



## IAFF Local 42 Line of Duty Death

**Activity**

**Responsible Party  
Chair**

**Status/ Notes**

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### Funeral Mass

### Funeral Home/s Used

\* Establish contact and name a liaison

### Contact with Family Members

### Contact with E-Board Member

### Contact with Fire Chief / Fire Department

### Contact With Members at Scene



**Contact with EAP (CISD)**

**Contact with Clergy**

**Contact IAFF**

**News Conference / Notification of PIO**

**Establish Contact with Police Department**

**Establish Family Liaison:**

**Contact Honor Guard**

- pipes and drums
- taps
- last alarm bell
- US Flag / 42 Flag / IAFF Flag

**Spokespersons: Department / Union**



### **Auxiliary Contact**

- food to family's residence
- Reception after wake
- Reception after funeral service

### **Flowers / Wreaths**

# Line-of-Duty Death Information Form Fire Fighters in the United States



International Association of Fire Fighters  
Division of Occupational Health & Safety and Medicine

Division of Occupational Health, Safety and Medicine  
United States -- Line-of-Duty Death Information Form

Deceased:

Date Received  Time Received

Local #  District  VP

Rank  Social Security Number

Age  IAFF Membership Number

Date of Death  Cause of Death

Next of Kin     
(relationship)

Address

Telephone

Children   Age

Local Union Official

Union Official Title

PSOB Contact

Union Local #

Address

Telephone

Governor

Address

Fire Chief

Fire Department City

Address

Telephone

Municipal Official

(including title)

Address

Telephone

U.S. Senator

Address

U.S. Senator

Address

U.S. Congressman

Address

Funeral Home   
(including address)

Date(s) of Wake  Time

Funeral Date  Time

Funeral Address   
(including name)

Telephone

**Please immediately provide a picture and a brief biographical sketch (family, hobbies, fire service/ union details) of the fallen fire fighter which will be placed on the IAFF website and used during the IAFF Fallen Fire Fighter Memorial and during the IAFF Convention. It is preferred that the picture and bio be in electronic format and e-mailed to laaron@iaff.org. If not available electronically, send the picture and bio to the IAFF Division of Health, Safety and Medicine, 1750 New York Avenue, NW, Washington, DC 2006. Please provide an address for the picture to be returned.**

**FAX this Form, as soon as possible to:  
IAFF Department of Occupational Health and Safety  
202-737-8418**

## The Fire Fighter's Prayer

When I am called to duty, God  
Wherever flames may rage  
Give me the strength to save some life  
Whatever be its age.

Help me embrace a little child  
Before it is too late  
Or save an older person from  
The horror of that fate.

Enable me to be alert  
And hear the weakest shout,  
And quickly and efficiently  
To put the fire out.

I want to fill my calling  
And give the best in me,  
To guard my friend and neighbor  
And protect their property.



## FUNERAL PROTOCOL

The following protocol is to assist IAFF local affiliates in the event of a line-of-duty death of a member. The information is provided solely for assistance purposes. Each individual affiliate should evaluate its local conditions and utilize, amend or change these recommendations accordingly.

### I. NOTIFICATION

- A. After the notification of a death of a member, the chief of the department should immediately inform union office/officials and the fire department chaplain.
- B. The fire department should be informed that the local union official(s) wish to accompany those department officials who are dispatched to notify next of kin. After the family has been officially notified, the fire department and the local union should notify all on-duty members.

### II. PLANNING

- A. The local union president must immediately appoint an individual with the sole responsibility of planning for the deceased member's funeral.
- B. In order for the local union to be fully prepared the following initial information must be gathered from deceased family as soon as possible. A union/department member should be immediately assigned as a family contact to assist the family and serve as the liaison between the family and those planning the funeral.
  - Do they want funeral with full department honors?
  - Do they want church funeral? If so, what church?
  - Who is their choice of priest, minister, rabbi, or other religious representative?
  - Where is the funeral home?
  - Who is the funeral director?

- C. If the family requests a departmental funeral, the funeral director should be so notified. The funeral director makes arrangements with the church, cemetery, etc. The union/department should make arrangements for the funeral director to receive deceased's uniform in the event of a departmental funeral or if requested by family.

- D. A list of pallbearers must be obtained from the family. Honor guard members should be selected, usually chosen from house and company members, and scheduled to stand at casket during viewing at funeral home. For funeral service honor guard and ushers should be selected.

- E. Arrangements must begin immediately on site selection for the memorial service (if

planned) and for collation (reception) following funeral/memorial service. Vendors should be immediately solicited for assistance.

- F. The local union must determine the availability of the following:

- white gloves
- union pins
- badge covers
- bunting (fire stations/union hall)

- G. Determine whether church cards (last alarm) are desired and arrange with printer for production (if cards are to be printed). This must be done immediately to allow for printing time.

- H. Secure space from local hotel(s). Remember that firefighters from throughout the International will attempt to attend funeral. Select one hotel as base for International Principal Officer(s), Vice President(s), and staff.

- I. Establish liaison with police department as follows:

- Request that police department send out on police blotter the announcement of line-of-duty deaths including as much detail as possible, including funeral arrangements, department and union address, and local union representative responsible for funeral home's phone number.
- Request police to provide detail in marked car at deceased's house during entire funeral period.
- Request that police have representative at any planning meeting. They can assist with logistical coordination including traffic, crowd control, out-of-town firefighters, parking, etc.

### III. THE FUNERAL

For line-of-duty departmental funerals the following protocol should be arranged:

- A. Funeral director has the primary responsibility of assisting the family, including bringing them into church and seating. Department should select Chief-in-Charge for directing and coordinating fire department and firefighter involvement in funeral.
- B. Honor Guard should post colors prior to church service. Honor guard should be posted outside church on both sides of entrance. Department personnel, union officials, firefighters and civic delegates should line up with honor guard to street. Family passes between ranks. In all instances, family should enter church ahead of

any dignitaries. Ushers should keep front right part of church open for members and delegates. After body is greeted all march into church and are seated in the following fashion:

- Fire chief
- Union president
- International principal officer(s)
- Local union officials
- Deceased's company
- Delegation of department's chief officers
- Members of department
- Members of other fire departments

C. All remain standing until all firefighting delegations are in place.

D. At conclusion of service, ushers will direct firefighting delegation to street where they resume original places, facing church, under direction of chief-in-charge. Pallbearers then proceed out of church with body followed by family and other mourners. Chief-in-charge gives command for salute as body is brought from church and placed in hearse.

E. After services, funeral director assembles procession. Chief-in-charge directs all firefighting personnel, proceed by colors to march ahead of procession to designated pass-in-review position. If desired, a designated fire house could be chosen for pass-in-review. Fire house should have apparatus on apron, with all on-duty personnel at attention, bells tolling as procession passes. After pass-in-review procession proceeds to cemetery.

#### IV. COMMITTAL

A. The chief-in-charge is responsible for assembling firefighters at grave site. It should immediately be determined how many mourners the cemetery and/or grave site area can accommodate. Commitment is usually for family and close friends. Apparatus can be detailed to cemetery gates with firefighters in full dress.

B. Arrangements can be made for bugler for TAPS and sole bagpiper for playing *Amazing Grace*, or appropriate hymn. Local musicians unions or schools can usually provide these individuals if unavailable on fire or police department.

C. Dismissal from grave site is generally followed by reception.

#### V. BELL CEREMONY AND PRAYER

A. The ringing of the bell and the Fire Fighter's Prayer are two traditions of the

fire service which reflect respect and honor to those who gave their lives to their duty. The ringing of the bell represents the end of the emergency and the return to quarters, and is usually three rings of the bell, three times.

B. Both are provided for local adoption.

#### VI. PERIOD OF MOURNING AND HONOR

A. After notification of line-of-duty death is completed, flags at all jurisdiction's properties (government center, fire stations, schools, etc.) should be lowered to half-staff in honor of fallen fire fighter.

B. Flags at jurisdiction's properties should remain at half-staff from date of death through the day of committal.

C. Flags at fire stations and union hall should remain at half-staff for a period of 30 days. Funeral bunting, if used, should also remain on fire stations and union hall for 30 days.

D. After notification of line-of-duty death is completed, badge covers should be placed across the face of each member's badge. Badge cover should remain for 30 days.

The IAFF Executive Board first adopted the IAFF funeral protocol in May 1989. The latest edition was revised and adopted in July 1997.

#### BELL CEREMONY

The men and women of today's fire service are confronted with a more dangerous work environment than ever before. We are forced to continually change our strategies and tactics to accomplish our tasks.

Our methods may change, but our goals remain the same as they were in the past, to save lives and to protect property, sometimes at a terrible cost. This is what we do, this is our chosen profession, this is the tradition of the firefighter.

The fire service of today is ever changing, but is steeped in traditions 200 years old. One such tradition is the sound of a bell.

In the past, as firefighters began their tour of duty, it was the bell that signaled the beginning of that day's shift. Throughout the day and night, each alarm was sounded by a bell, which summoned these brave souls to fight fires and to place their lives in jeopardy for the good of their fellow citizen. And when the fire was out and the alarm had come to an end, it was the bell that signaled to all the completion of that call. When a fire

fighter had died in the line of duty, paying the supreme sacrifice, it was the mournful toll of the bell that solemnly announced a comrades passing.

We utilize these traditions as symbols, which reflect honor and respect on those who have given so much and who have served so well. To symbolize the devotion that these brave souls had for their duty, a special signal of three rings, three times each, represents the end of our comrades' duties and that they will be returning to quarters. And so, to those who have selflessly given their lives for the good of their fellow man, their tasks completed, their duties well done, to our comrades, their last alarm, they are going home.

