

**RAPID INTERVENTION TEAM OPERATIONS  
STANDARD OPERATING PROCEDURES**

Strategic Management of Change

By: Sam Hansen, Battalion Chief  
Vestavia Hills Fire & Rescue  
Vestavia Hills, AL

An applied research project submitted to the National Fire Academy as part of the  
Executive Fire Officer Program

October 2000

## ABSTRACT

The purpose of this research project was to develop a standard operating procedure for Rapid Intervention Team operations for the Vestavia Hills Fire Department, which previously did not have a standardized written procedure for conducting Rapid Intervention Team (RIT) operations. The author also explored the readiness of other fire departments in Jefferson County, Alabama to perform Rapid Intervention Team operations. The research questions were as follows:

1. What regulations and national consensus standards exist concerning Rapid Intervention Team operations?
2. What type of equipment is needed by Rapid Intervention Teams?
3. What elements are needed for an effective Rapid Intervention Team SOP?
4. What is the state of readiness of the fire services within Jefferson County, Alabama to perform Rapid Intervention Operations?

These research questions were answered using the action and evaluative research methods. The action research method was utilized to develop a Rapid Intervention Team standard operating procedure and a RIT rescue equipment list for the Vestavia Hills Fire Department. The evaluative research method was used in determining, through a response survey, the readiness of other fire departments in Jefferson County, Alabama to perform Rapid Intervention Team operations. This project indicated the need for fire departments to better prepare for the rescue of trapped or lost firefighters at structure fires by

(1) embracing the OSHA Respiratory Protection Standard, (2) consulting the NFPA standards of recommended practice, and (3) developing and implementing standard operating procedures along with competency base-training.

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## INTRODUCTION

The Vestavia Hills, Alabama, Fire Department (VHFD) is a municipal department consisting of 66 line personnel, fire administrative positions and 11 fire alarm dispatchers. Operations are conducted on a three platoon rotation from four fire stations.

The department provides a wide variety of important services to its customers. These services include fire prevention, public education, fire suppression, hazardous materials mitigation, confined space rescue, and emergency medical services, including transportation of the sick and injured. The majority of the fire suppression services provided require confinement and extinguishment of residential structure fires.

The Vestavia Hills Fire Department executes fire suppression tactical operations at structure fires by providing strong incident command, utilizing a personnel accountability system and following fire-ground standard operating procedures (SOPs). However, the department previously has not had a standard operating procedure for Rapid Intervention Teams (RIT) operations.

In recent years, SOPs for RIT operations have come to be regarded as critical for fire fighter safety. Morris (1996), states in reference to Rapid Intervention Team deployment, "The importance of a written standard operating procedure that outlines a standardized and predictable response cannot be overstated. If your fire department does not have such an SOP, develop one quickly." On May 11, 2000, fire ground safety policies were formally discussed at a staff meeting of the operational division of VHFD. The five battalion chiefs comprising the meeting unanimously agreed that the department needed an SOP for RIT operations.

The purpose of this Executive Fire Officer research project was to develop the standard operating procedure to be followed by Vestavia Hills Fire Department personnel in the event that RIT deployment is required during fire suppression operations. The research also attempted to evaluate the readiness of other fire departments in Jefferson County, Alabama to perform Rapid Intervention Team operations.

The action and evaluative research methods were used to ascertain the pertinent information for this project. A comprehensive literature review was conducted. The literature review covered numerous periodicals, text books, and newsprint articles. A response survey was used to evaluate the RIT capability of other fire departments within Jefferson County.

The research process attempted to answer the following research questions:

1. What regulations and national consensus standards exist concerning rapid intervention operations?
2. What elements are needed for an effective Rapid Intervention Team SOP?
3. What type of equipment is needed by Rapid Intervention Teams?
4. What is the state of readiness of the fire services within Jefferson County, Alabama to perform rapid intervention operations?

## BACKGROUND AND SIGNIFICANCE

The Vestavia Hills Fire Department is celebrating its 50th anniversary this year and to date, the department has not experienced a firefighter fatality during any fire suppression operations, although there have been a few close calls. Nationwide, the number of firefighters who died on the fireground is at an all-time low, but we are still losing friends and co-workers during fire suppression operations (Norman, 1997). This point was tragically driven home for the author on April 20, 2000 when Ricky Davis, a personal friend and follow-firefighter, was killed while engaged in interior operations at a residential fire (see figure 1).

