providing standby, which is recommended at any large incident, or may merely be an area members can doff their SCBA and bunker coats, drink some liquids, and relax for a few minutes. Any member who has used two SCBA bottles will be required to enter rehab for at least fifteen minutes, or until their vital signs are within guidelines for return to duty, prior to returning to duty. If a member's vital signs do not reach the "return to duty" limits, he/she may be referred to medical treatment, held longer in rehab, or returned to a light duty job such as monitoring a pump or water supply. Such decision will be made jointly by the IC or Operations Section Chief and EMS or the Rehab Sector Officer, considering the individual's overall health and history, operational needs, and so forth. Safety and health of members is always top priority.

**Air Purity:**

SCBA, including our cascade system, will only be filled from air sources that are known to the Department to be tested regularly for purity according to OSHA, CGA, and NFPA standards. Currently the sources that are known to be compliant are the our compressor, Manhattan Fire Department, Wamego Fire Department, Pottawatomie County's compressor trailer, and the Riley County Fire Department. If during emergency operations a cylinder must be filled from an unknown source within the County, it will be drained and refilled from a known source after conclusion of the incident.

Adopted 08/01/1999

Revised 12/2008

## **5.09 Chainsaw Use**

### **Background**

Chainsaws are a tremendously valuable tool in both structural and wildland firefighting, and other emergency situations, used for ventilating roofs, clearing debris, felling trees, clearing brush, etc. At the same time, they have tremendous potential for injury from improper use, tool failure, foreseeable consequences like kickback, and unpredictable behavior of trees being felled. It is essential that basic safety precautions be taken for all saw use.

### **Requirements**

#### **PPE**

For all use of chainsaws, eye protection, gloves, and ear protection are required. The only exception to hearing protection is if the required use of SCBA would prohibit wearing hearing protection.

During structural firefighting operations, full bunker gear will be worn at all times while using a chainsaw, except that SCBA is not required by the use of a saw (it may be necessary for other reasons, however.)

During wildland fire, debris clearing, routine grounds maintenance, or other such use, the following minimum additional items will be worn:

- Kevlar chainsaw chaps
- Helmet or hard hat
- Eye protection
- Long sleeve shirts and pants
- Heavy leather or rubber boots

#### **Safe operations**

- Chainsaw power units should not be raised above the shoulders of the operator
- Chainsaws should be started on a firm surface
- No cutting or felling of any tree or brush is permitted within 10 feet of any form of electrical conductor (power line, cable, wire, phone line, etc.)
- Always have firm footing when operating any power saw (chainsaw, K-12, etc.)
- LCES will be in place at all times. It is critical for the saw operator to have an escape route away from the base of the tree.
- If using the saw on a pitched roof, a roof ladder should be used.

#### **Felling Procedures**

Prior to felling any tree, the saw operator (sawyer) will scout out the entire area for obstructions, bystanders, etc. Any unnecessary personnel with a distance 2.5 times the height

of the tree will be cleared from the area, and any vehicles removed from this area. He/she will also check overhead for power lines, any hanging limbs or snags that could fall off, etc.

The sawyer will determine where he/she wants the tree to fall, and walk out the projected lay of the tree. Keep in mind, an off-balance or leaning tree will tend to go the direction it is already leaning, unless a highly skilled sawyer is at work. Once it is deemed appropriate, a face cut should be made in the front of the tree (the direction it is to fall). This cut should be a notch, around waist to chest high on the sawyer, cutting a pie shaped section out, to a depth of about 1/3 the diameter of the tree trunk. This cut will largely determine where the tree will fall.

After the face cut is completed, a back cut will be made, roughly two inches above the face cut, and level. The different height will minimize the likelihood of the tree trunk kicking out backwards. This cut should go within a few inches of the face cut, at which point the tree will start to break and fall. The sawyer should call out a warning and IMMEDIATELY withdraw from the immediate area. Do not continue cutting or remain by the tree once it starts to fall.

Once the tree falls, it can be limbed and bucked (cut into shorter pieces) if warranted. Be alert at all times for the tree to roll as any part is cut off.

Once sawing is complete, saws are to be cleaned, sharpened if needed, fueled, and returned to service.