### FIRE FIGHTER'S PRAYER

*When I am called to duty, God  
Wherever flames may rage  
Give me strength to save a life  
Whatever be its age.*

*Let me embrace a little child  
Before it is too late  
Or save an older person from  
The horror of that fate.*

*Enable me to be alert  
And bear the weakest shout,  
and quickly and efficiently  
To put the fire out.*

*I want to fill my calling  
To give the best in me,  
To guard my friend and neighbor  
And protect their property.*

*And, if, according to your will,  
While on duty I must answer death's call;  
Bless with your protecting hand  
My family, one and all.*

# **LODD Funerals Eulogy Template**

## **Preparing a Eulogy**

In response to the Executive Board motion to develop a eulogy template and guidelines to assist District Vice Presidents when they are called upon to deliver eulogies to fallen fire fighters in their districts, the IAFF has prepared this document.

We have drawn upon numerous sources, including materials drawn from the IAFF, the National Fallen Fire Fighters Foundation, and other resources.

Preparing a eulogy for a fallen brother or sister IAFF member can be very difficult. Remarks should be both comforting and respectful, and leave a lasting and positive memory of the individual who made the ultimate sacrifice in the hearts and minds of those who were closest to the fallen fire fighter.

A eulogy is designed to communicate with the living, most importantly for family and close friends of the deceased. It should remember the fallen hero as a fire fighter and as an individual who had many accomplishments beyond his career through his or her lifetime.

As an IAFF District Vice President, your words carry much weight with those in attendance at the funeral or service. You are representing the International and more than 260,000 IAFF members.

Here are some guidelines and generic language and quotes that can draw from help you gather your thoughts and prepare a fitting tribute if you asked to deliver a eulogy for a fallen firefighter from your department.

## Research

- Good research is the key to a good eulogy. You must have details. Some can be drawn from newspaper stories about the incident and from the obituary, but it is critical that you get personal information so you can give the eulogy the personal touch.
- Get the key facts such as age, nickname, names of family members and closest friends, timeline of key events in the person's life, personal and professional accomplishments, and honors and awards received.
- Ask friends and family members for stories that illustrate how they want to remember their loved one. If you use one of these stories, remember to acknowledge the source. For example, "Bill's son told me..." or "Joan's father remembers her as..." It is comforting for family members and friends to hear their own words describing their loved one.
- Include information about the firefighter's character and personality. What was the firefighter proudest of in his or her life? How would he or she want to be remembered?
- If you knew the firefighter, include personal anecdotes and memories.
- If you did not know the firefighter personally, say that. Speak with people who knew the fallen fire fighter well and those who worked with him and draw upon their recollections and thoughts.
- If others are also scheduled to give eulogies at the funeral or service, communicate with them, if possible, so that each of you delivers unique views of the deceased's life and character, rather than repeatedly telling the same stories and anecdotes.
- Do a Google or Yahoo search on the internet for eulogies and quotations you can use for the eulogy.

## Organize and Draft

- You may want use a theme to tie your presentation together. For example, "Joe loved adventure," or "On the job and off, Rick put the needs of others ahead of his own."
- When time permits, develop you theme in outline form a logical order, and then fill in the precise words.
- Begin by expressing your condolences and the International and local union's sense of loss.
- Acknowledge family members, including spouse or significant other, children, parents, siblings, and close friends.
- Focus on the person's life, not the circumstances that led to the death.
- Include humorous stories. Even in the midst of deep grief, it is important to smile. Leave those at the service with positive memories.
- If the deceased went by a nickname, reference his or her full name and rank once at the beginning and then use the nickname through the rest of the eulogy. At the end you may want to use his full name again.
- If you are not sure about a fact, check it out for accuracy – or don't use it.
- Assure the family that the deceased has earned "a place in heaven" or he "is in a better place."
- Include a statement of support from the union. The union must follow through on any promised support, so only promise what you can ensure will be delivered.
- Have a printed copy of final eulogy ready for the family and others who may want one after you have delivered it, when possible.

## Delivery

- Review and practice your remarks before the service. If you are nervous about speaking in front of other people, practice speaking in front of someone you trust to give you honest, supportive feedback.
- If you write the eulogy yourself, it will become imbedded in your memory. You will assimilate many of the phrases and concepts and they will make your delivery much more natural.
- The more times you read the eulogy, the better you will know it.
- It is okay to show emotion. If you have written a good eulogy, you may have no choice. But don't try to impart emotions you don't feel. They will come across as shallow and without feeling.
- Be prepared to adjust your planned remarks. Often you will find out additional information moments before the funeral or service is to begin. Be flexible.
- Remember that not everyone is a great orator. However, the eulogy is not about you; it is about the deceased. Loved ones will remember the sincerity of your words and your kindness, not the quality of your speech delivery.
- By using simple words and phrases, drawn from the way you normally speak, you will deliver a better eulogy. Don't try to speak in a style that you would not normally use. Don't use words that you would not normally use.
- View the eulogy as a conversation between you and the loved ones of the deceased.
- Speak in a normal and respectful voice. A eulogy is not a campaign speech.
- Look around the church or room, but focus most of your attention on the family members and loved ones sitting in the front rows.
- Your primary audience is the family and loved ones. Your secondary audience are the fire fighters who worked and were friends of the deceased.

## Reference Materials

The resources may also help you in writing and delivering a eulogy.

**Funerals with Love** ([www.funeralswithlove.com/eulogy](http://www.funeralswithlove.com/eulogy); a downloadable book is available for a fee

**Grief Loss & Recovery** ([www.grieflossrecovery.com/grief-articles/martin01.html](http://www.grieflossrecovery.com/grief-articles/martin01.html))  
Brief step-by-step guideline to writing a eulogy

**A Labor of Love: How to Write a Eulogy** ([www.eulogybook.com](http://www.eulogybook.com)) by Garry Schaeffer, Downloads book available for a small fee; also available in paperback.

**IAFF Staff Resources**: Communications and Media Division and the Public Relations Department.

**Quotes and Sayings Database**: <http://www.quotesandsayings.com/>

**The Quotations Page**: [www.quotationspage.com/](http://www.quotationspage.com/)

**Bartlett's Familiar Quotations**: [www.bartleby.com/100/](http://www.bartleby.com/100/)

**Quoteland**: [www.quoteland.com/](http://www.quoteland.com/)

**The Quotations Archive**: [www.aphids.com/quotes/index.shtml](http://www.aphids.com/quotes/index.shtml)

**Quotation Search**: [www.quotationspage.com/search.php3](http://www.quotationspage.com/search.php3)

**The Quotations Home Page**: [www.theotherpages.org/quote.html](http://www.theotherpages.org/quote.html)

**Quotations Reference**: [www.quotationreference.com/](http://www.quotationreference.com/)

**Inspirational Quotes and More**: [www.libraryspot.com/quotations.htm](http://www.libraryspot.com/quotations.htm)

**Famous Quotes and Quotations**: [www.startingpage.com/html/quotations.html](http://www.startingpage.com/html/quotations.html)



## **Sample Eulogy Outline**

- **Poetry about Fire Fighter Heroism (could include famous quote about sacrifice, honor, heroism, etc.)**
- **OPTIONAL: Telling of tragedy (emphasize bravery of fire fighter, if applicable)**
- **Telling of Personal Story (growing up, achievements, passion for firefighting, character traits, etc.)**
- **Recognize family's loss (spouse, children, parents, siblings, etc.) deceased's closeness to family.**
- **Telling of personal hobbies, interests, traits, memories and personal anecdotes that for which the fire fighter was known**
- **Condolences ("on behalf of the IAFF, we offer condolences to (insert family names)...")**
- **Summary (insert any past examples of bravery or great moments for the audience to remember about the lost fire fighter, mention future remembrance through Fallen Fire Fighter Memorial, etc.)**
- **Presentation of Medal of Honor to family.**

## Sample Eulogy

Death is no stranger to fire fighters.

It is a tragic truth... an all too familiar refrain... that has plagued our profession since its earliest days...

But that fact... that truth... never makes the death of a fire fighter in the line of duty any easier to take...

We talk about heroism when fire fighters die.

And xxx was a day/night of heroism in xxx... as xxx

There were many heroes that day/night among xxxxx fire fighters who responded...

None of them expected to die... none of them deserved to die...

In the end...xxx never returned to his fire station or to his loved ones...

[Firefighter's name] was only xxxxx years of age... struck down in the prime of life...

He was an accomplished fire fighter... a proud fire fighter... and committed fire fighter.

He was a committed father [if applicable]... who gave his life for a higher calling... a calling that few except fire fighters can fully understand.

By all accounts xxxxx was the epitome of all that it means to be a fire fighter...

Always trying to learn more about the job he loved...

Always focused on the task at hand... and never afraid of hard work...

Always ready to teach a rookie how to be a better fire fighter...

Dedication... courage... commitment...

All these words describe xxxxx's xx-year career in the xx Fire Department...

And now sacrifice has been added to that list.

But I know these words ring hollow for the xxxx family...

xxx has lost her spouse...

xxx and xxx have lost their dad...

xxx has lost her son...

xxxand xxxx have lost a brother...

Their sense of emptiness and pain is unfathomable for those us who are here to share their grief... and comfort them.

xxxx will never again add to his [insert several relevant hobbies, traits, activities or memories from friends, family]

xxxxx will never again....

xxxxx will never again....

xxx... xxx... xxxx... I bring you sincere condolences from the 260,000 men and women of the International Association of Fire Fighters... and the commitment that our union... and xxxx Local xxxx... will be there for you now... and in the years to come.

But I know all too well that neither our condolences... or anything I say... can begin to fill the void in your lives... or quell the grief and the anguish that you feel over your loss.