**Figure 1**  
**Birmingham News Article**

**The Birmingham News**  
**FRIDAY**  
APRIL 21, 2000

Community news	3C
State Briefs	4C
Obituaries	6C
Weather	8C

# Firefighter dies in blaze

**By TORAINE NORRIS**  
*News staff writer*

A Center Point firefighter died Thursday evening while battling a house fire.

Ricky Davis, 32, a fireman at Center Point Fire Station No. 2, fell through the floor while fighting the blaze at 2220 First Place NW about 5 p.m., authorities said.

Davis was flown by LifeSaver helicopter to Carraway Methodist Medical Center where he died at 6:15 p.m., said Jennifer Dodd, hospital spokeswoman.

The nature of his injuries was not released Thursday night.

His death shocked firefighters and witnesses who watched as Davis was pulled from the one-story house. Witnesses said Davis was apparently not breathing when he was brought outside and placed on a stretcher.

"This is the first loss we've ever had," sighed Mark Sims, president of the Center Point Fire Board as firefighters combed the home's remains.

Board members said Davis' comrades were receiving grief counseling Thursday night to help them deal with his death. "It's been difficult," said board member Jody Harris.

Harris said the Jefferson County Sheriff's Department and the state fire marshal were investigating the fire.

Davis, a 5-year veteran of the Center Point Fire District, also worked as a firefighter and paramedic for the Homewood Fire Department, Harris said. He is survived by a wife and three children, Harris said.

The cause of the 4:31 p.m. fire had not been determined. However, residents of the house believe the fire might have started in a basement gas heater and might have been ignited during a power outage in the area.

Melanie Gantt, 18, said her 14-year-old sister, Rachel, had just walked outside their home to check on a dog hit by a car when she heard an explosion inside the house.

"It spread quickly," she said.

Units from both Birmingham and Center Point fire departments were dispatched to the fire, which neighbors said covered the area in a deep, rolling cloud of black smoke. The house was destroyed throughout.

Ms. Gantt said her four family members had lived in the home about nine years.

Ms. Gantt said it was a miracle that no one else was injured in the blaze, especially since she and her father are usually home in the afternoon.

"It (the gas heater) was right below my bedroom," she said. "If it would have exploded while I was home, I would have been killed."

In reference to the structure where Ricky Davis was killed, an on-scene fire lieutenant said, "It's hard to believe such a little tiny house could kill you; we have extinguished hundreds of houses like this one!" (See figure 2).

**Figure 2**  
**Illustration of House Where Firefighter Ricky Davis Was Killed**

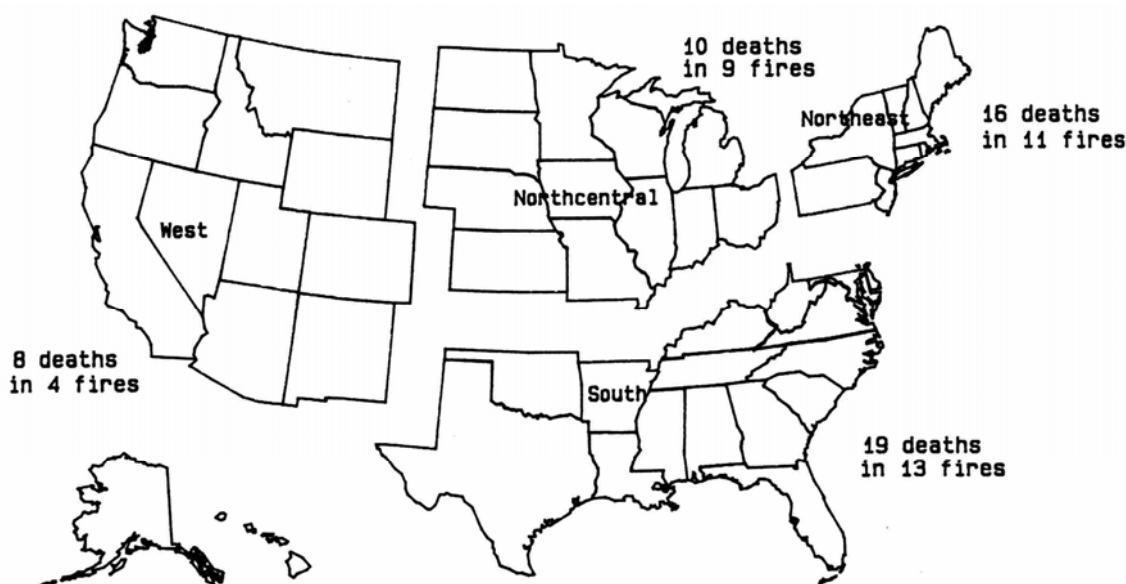


Unfortunately, Ricky's death is not an isolated occurrence. For example, In a National Fire Academy Applied Research Paper titled, "Two-In Plus Two-Out Equals More Than Four," H. T. Davis reported "In Lexington, one firefighter died and another was seriously injured while performing interior structural firefighting activities in February, 1997. Both the National Institute of Occupational Safety and Health (NIOSH) and the state OSHA investigations concluded that there was a failure to follow the two in, two out rule."

According to the Fire Analysis and Research Division of the National Fire Protection Association (NFPA 1999), the southern United States ranks first among the regions of the U.S. for firefighter fatalities in structural collapses (see figure 3).



**Figure 3**  
**Firefighter Fatalities in Structural Collapses by Region 1990-1999**



Source: NFPA

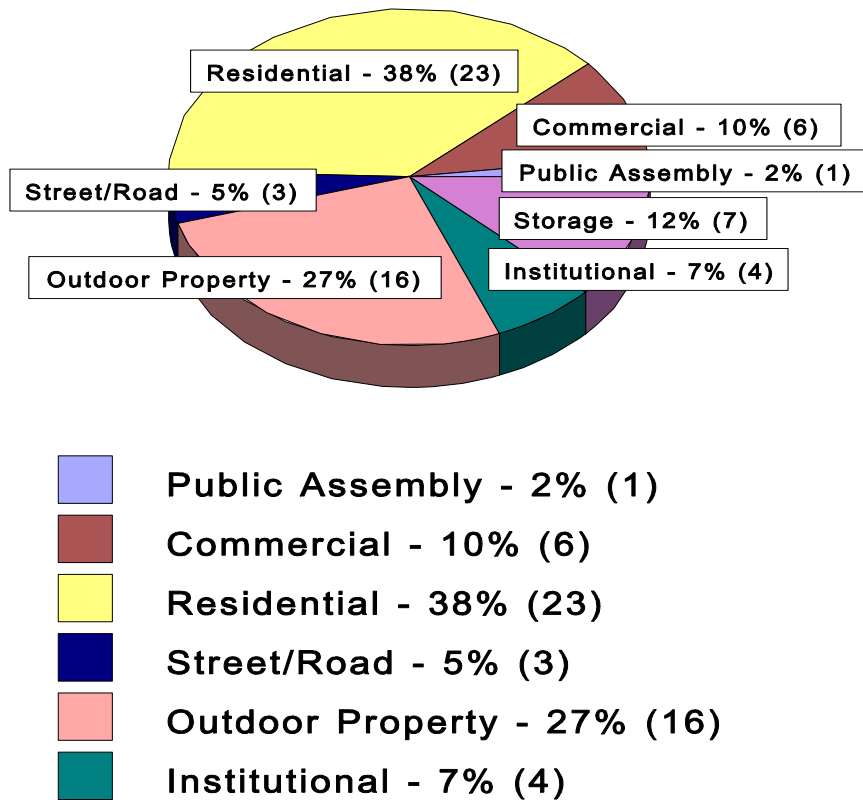
### **Patterns of Fireground Fatalities**

Washburn, Le Blanc, and Fahy (1999), report in an NFPA study that 968 firefighters died in the line of duty between 1989 and 1998. Roughly half of these deaths occurred on the fireground, with the majority of fireground fatalities occurring during structural firefighting operations. Common causes of fatalities during structural firefighting included firefighters being trapped by structural collapse (as in the Davis tragedy), firefighters being struck by collapsing materials, and firefighters becoming lost or disoriented.

Fahy (2000) reported that 112 on-duty firefighters died in the United States in 1999, which was 21 more than the 91 who died in 1998. In fact, 1999's total was the highest of the 1990's and reversed a four-year downward trend in firefighter fatalities.