Only time and love will help ease the pain in each of your hearts.

I can only hope that you take solace in the fact that xxxx died doing something that is the measure of human greatness.

And I encourage you to take pride in knowing that... although xxxx was taken before his time... he lived a fuller life than most of us can ever hope to live...

He accomplished more than most of us can ever hope to accomplish...

And his devotion to duty is an example for all of us to follow.

xxxx... xxxx... always remember that your dad was someone special... not only to you... but to the fire fighters he worked with... and to the citizens of xxxx who he served so proudly.

xxxx may be gone from this Earth... but he will still be with you... and with us... for all time.

xxxx's memory will be immortalized in the granite wall at the LAFF Fallen Fire Fighter Memorial in Colorado... here in xxxx at xxxx [IF APPLICABLE]... and at other memorials to fire fighters who have made the ultimate sacrifice.

And if you... and your mother... listen closely with your hearts... you will feel XXXX's presence... as he watches over you... today... tomorrow... and for the rest of your lives... from that special place in heaven reserved for fire fighters... and other great men and women who have given their all for others.

I want you to know that you have been part of our family... and you will always be part of our extended family.

When all of the eulogies are finished... the IAFF and the members of XXXX Local XXXX will be here for you... today...tomorrow... next week... next year... and for the years to come.

We will not leave you... We will not forget you... We will be there for you... whenever you need us.

Your husband... your father... gave his life to protect the citizens of this community... and this International Union pledges to you... that we will protect you.

God Bless you... God Bless the entire xxxx family and all those who knew and loved xxxx... and God Bless every xxxx fire fighter... particularly those who are working on the line today.

###

### **Presentation of Medal of Honor to family.**

Now... xxxx... and xxxx Local xxx President xxxx will join me in presenting the IAFF's Medal of Honor to xxxx and her children. The gold medal is our union's highest honor and it is given to the families of every IAFF member who makes the supreme sacrifice in the line of duty.

###

## Sample Phrases

"It is the actions that a man takes over his lifetime that bear witness to his character.

And whether that lifetime lasts a century... or is cut off in its prime... the true measure of one's worth... here on Earth... can be measured by the actions he took... the decisions he made... the people he touched and loved... and the legacy he left behind.

All of us make contributions to society during our lives... to our family and loved ones... and to those who depend on us... but some among us rise above what is expected of us all.

XXXX was such a man... who touched everyone in this church here today... and thousands more... over his full and fruitful life."

###

"Leadership... compassion... generosity... courage... commitment... and dedication were not just words or hollow promises for XXXX.

They were his everyday truths... and the way he lived his life is an example for us all."

###

Let me say that your loss... our loss... is heaven's gain.

Although he is gone from this earth... and from our lives... he will always remain in our hearts... our minds... and our souls.

Bill's legacy will live on through his wonderful family... and through all of us that he touched, helped, counsel, and brought along throughout his life.

###

"XXXX is now in a safer place... a place he has earned through his love... his work... his good deeds... and his compassion and strength"

"Abraham Lincoln once said that 'in the end it's not the years in your life that count... It's the life in your years.' "

"I cannot think of more fitting words to describe the legacy that xxxx left to all of us."

###

I know he has won a very special place at the right hand of God... for all he has done for his fellow man... and for his work to make the world a better place for fire fighters and others in XXXX.

And I know he is watching over all of us right now... as he will for all eternity.

###

"Although he is gone from this earth... and from our lives... he will always remain among us in our hearts... our minds... and our souls."

His legacy will live on through his wonderful family... and through everyone that he touched, helped, counsel, and brought along throughout his life.

May XXXX rest in peace and May God Bless XXXX (spouse)... his family... and all those who knew and loved him.

###

In fire fighting, the most dangerous of professions, death is always something we must contend with. No one deserves to die on the job, but since the earliest days of our profession every fire fighter has known that with each alarm death may be around the next corner.

This is one of the tragic truths of our job and all of us acknowledge that when we choose to become fire fighters.

###

He understood, as all fire fighters understand, that their next alarm may be their last. As with all fire fighters, he was ready and willing to lay his life on the line to protect the citizens of xxxx, and in this case, that's exactly what happened.

It's only natural that we try to find meaning in what happened that day. Some of us will wonder why fate chose him to die, and some of us will simply say it was God's will. But we can't let this tragedy -- this terrible loss -- stop us as fire fighters from doing our job. And we can't let the knowledge that death is ever present paralyze us.

###

No one can give XXXX back to you, but I hope you can take some comfort in knowing that he was engaged in an endeavor that is a measure of human greatness. He gave his life for that most noble of causes, the protection and safety of others.

I hope you can take solace in knowing that his death was not in vain and that there was abundant meaning in his life. XXXX made a difference in the XXXX years he lived in this world because he died doing something that mattered.

###

A newspaper columnist writing about the dangers fire fighters face, once said, "They're born willing to rise at the tone of a bell and march into pure hell."

That one sentence appropriately describes the dedication and bravery of the XXXX fire fighter(s) who gave his/their lives last XXXX.

###

Although we can never replace the void in your lives left by XXXX's loss, XXXX...XXXX...XXXX, always remember that you are also part of our family.

Take solace in knowing that his professional and personal life was marked by courage, character, and selfless dedication. Take pride in knowing that he lived life to the fullest and that he had such a positive influence over so many lives.

###

Mother Teresa once said, "You make a living by what you get; you make a life by what you give.

XXX was a man who...

He was truly the type of man that Mother Teresa was referring to, and no one will ever question that fact, because he proved it.

###

Our profession ... the profession of fire fighting ... is more than a job. It's more than a calling.

It is a total dedication to others, and a willingness to put ourselves in harm's way for our fellow citizens.

When the worst happens to one of our own, there are no words to console the friends, the family, and fellow fire fighters of the fallen.

We take special care to honor the memory of those who make the ultimate sacrifice.

There is a saying that good brave men too often must die, but death cannot erase their names.

Brother XXXX's name will be inscribed on the wall with many others at the IAFF's Fallen Fire Fighter Memorial in Colorado Springs.

But his memory is already etched in all of our hearts.

Everyone here will long remember him... for his professionalism and dedication to duty.

###

I know that neither inscriptions on marble walls of honor... nor our words or our tears... can fill the unfathomable void left in your hearts by Steve's passing.

Only time can heal this grievous wound that has been inflicted on all of you... and then... still never heal it completely.

But I urge you to take solace in knowing that you are part of our family... our fire fighter family... our Union family... and we will never forget you.

I know for a fact... that the officers and members of Local xxxx will be there for all of you... in your time of need.

Reach out to them... they are your family... and we are your family.

We can only hope that the support of these fire fighters... and the presence of so many friends and mourners in this church this morning... provide some comfort to you... and help you realize that Steve epitomized the best our society has to offer.

Know... as we know... that in his 39 years on this Earth... Steve lived a fuller... and more rewarding life... than most of us will ever live.

###

Remember this promise from Isaiah 41:10. "Do not fear for I am with you. Do not be anxious for I am your God. I will strengthen you. Surely I will help you. Surely I will uphold you with my righteous right hand." XXXX has earned a spot in that better place, and you must believe that he is watching over you right now, as he will for all eternity. Hold him close to you, deep inside your hearts, for as long as you live.

###

I want to assure you that the fire fighters gathered here today..... and tens of thousands more across North America, share your grief and your sorrow.

Brother XXXX made the ultimate sacrifice that one can make in our most dangerous of professions.



He was engaged in an endeavor that is a measure of human greatness.... and he gave his life for that most noble of causes..... the protection and safety of others.

One of the tragic truths of our profession..... one we all acknowledge when we choose to become fire fighters..... is that with each alarm..... death may lurk around the next corner.

But this truth makes it no easier for us to accept the loss of our brother in the fire at XXXX.

###

Benjamin Franklin... one of the founding fathers of our nation's fire service... said that fire fighters do their job not for the sake of reward or fame... but they find their reward within themselves and they love one another.

That love... and the bond.... that Franklin spoke about more than 200 years ago... is even stronger among fire fighters today.

# # #

# FIREFIGHTER AUTOPSY PROTOCOL



Federal Emergency Management Agency



United States Fire Administration

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# **FIREFIGHTER AUTOPSY PROTOCOL**

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## ACKNOWLEDGEMENT

This project could not have been undertaken without the expertise of the following people who provided invaluable guidance and input on their own time by serving on the Technical Advisory Committee:

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## **I. BACKGROUND**

The United States Fire Administration (USFA) has a major commitment to improving the health and safety of firefighters. This mission has created an accompanying interest in learning about the causes of firefighter deaths and injuries. In the process of researching firefighter deaths, it was determined that there is no standard protocol in forensic medicine that would assist a coroner or medical examiner in determining the cause of a firefighter death.

Responding to this concern, the USFA, in 1993, initiated a project to develop a standard firefighter autopsy protocol. Experts in forensic pathology, toxicology, epidemiology, and medicolegal aspects of autopsy, as well as representatives of several national fire service organizations, were selected to serve as a Technical Advisory Committee (TAC), providing guidance, consultation, and review during the development of the protocol. The members of the TAC provided the expertise and experience to develop the actual protocol, which accompanies this report.

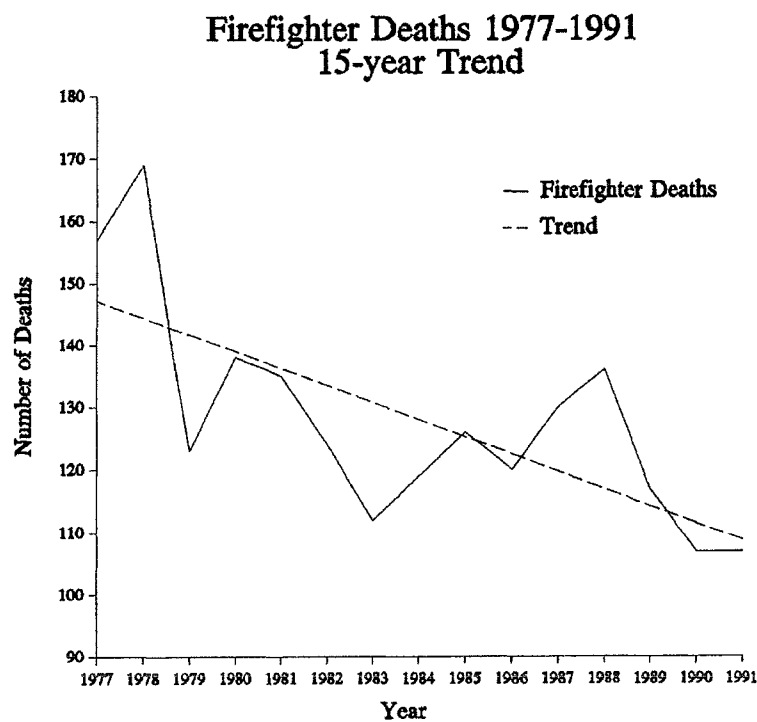
The consensus of the TAC is reflected in the protocol, which is intended to provide guidance to medical examiners, coroners, and pathologists on uniform recommended procedures for investigating the causes and contributing factors related to firefighter deaths. The protocol recognizes and addresses those attributes of firefighter casualties which distinguish them from the general population, as well as from civilian fire casualties. These differences include the use of protective clothing and equipment, prolonged exposures to the hazardous environment, and specialized training and duties.

The accompanying documentation is intended to describe the need for the protocol, the situational context under which it was developed, and the major issues that relate to it.

### **Scope of Problem**

Firefighting has been described as one of the nation's most hazardous occupations. The National Fire Protection Association (Karter, 1993) estimates that 1,058,300 people in the United States are either full- or part-time firefighters, including both career and volunteer personnel. The number of career firefighters (253,000) has been rising steadily throughout the past decade, while the number of volunteer firefighters (805,300) is declining. According to statistics compiled jointly by the USFA and the National Fire Protection Association (NFPA), 1,920 firefighters have lost their lives while on duty in the United States over the past 15 years -- an average of 128 per year. Approximately 45 percent of all firefighter duty deaths during this period were attributed to heart attacks.

Improvements in firefighter health and safety standards and practices, particularly in the areas of personal protective equipment, physical fitness, and training, are widely believed to be responsible for a significant downward trend in line-of-duty deaths during the last 15 years. Between 1977 and 1991, the nation experienced a 32 percent drop in the annual number of firefighter line-of-duty deaths (see Figure 1). The number of line-



**Figure 1**

of-duty deaths in 1992 was a record low of 74. Notwithstanding the significant drop in firefighter deaths, too many firefighters die needlessly each year.

The statistical analysis of firefighter fatalities accounts for *how* many firefighters have died and to some extent explains *how* they died, but the available data do not explain *why* firefighters die. Moreover, a dramatic downward shift in the total number of firefighter deaths in 1992 (and preliminary statistics for 1993) begs still more questions about what, if anything, is being done correctly to prevent line-of-duty deaths.

Epidemiological studies of firefighter mortality conducted in recent years provide interesting insights into how firefighter health and mortality rates compare to other population groups, but they too fall short of explaining conclusively why firefighters die (especially any individual firefighter). The interest in occupational health factors relates

to the frequency of sudden deaths due to heart attacks, as well as chronic conditions which include respiratory disorders, heart disease, and cancer.

## **Rationale for the Protocol**

The autopsy protocol was developed to give guidance to qualified professionals on the specific procedures that will be most appropriate in performing an autopsy on a deceased firefighter. The recommended procedures are intended to address the complex relationship between the firefighter and the inherently dangerous work environment where the duties of a firefighter must be performed. **It has been assumed that the user will be qualified, skilled and experienced in performing autopsies, as the protocol is intended only to provide guidance on the special considerations that should apply to a firefighter autopsy.**

It is hoped that a uniform firefighter autopsy protocol will lead to a more thorough documentation of the causes of firefighter deaths for three purposes:

- 1) to advance the analysis of the causes of firefighter deaths to aid in the development of improved firefighter health and safety equipment, procedures, and standards;
- 2) to help determine eligibility for death benefits under the federal government's Public Safety Officer Benefits Program, as well as state and local programs; and
- 3) to address an increasing interest in the study of deaths that could be related to occupational illnesses among firefighters, both active and retired.

The work environment of the firefighter is inherently dangerous. To survive in that environment, the firefighter routinely uses protective clothing, respiratory protection, safety equipment, and standard operating procedures intended to reduce the level of risk, but which cannot eliminate all risks. It is extremely important, in the event of a failure of those protective systems, to fully and carefully determine what, if anything, may have gone wrong and how, if possible, similar occurrences may can be prevented from happening again. An autopsy may provide some of the essential evidence to make those determinations.

The specific issues relating to the determination of eligibility for death benefits are discussed in Part IV of this document. Several areas of interest in the study of chronic health issues are addressed in Part III of this document.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health*, section 8-4.3, recommends, "If a member dies as a result of occupational injury or illness, autopsy results, if available, shall be recorded in the health data base."





## II. MEDICOLEGAL AUTOPSY PROCEDURES IN THE UNITED STATES

The need to investigate and understand the cause of death, particularly when it occurs under unusual, confusing, or ambiguous circumstances, is almost universal. Nearly every country has established requirements for the medicolegal investigation of unforeseen, unnatural, or violent deaths, usually including workplace accidents and job-related deaths. However, unlike some other industrialized nations, no national system of death investigation exists in the United States. Death investigation in the United States falls under the authority of state and local officials.

Legal structures governing death investigation vary considerably among the 50 states, the District of Columbia, and the territories. Depending on the jurisdiction, the official responsible for determining the cause and manner of death may be a coroner or medical examiner. Most firefighter deaths are investigated as unusual or unforeseen deaths according to state laws and regulations, and a high level of discretion is afforded to coroners and medical examiners in the manner of fulfilling their duties and responsibilities. Only one state, Maryland, specifically requires a medicolegal investigation of all firefighter deaths. Other states, such as New Jersey, have designated the Division of Fire Safety as the lead agency for investigating fire service accidents, but have established no autopsy requirements.

Two publications attempt to organize and describe medicolegal autopsy requirements in the United States:

- Combs, D. L., R. G. Parrish, and R. Ing. 1992. *Death Investigation in the United States and Canada, 1992*. Atlanta: Centers for Disease Control, U.S. Public Health Service; and
- Wecht, C. H. 1989. *United States Medicolegal Autopsy Laws*, 3rd ed. Arlington, Va.: Information Resources Press.

Notwithstanding the differences among the various systems, all death investigation systems are intended to respond to questions of who died, how and why a death occurred, and (as applicable) who is responsible for the occurrence. This information in turn may be used in legal proceedings, to compile vital statistics, to evaluate medical care and treatment, and to compile factual information on clinical, anatomical, pathological, physiological, and epidemiological subjects for research purposes.

### **When Is an Autopsy Required?**

An autopsy is not performed as a part of every death investigation. In most cases, the determination of the need to perform an autopsy is a discretionary responsibility of

the coroner or medical examiner. The issuance of a death certificate does not require an autopsy and only a death certificate is needed to qualify for most insurance and death benefit programs. The coroner or medical examiner may determine that no autopsy is required in any situation where there is sufficient other evidence to make conclusive determinations on the cause and manner of death. Frequently, no autopsy is conducted when a firefighter death is believed to have been caused by natural causes, such as cardiac ischemia, even when it occurs on the scene of or responding to a fire or emergency incident (see Goode, 1990).

Many coroners and medical examiners have had to limit the number of autopsies performed because of cost and time constraints. Fiscal pressures have increased as the number of death investigation cases has increased, particularly those involving violent deaths. The cases in which an autopsy is most likely to be omitted include those where there is a known and undisputed cause of death without suspicion of criminal activity; line-of-duty deaths often fall within these parameters. Autopsies are sometimes omitted because of the religious or personal preferences of the deceased and his or her family.

The failure to conduct autopsies appears to be of significant concern throughout the medicolegal community. Performing autopsies, even in cases of prolonged illness or involving individuals with prior medical histories, would be valuable in conclusively determining the cause of death, gaining a more detailed understanding of injury and disease processes, and evaluating the quality of medical care. According to some in the death investigation profession, a decline in the level of interest in pathology and forensic pathology among medical students has led to a shortage of trained professionals to conduct these procedures.

Autopsies are usually performed to establish or verify the cause of death, or to gather information or evidence that would be helpful in an investigation. Without an autopsy, specific causes, contributing factors, and underlying conditions may go undiscovered and unreported. In the case of firefighter fatalities, this lack of information may significantly hamper our understanding of the hazards of firefighting and limit the ability to develop more effective ways to prevent firefighter deaths and injuries.

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### III. OCCUPATIONAL ASPECTS OF FIREFIGHTING OF SPECIFIC CONCERN TO AUTOPSY

Firefighter fatalities often result from complicated scenarios. Due to the nature of the occupation, a firefighter's death could be caused by a wide variety of single factors or a combination of several factors. For example, a firefighter could die from a stress-induced heart attack caused by simple over-exertion; or a firefighter could die from asphyxiation which is actually caused by the failure of his or her breathing apparatus; or a firefighter could die from hypothermia, resulting from being trapped in a structural collapse while fighting a fire on an extremely cold day. A firefighter's death could be caused by the inhalation of toxic products of combustion, burns, traumatic injury, exposure to hazardous materials, radiation, a variety of other singular causes, or a combination of factors.

A better understanding of the actual causes of firefighter deaths, including all of the causal factors, will require a thorough examination of the protective clothing and equipment that are involved in the incident, a detailed analysis of the situation, and the details that can only be obtained through an autopsy, such as carboxyhemoglobin levels and the presence of toxic products in the respiratory and circulatory systems.

#### Firefighter Death Classification

The joint USFA/NFPA annual analysis of firefighter line-of-duty deaths uses nine categories to describe the mechanism of injury, which are defined in NFPA 901, *Uniform Coding for Fire Protection*. Statistics are compiled according to the cause of death as listed on the death certificate for each case. Additional information may be provided to further define the cause, when incident reports and witness accounts are available. The nine causal categories reported in the USFA/NFPA system are:

- Fell/slipped
- Struck by
- Overexertion/Strain
- Fire Department Apparatus Accident
- Caught/Trapped
- Contact with/Exposure to
- Exiting or Escaping/Jumped
- Assaulted
- Other

While cardiac arrest and other stress-related fatalities are the leading cause of fireground deaths, this classification system does not differentiate the causes of cardiac- and stress-related cases; all are classified as "Overexertion/Strain." Although firefighting is widely recognized as a highly stressful occupation, the physiological and psychological effects of job-related stress have not been clearly established or differentiated, particularly as they affect mortality and morbidity.

The annual USFA/NFPA report also describes firefighter fatalities according to the nature of the death (i.e., the medical cause death), using the following fifteen categories:

- |                   |                 |               |
|-------------------|-----------------|---------------|
| ■ Cardiac arrest  | ■ Drowning      | ■ Aneurysm    |
| ■ Internal trauma | ■ Stroke        | ■ Fracture    |
| ■ Asphyxiation    | ■ Electrocution | ■ Heat stroke |
| ■ Crushing        | ■ Hemorrhage    | ■ Pneumonia   |
| ■ Burns           | ■ Gunshot       | ■ Other       |

It should be noted that the USFA/NFPA categories do not correspond with International Classification of Disease (ICD-9) or SNOMED (Standardized Nomenclature of Medicine) cause categories.

## **Trends in Line-of-Duty Deaths**

The overall downward trend in line-of-duty deaths has been primarily driven by the downward trend in deaths during fireground operations or while at the fire scene. Fireground deaths account for more than half (963) of all firefighter duty deaths over the last 15 years. Training deaths increased significantly from an average of 5.2 deaths per year during the first 9 years to 11.5 deaths per year during the last 6 years of the period. Responding to and returning from alarms accounted for 26.3 percent of the deaths over the 15-year period.

Heart attacks lead all categories of line-of-duty deaths. Between 1977 and 1991, 45 percent of all firefighter deaths resulted from cardiac disorders, most from myocardial infarction. The proportion of deaths resulting from heart attacks has varied from 33.6 percent to 53.9 percent over the 15-year period.

Fahy (1993) reported that an NFPA study of fatal firefighter heart attacks conducted for the United States Fire Administration determined that about 40 percent of the firefighters who died on duty from heart attacks between 1981 and 1990 (and for whom medical documentation was available) had prior histories of cardiac ischemia, myocardial infarction, or coronary artery bypass surgery. An additional 39 percent had prior histories of acute atherosclerosis (defined as more than 50 percent occlusion); most of these cases involved occlusions greater than 70 percent. Any of these conditions could have represented sufficient cause for disqualification from continued firefighting duty under the provisions of NFPA 1582, *Medical Requirements for Firefighters*, which was adopted in 1992.

The adoption of health maintenance and physical fitness requirements for firefighters is a controversial subject and the requirements of NFPA 1582 have not been widely adopted. This subject is further complicated by the provisions of the Americans

with Disabilities Act (ADA), which may restrict the ability of fire departments to limit the duties of high risk individuals.

## **Investigation of Line-of-Duty Deaths**

Fire suppression and emergency operations are inherently dangerous; however, the data on firefighter line-of-duty deaths presented by the statistics in this document suggest that a significant proportion of firefighter deaths, particularly those on the fireground, are preventable. The International Association of Fire Chiefs (IAFC) has developed the *Guide for Investigation of a Line-of-Duty Death*, which provides a systematic approach to the overall investigation of fireground fatalities. The IAFC guide notes that an autopsy should be requested for every line-of-duty death and the results of the autopsy should be included in the report of the investigation.

There has been a significant decline in the number of firefighter deaths during fireground operations, particularly from exposure to combustion products, which appears to be related to the increased use of better protective equipment. Firefighter deaths due to cardiac ailments remain a significant concern, as do traumatic injuries from vehicle accidents and training accidents.

Evaluating the thermal performance of various types of firefighter protective clothing is an example of an area where considerable insight can be gained through accurate anatomical descriptions obtained from an autopsy. Toxicological studies can help investigators better understand the effectiveness of SCBA use and operating procedures on preventing fireground exposures to hazardous atmospheres. Evaluations of body fat, muscle development, and special coronary studies can help develop a database on the relative fitness of firefighters. These types of studies will help reinforce lessons which should help the fire service improve fireground operating procedures, protective equipment, training, and physical fitness. They can also help support the development and use of criteria for regular medical evaluations for firefighters.

If the number of line-of-duty deaths continues to decline it will become more difficult to evaluate improvements in firefighter safety through the mortality statistics. This will place increased emphasis on the need for a detailed investigation and documentation of each and every line-of-duty death. It is a matter of compelling public interest that information about the cause and manner of all firefighter line-of-duty deaths should be thoroughly and systematically collected. The autopsy results should be an important part of the record in each case.

## **Fire Toxicology**

A complete understanding of the cause of a firefighter's death must include some consideration of toxicological agents that may have been involved and how they may have interacted with the deceased's biological processes and systems to cause death. For

instance, did the inhalation of carbon monoxide result in cardiac ischemia and subsequent cardiac arrest? Did a toxin enter the body through some route other than the respiratory system? Did protective clothing or self-contained breathing apparatus (SCBA) fail to protect the user, or was the user's air supply depleted? These conditions are often accompanied by other injuries which may or may not themselves have caused death, such as crushing forces or prolonged exposure to high radiant heat levels.

Toxicology reports in most autopsies document the positive and negative findings of a series of tests conducted to detect specific substances which may have caused death. Such tests commonly include tests for the presence of pharmacological agents and illegal drugs. In the case of fire victims, the toxicology report should include blood, urine, other body fluids, and tissue analyses for the presence of combustion products and other toxicants (and their biomarkers), as well as alcohol and drugs.

The most common products of combustion are carbon monoxide and either soot or ash, however, acrolein, cyanide, formaldehyde, hydrogen chloride, phenol, phosgene, polyaromatic hydrocarbons (PAHs), nitrogen oxides, sulfur oxides, water vapor, and carbon dioxide may also be present. Blood tests for the presence of ethyl alcohol are typically conducted to determine whether the deceased was under the influence of an intoxicating beverage at the time of death. Urinalysis should include tests for the presence of common narcotics, barbiturates, amphetamines, hallucinogens, or cannabinoids. Tests for other prescription and non-prescription drugs are occasionally performed to detect such compounds as common steroids, analgesics, and other indicators of co-existing illnesses/conditions, as well as of drugs used in emergency resuscitation attempts.

## **Personal Protective Equipment**

Detailed knowledge of the manner of death requires, among other things, an evaluation of the performance of the firefighter's personal protective equipment, which includes protective clothing and breathing apparatus. There is voluminous anecdotal evidence that failure to use proper protective equipment has been responsible for many of firefighter injuries, illnesses, and deaths.

The use of self-contained breathing apparatus (SCBA) has significantly reduced the number of firefighter injuries and deaths that are attributable to smoke inhalation. While thermal and respiratory injuries remain a concern in cases of firefighter autopsies, the widespread use of SCBA has introduced new considerations into the evaluation of these injuries. For example, knowing that a firefighter's death was the result of inhalation of combustion products, when the firefighter was using an SCBA, would indicate the need to fully evaluate the performance of the SCBA.

Experts may need to be consulted to determine how a firefighter's protective clothing and equipment performed or failed to perform. The National Institute of Occupational Safety and Health and several independent consultants are available to assist in the evaluation of personal protective equipment.

### **Non-Line-of-Duty Deaths**

Because of their repetitive exposure to toxic environments and carcinogens, many firefighters are concerned that they are at a higher risk to die prematurely, particularly as their longevity on the job increases. The causes of firefighter deaths that occur off-duty (or non-line-of-duty) can sometimes be attributed to one exposure or to a series of exposures to toxins. There have been some major, well documented exposures of firefighters to certain known carcinogens. It has been suggested, for instance, that fires in occupancies manufacturing or storing chemicals in Elizabeth, New Jersey and Fort Lauderdale, Florida are responsible for increased incidence of cancer among the firefighters who fought these blazes.

In recent years, as many as 29 cases of cancer, including 19 cancer deaths, have occurred among the approximately 100 firefighters who fought a fire in 1968 at the Everglades Fertilizer Plant in Fort Lauderdale, Florida. All but one of these cases was diagnosed after the firefighter had retired or resigned from the fire department. This case has prompted the National Institutes of Occupational Safety and Health (NIOSH) to initiate an epidemiological study of firefighters involved in the Everglades fire.

It can be very difficult to directly attribute a non-line-of-duty death to a line-of-duty exposure, especially if the exposure occurred years before the death. Comprehensive autopsies of firefighters whose death may have been caused by a line-of-duty exposure could help establish a better understanding of the relationship between exposures and premature deaths, however this will require much better data be obtained and maintained than is currently the norm.

Many fire departments have mandated physical requirements and medical examinations for firefighters. Regular medical exams and physical testing can track a firefighter's physical and medical status from hire to retirement, and can serve as a baseline against which to compare, especially after an incident or series of incidents where a firefighter may be concerned that an exposure has jeopardized his or her health. Records of exposures to particular toxins should be kept by the fire department along with the medical records. Such documentation would be valuable in determining whether an exposure led to medical problems, or whether a non-line-of-duty death is related to firefighting or other emergency or occupational activities.

The firefighter autopsy protocol is primarily intended to be applicable to line-of-duty deaths, however it would also be appropriate for non-line-of-duty deaths where an occupational factor is suspected to be involved in the cause of death. For most firefighter deaths which are not duty-related or which involve former firefighters, existing clinical autopsy procedures consistent with the individual's medical history should be appropriate. The USFA firefighter autopsy protocol has been designed to uncover pertinent forensic information consistent with the distinct occupational aspects of firefighting.

## **Firefighter Health**

Several studies have looked at the frequency of premature death rates among active and retired firefighters. Rubin (1992) has described the relationships between the hazards of fire suppression and the risk of premature death from heart disease or cancer as "Firefighter's Disease." He notes that relatively little research has been conducted on firefighter mortality and morbidity or the medical treatment of firefighters.

Rubin proposes that a concern for firefighter health should begin with prevention. He suggests that diet, lack of exercise, and lifestyle may be as responsible for premature firefighter deaths as any job-related exposure. The relationships of lifestyle, exercise, and diet with firefighter mortality appear to be more than just conjecture. Epidemiological studies have demonstrated that firefighters are much less likely than the general population to die from natural causes at a given age, early in their careers, because they must be healthier than the average person to pass the rigorous health and fitness standards in order to be hired or approved for volunteer duty. The death rate for firefighters catches up with the rest of the population by their retirement age, which suggests that the so-called "healthy worker effect" diminishes with time, especially if the individuals do not take care of themselves. This takes into account the factor that firefighters tend to retire at a younger age than the general population.





#### IV. PUBLIC SAFETY OFFICER BENEFITS PROGRAM

The Bureau of Justice Assistance of the U.S. Department of Justice, administers the Public Safety Officer Benefits (PSOB) program, which was established by Congress to provide death benefits to family members of "public safety officers found to have died as the direct and proximate result of a personal injury sustained in the line of duty." (28 CFR 32.1).

##### Evaluation Criteria

Title 28, Part 32 of the *Code of Federal Regulations* outlines the eligibility criteria for receiving benefits under this program. Claimants are required to demonstrate that the injury resulting in the death of the public safety officer was the direct result of activities performed in the line of duty. Several claims have been filed in cases where the death resulted from disease or chronic health conditions that were not clearly related to a specific on-duty event. Many of the claims involving deaths resulting from chronic health conditions, such as coronary artery disease, hypertension, and cancer, have been denied because causality could not be clearly and convincingly demonstrated.

Several states have adopted statutes or regulations that establish a presumption in the case of firefighters, that any cardiac or pulmonary disease is occupationally related. Most of these presumptive regulations were adopted in an era when firefighters were routinely exposed to products of combustion without respiratory protection. Some states have more recently extended this presumption to cover cancer as well.

To determine when cardiac deaths could be considered duty-related under the PSOB regulations, an expert panel was convened by the Law Enforcement Assistance Administration, in April 1978 to consider the relative contributions of carbon monoxide and heart disease in firefighter deaths. As a result of this meeting, a standard was established for evaluating claims involving heart attacks, based on evidence that carbon monoxide can increase the susceptibility of an individual to a sudden myocardial infarction. This standard requires that in order to be considered eligible for PSOB compensation, non-smoking firefighters must have a blood carboxyhemoglobin (COHb) level above 10 percent by volume and that firefighters who smoke must have COHb levels above 15 percent by volume. Even if these criteria are met, benefits can still be denied if the medical examiner or coroner performing the autopsy and the pathologist reviewing the case for PSOB determine that carbon monoxide inhalation was not a significant factor in the death or the COHb level found was not a direct causal factor as defined in the PSOB regulations.

In addition to the requirement to demonstrate that the personal injury was incurred in the line of duty, PSOB awards are contingent upon a finding that the death was not caused by intentional misconduct, grossly negligent conduct, or intoxication of

the deceased. The Department of Justice has never denied a PSOB claim on the basis of intentional misconduct or gross negligence on the part of the deceased, and denials for intoxication have been rare.

## **Program History**

Between 1976 and 1992, 1,428 firefighter claims were reported to the PSOB office. During this period, 855 cases were approved and 603 were denied. (The additional cases include 30 carried over from previous years.) The majority of the cases denied involved coronary artery or related cardiovascular diseases without supporting evidence of elevated COHb levels.

The PSOB regulations do not require that an autopsy be performed to document the cause of death. Only a death certificate must be provided to establish death and indicate the proximate cause; however, cases can be delayed or complicated by failure to provide toxicological evidence to support the cause of death or rule that intoxication is not involved. According to PSOB officials, autopsy reports were submitted in approximately half of the cases processed; however, the overwhelming majority of those for which claims were denied involved cases where no autopsy was performed. PSOB officials point out that of the claims denied, the majority involved cardiac deaths which were unlikely to qualify, even if autopsies had been performed.

## **Issues and Concerns**

Due to the substantial number of firefighter line-of-duty deaths caused by heart attacks, firefighters have expressed considerable interest in the standards used to evaluate these cases. Although it is generally accepted that carbon monoxide exposure can cause cardiac ischemia and subsequent death, considerable disagreement exists regarding the assumption that exposure to combustion products should be the sole determinant to qualify individual heart attack cases as job-related. Many individuals and organizations in the fire service contend that several job-related factors conspire to increase a firefighter's risk of acquiring heart disease.

Similar arguments surround the question of chronic conditions such as cancer. Department of Justice officials indicate that only two claims have been paid in the last 15 years for cancer deaths. Both of these cases involved police officers who died of testicular cancer and in each case there was substantial evidence that the cancer resulted from a single job-related exposure. While it has been established that firefighters routinely operate in environments filled with toxic and carcinogenic compounds, no firefighter cancer death claims have been approved under the PSOB regulations.

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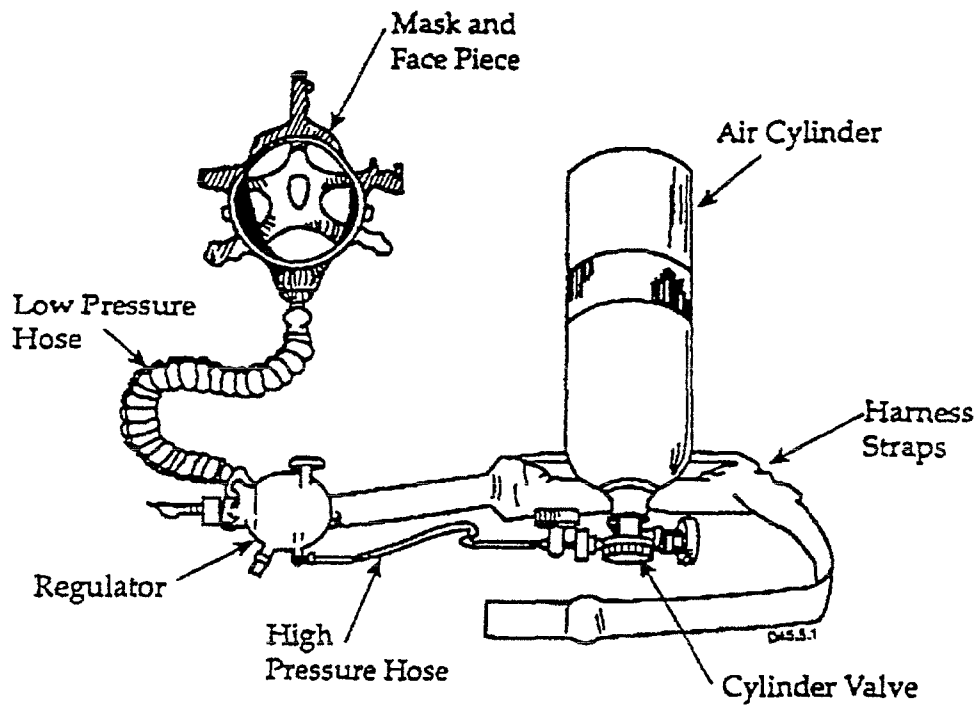
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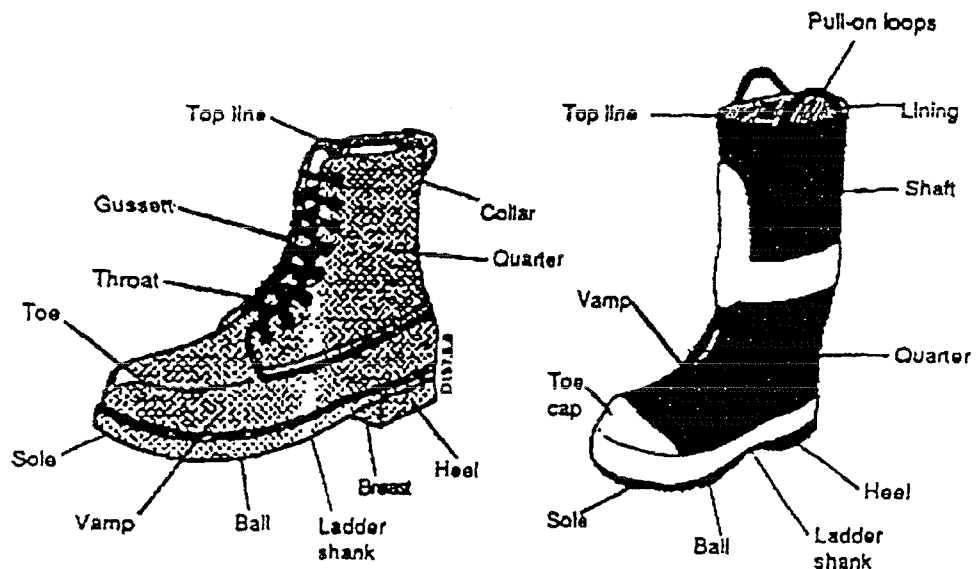


**APPENDIX 1**

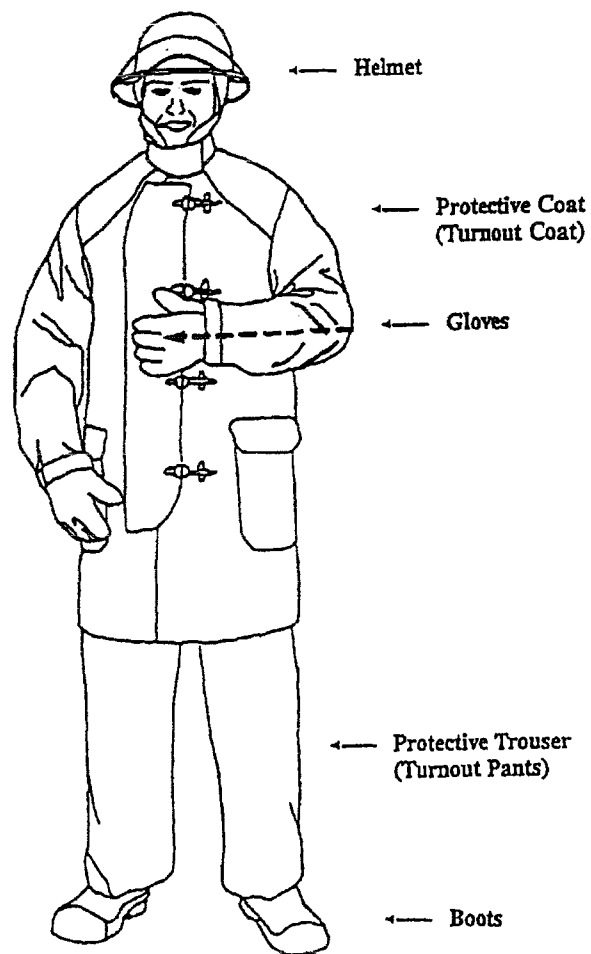
**Firefighter Personal Protective Equipment**



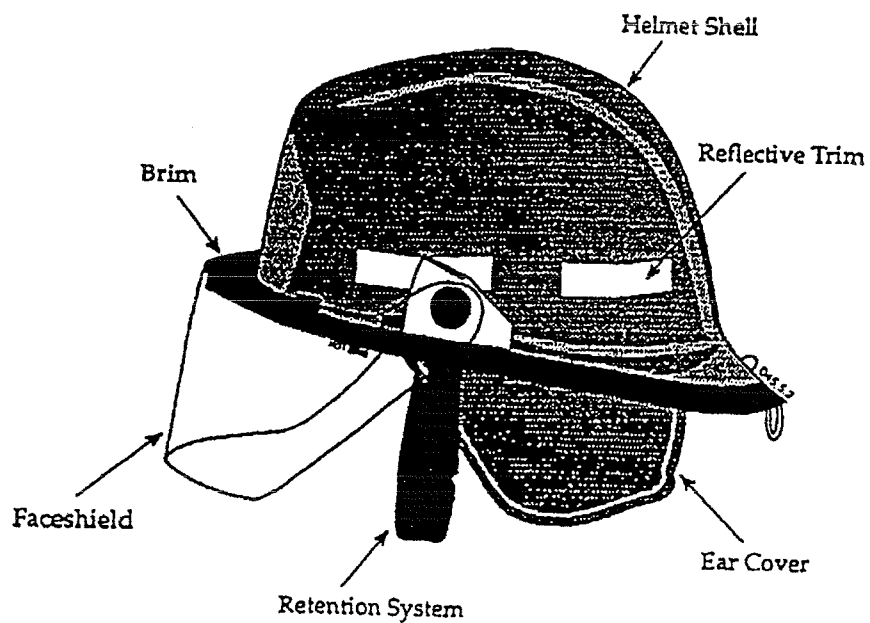
**Typical Self-Contained Breathing Apparatus (SCBA)**



**Typical Boots**



**Typical Protective Clothing Ensemble  
(Full Ensemble Includes SCBA)**



**Typical Helmet**



# **FIREFIGHTER AUTOPSY PROTOCOL**



**October 1994**

October 1994	UNITED STATES FIRE ADMINISTRATION Firefighter Autopsy Protocol	Page 1
	PROTOCOL	DISCUSSION
<p><u>I. Preliminary</u></p> <p>A. Circumstances of Death</p> <ol style="list-style-type: none"> <li>1. Line-of-Duty               <ol style="list-style-type: none"> <li>a. Fire suppression activity</li> <li>b. Other official activity</li> </ol> </li> <li>2. Non-Line-of-Duty               <ol style="list-style-type: none"> <li>a. Active firefighter, unrelated activity</li> <li>b. Former firefighter activity</li> </ol> </li> </ol> <p>B. Medical Records Review</p> <ol style="list-style-type: none"> <li>1. Fire department injury/exposure records</li> <li>2. Current medical conditions/medications               <ol style="list-style-type: none"> <li>a. Prescribed</li> <li>b. Over-the-counter</li> <li>c. Administered by paramedics</li> </ol> </li> </ol> <p>C. Complete Work History</p> <ol style="list-style-type: none"> <li>1. Length of fire combat duty</li> <li>2. Other jobs held during fire service</li> <li>3. Jobs held after fire service</li> </ol> <p>D. Scene Investigation</p> <p>E. Scene Photography</p> <p>F. Jurisdiction/Authority to Conduct Autopsy</p>	<p>Firefighters are subject to many uncommon occupational hazards, including toxic and superheated atmospheres, explosions, falls, crushing/penetrating forces, contact with fire, electricity, or hazardous materials, and extremely strenuous and stressful physical activities.</p> <p>The autopsy results may be essential to determine why or how a firefighter was incapacitated, how the activity related to the cause of death, and whether protective equipment performed properly. Having a clear picture of the nature of firefighting operations that were taking place (and to which the deceased was assigned) will assist in identifying possible mechanisms of injury. If the firefighter was reported missing, try to determine the time of last contact or the length of time between the initial report and the finding of the body.</p> <p>The fire department should have an officer or internal Line-of-Duty Death Investigation Team assigned to conduct a death investigation. Other investigators may include the police, the state fire marshal (or other state officials), and/or federal/state agencies responsible for occupational safety and health. Consult with these officials as necessary.</p> <p>In conducting the medical records review, obtain a documents which pertain to the incident. Document the occupational history of the deceased, including the number of years assigned as a "combat" firefighter, any history of unusual exposures (or changes in frequency of exposure) to hazardous substances, and any relevant occupational medical history. Finally, all recent medical history should be reviewed, including documentation of any attempts at on-scene resuscitation.</p>	

October 1994	UNITED STATES FIRE ADMINISTRATION Firefighter Autopsy Protocol		Page 2
	PROTOCOL	DISCUSSION	
<p><b>II. Initial Examination</b></p> <p>A. Identification of Victim</p> <p>B. Document Condition of Personal Protective Equipment (PPE)</p> <p>1. Refer to PPE Identification Diagrams on page 6 for standardized nomenclature PPE description should include:</p> <ol style="list-style-type: none"> <li>Turnout coat</li> <li>Turnout pants</li> <li>Helmet</li> <li>Gloves</li> <li>Boots</li> <li>Self-Contained Breathing Apparatus</li> <li>Personal Alert Safety System (PASS)</li> <li>Protective hood</li> <li>Clothing worn under turnouts</li> </ol> <p>2. Use photographs to enhance documentation</p> <p>C. Maintenance of Custody of Equipment</p>		<p><b>Exercise caution when handling contaminated personal protective equipment (PPE), especially from hazardous materials incidents, as residue may be harmful to those involved in the autopsy.</b></p> <p>PPE should be sealed in a metal can/drum if fire accelerants or other volatile/toxic chemicals are suspected to be present; otherwise PPE should be air-dried and preserved for examination. Preservation of the original state of PPE, including clothing, is essential. PPE should be considered as evidence, and handled accordingly. The Death Investigation Team should perform or assist in the evaluation/documentation of PPE condition and performance. Documentation of the chain of custody of the PPE is required, especially as it may be examined by a number of individuals. Upon completion of any examination, PPE should be secured in an evidence storage area. (International Association of Fire Chiefs. 1993. <i>Guide for Investigation of a Line-of-Duty Death</i>. Fairfax, VA: pp. 14, 19).</p> <p>Observations and photos recorded at the scene should indicate whether the deceased was found wearing self-contained breathing apparatus (SCBA) and/or other PPE. If SCBA and personal alert safety system (PASS) are user-controlled, were they properly activated or working at the time of discovery of the deceased? A swab from the inside of the SCBA facepiece may help in determining operability.</p> <p>A qualified specialist should inspect the PPE and note any damage. The National Institute for Occupational Safety and Health (NIOSH) can assist in the determination of any contribution of the deceased's SCBA to the death. PPE manufacturers may be able to assist in evaluating damage, but PPE should <u>not</u> be returned to the manufacturer for examination (because of concerns about product liability). Breathing apparatus filter cartridges, if any, should be retained.</p>	

October 1994	UNITED STATES FIRE ADMINISTRATION Firefighter Autopsy Protocol	Page 3
PROTOCOL	DISCUSSION	
<b>III. External Examination</b>  A. Document Condition of Body 1. Photograph 2. Radiograph  B. Document Evidence of Injury  C. Document Evidence of Medical Treatment  D. Collect Evidence from External Surfaces 1. Swabs of nasal/oral soot or other substances 2. Hair 3. Injection Sites  E. Collect Vitreous Fluid  F. Document Bums 1. Location 2. Degree 3. Etiology 4. Percentage of body surface area (BSA)  G. Biopsy Skin Lesions	<p>Firefighters are trained to provide emergency medical care for fire casualties. Of particular importance is that resuscitative efforts for fellow firefighters are likely to be heroic and prolonged. This fact should be taken into account when examining the body for evidence of medical intervention <u>and</u> when interpreting the results of blood gas assay.</p> <p>Note the presence of soot or other unidentified substances on the skin and place samples (swabs) in a sealed container.</p> <p>Certain internal samples (such as soot swabs and vitreous fluid) which can be done before the body is opened are taken at this point because collection can be accomplished in a more controlled manner, thus reducing the potential for cross-contamination of the surfaces.</p> <p>Hair samples should be about the thickness of a finger, pulled out so as to include the roots, tied around the middle, with the proximal and distal ends marked, and stored in a plastic evidence bag.</p> <p>Vitreous fluid should be taken from both eyes. Vitreous fluid can be used to corroborate blood alcohol levels.</p>	

October 1994	UNITED STATES FIRE ADMINISTRATION Firefighter Autopsy Protocol	Page
PROTOCOL	DISCUSSION	
<p><b>IV. Internal Examination</b></p> <p><b>A. Document Evidence of Injury</b></p> <p><b>B. Document Evidence of Medical Treatment</b></p> <p><b>C. Describe Internal Organ System</b></p> <p><b>D. Collect Samples for Toxicologic Analysis</b></p> <ol style="list-style-type: none"> <li>1. Blood (2 x 20cc red- and grey-top tubes)</li> <li>2. Urine (20 to 30cc) and/or trimmed bladder</li> <li>3. Bile (all available) or Gallbladder (if bile unavailable)</li> <li>4. Cerebrospinal Fluid (up to approx. 30 ml)</li> <li>5. Soot swabs from airway               <ol style="list-style-type: none"> <li>a. Tracheal</li> <li>b. Bronchial</li> </ol> </li> <li>6. Representative sampling of gastric and duodenal contents (50g; note total amount)</li> <li>7. Take and retain fresh-frozen samples               <ol style="list-style-type: none"> <li>a. Lung 100g</li> <li>b. Kidney 100g</li> <li>c. Liver 100g</li> <li>d. Spleen 100g</li> <li>e. Skeletal muscle (Psoas or Thigh) 20g</li> <li>f. Subcutaneous fat 20g</li> <li>g. Section of bone with marrow (3-4 cm)</li> <li>h. Brain 100g</li> </ol> </li> <li>8. Additional specific samples to be taken:               <ol style="list-style-type: none"> <li>a. Tied-off lower lobe of right lung (store in arson debris paint can)</li> <li>b. Peripheral blood from leg vein (fluoridated and red-top tubes)</li> <li>c. Any specimens taken in field or during hospital resuscitation</li> <li>d. Sample hematomas</li> <li>e. Any other sites should be labelled</li> </ol> </li> </ol>	<p>Soot swabs should be obtained from the upper and lower airways as well as from the inside of the SCBA facepiece. These will assist in the determination of SCBA usage and operability.</p> <p>Note any unusual odors/colors of anything found during the internal examination.</p> <p>Fresh-frozen samples of vital organs should be taken and retained a minimum of 90 days, preferably longer as storage space permits.</p> <p>An area of growing interest is the cancer rate of firefighters. Potentially cancerous tissue should be biopsied and saved. Additionally, histological type and the exact location of the tumor (if site-specific) within an organ should be documented in detail.</p> <p>In the case of incinerated remains, bone marrow or spleen may be the only source of tissue for toxicological studies, especially for those establishing carbon monoxide levels.</p> <p>Gastric and duodenal contents should be representative. Solid dosage forms should be removed, counted, and analyzed.</p> <p>When taking lung samples, use the right lung because aspirated foreign materials have a greater propensity to lodge in the right lung.</p>	

## PROTOCOL

## DISCUSSION

V. Toxicological Examination

- A. Urine Screen/Analysis
  1. Volatile compounds (e.g., Benzene, Hydrocarbons including accelerants, Ethanol)
  2. Psychoactive substances (e.g. Opiate derivatives, Marijuana metabolites, Cocaine metabolites, Stimulants, Phencyclidine)
- B. Blood Analysis
  1. Carboxyhemoglobin, Methemoglobin, Sulfhemoglobin
  2. Volatile compounds (see A.1. above)
  3. Other (e.g., Hydrocyanic Acid, Flouride)
  4. Confirm results of positive urine screen
- C. Subcutaneous Fat Analysis
  1. Organic compounds, including:
    - a. Herbicides
    - b. Pesticides
  2. Polychlorinated Biphenyls (PCBs)
- D. Soot Screen (from swabs)
  1. Metals, including:
    - a. Arsenic
    - b. Antimony
    - c. Lead
  2. Organics, including:
    - a. Pesticides
    - b. Herbicides
    - c. **Vinyl Chloride**
    - d. Acrylonitrile
    - e. Acrolein
  3. Particulate analysis

The toxicologic analysis performed for firefighters should be of a higher order than that performed for civilian fire casualties. In addition to ascertaining blood levels of various toxic products that are commonly found in a fire environment, it is beneficial to know about the presence of any judgment-impairing substances. This may be important in the determination of eligibility for death benefits as well as for determining causality.

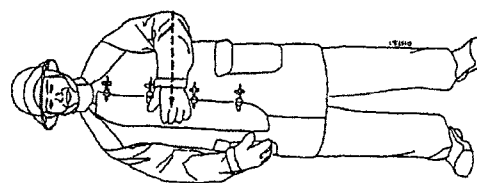
Determination of specific levels of metals, organic compounds, and gross particulate matter should be conducted because firefighter exposure to these substances is believed to be greater than that for civilians. Additionally, this information may yield important clues about the cause, manner, and mechanism of firefighter death.

Use vitreous fluids or bile to confirm presence of ethanol in either blood or urine.

Use caution when noting the presence of Hydrocyanic Acid as it can be produced by bacterial decomposition within the tissues of the deceased.

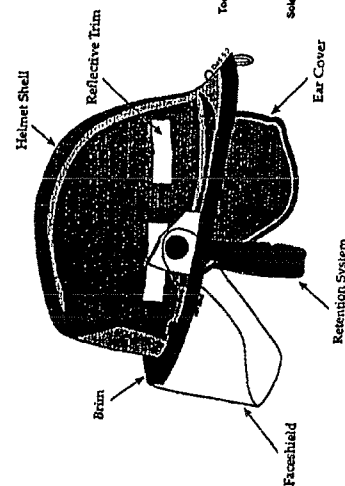
Check for the presence of PCBs in the subcutaneous fat, as this will help in the determination of a history of exposure.

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PROTOCOL		DISCUSSION	
VI. Microscopic Examination		Representative samples of all organs and body systems should be collected. The sections should be microscopically examined for malignant neoplasms and other abnormalities, including suggestive pre-malignant changes	
A. Findings of Microscopic Examination			
VII. Summary of Pathological Findings		State objective findings related to gross and microscopic examinations. Correlate physical circumstances, toxicological analyses, and other investigative studies to pathological findings.	
A. Medical Facts			
1. Correlation			
VIII. Conclusions		Include determination of <b>cause and manner</b> of death. Describe discrepancies between evidence collected or observations of eyewitnesses and the autopsy findings.	
A. Discrepancies			
1. Inconsistent observations			
2. Differences between death certificate and subsequent findings			
B. Conclusions			
1. List diagnoses on a separate page			
2. Cause and manner of death			

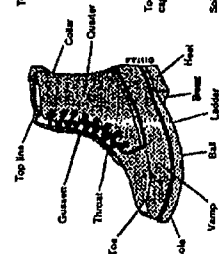


Protective Clothing Ensemble  
(Full PPE Includes SCBA)

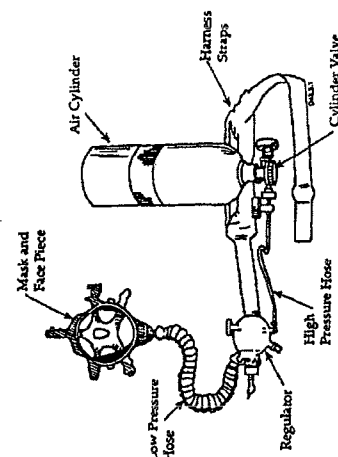
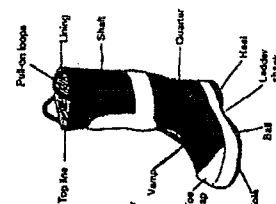
Sample Firefighter Personal Protective Equipment (PPE) Identification Diagrams  
(actual PPE styles vary depending on manufacturer)



Helmet



Boots



Self-Contained Breathing Apparatus



# **Fire Department Transport Vehicle**

**Vehicles provided by  
Independence Lincoln Mercury  
Courtesy of Joe Lucito**





# **Fire Department Transport Vehicle**

**Vehicles provided by  
Independence Lincoln Mercury  
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# **Fire Department Transport Vehicle**

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