Of the firefighters who died on the fireground in 1999, 23 (38%) died in residential structures, making residential fires the leading cause of death of firefighters in 1999 (see figure 4).

**Figure 4**  
**Illustration of Firefighter Fatalities By Fixed Property for 1999**



Source: NFPA

The greatest number of fires that the Vestavia Hills Fire Department responds to are residential structure fires. Our department, like many others in the United States, have an effective plan for the rescue of civilians and the protection of property, but we do not have a comprehensive plan for addressing the need to rescue our own personnel (Coleman 1999). It is a fact that we as firefighters often overlook our own safety in order to help others. However, when one of our own goes down at the fire scene, a department needs to be able to perform rescue quickly and effectively.

### **Historical Perspectives**

Regulatory actions requiring fire departments to provide rescue teams for lost or trapped firefighters, often referred to as Rapid Intervention Teams (RITs) were not promulgated until January 1998, with an implementation date of April 8, 1998. At that time, the Occupational Safety and Health Administration (OSHA) revised the Respiratory Protection standard, CFR 29 1910.134. This revision became known in the fire service as the 2-in/2-out regulation (Forque, 1992).

Careful review reveals that OSHA based the revisions to the Respiratory Protection Standard on the American National Standards Institute (ANSI) Standards Z88.5, titled, "Practices for Respiratory Protection for the Fire Service" and Z88.6, "Standard for Respiratory Protection-Respiratory Use-Physical Qualifications for personnel." The revised standard is expected to encompass an estimated 5 million workers in 1.3 million work places, including firefighters. Part of the revised standard established a broad and comprehensive regulatory framework involving respiratory protection for all workers and

stand-by rescue teams for firefighters. The revisions require that no fewer than four firefighters must be on the scene during interior operations, two of whom must be in stand-by mode outside the "immediately dangerous to life or health" (IDLH) atmosphere.

In August 1999, the National Institute for Occupational Safety and Health (NIOSH), recognizing the severity of this problem, issued an "Alert" titled "Request for Assistance in Preventing Injuries and Deaths of Firefighters due to Structural Collapse." This Alert recommended that fire departments implement and review occupational safety programs and, along with other essential steps, establish Rapid Intervention Teams—and make sure they are positioned to respond immediately if needed.

### **Strategic Management of Change and the RIT**

Implementing the Rapid Intervention Team concept will precipitate a functional change in fire-ground operations for the Vestavia Hills Fire Department. As a battalion chief and organizational leader, my role in managing this change will require the adoption of specific behaviors as outlined in Module 1 (Introduction to Change Management) from the Strategic Management of Change Student Manual.

The student manual states, "to ensure the success of the change effort, the executive fire officer must adopt certain behaviors. The executive fire officer must be a 'communicator,' which includes frequent and open communication, as well as listening. During a change, the fire officer needs to discuss the process with everyone, recognize other people's concerns, and diffuse any rumors about the change being an 'us against them' conspiracy. Executive fire officers must also assume the role of 'collaborator'

(e.g., using teams) which allows the involvement of others and opportunity to gather their input and suggestions, and provides them with a sense of ownership in the process. In addition, the executive fire officer needs to act as a ‘demonstrator,’ providing a model for other individuals to follow. By modeling the expected behaviors, the executive fire officer sets an example and illustrates his/her involvement in the process. Finally, the executive fire officer must serve as an ‘educator.’ Educating everybody about the purpose, reasons and effects of the change promotes an understanding of the larger picture, especially by those individuals who might only see the change as a nuisance (SM 1-6 and 1-7).”

By utilizing these concepts and implementing change gradually through “baby steps,” the Vestavia Hills Fire Department should be successful in implementing the RIT concept and providing safer fireground operations for all personnel.

## LITERATURE REVIEW

The problems of rescue during fire ground operations were identified many years ago and reported by numerous authors (Layman 1953). Problems of rescue can range from the simplest to the most complicated. A practical solution to a major rescue problem depends upon the ability of a commanding officer to employ every resource at his command in an efficient and resourceful manner.

Literature searches for this project began at the National Fire Academy's (NFA) Learning Resource Center (LRC) in April 2000 during the author's attendance of the Strategic Management of Change (SMOC) course.

To perform a comprehensive literature review, the following agencies were queried:

- Occupational Safety & Health Administration (OSHA)
- National Fire Protection Association (NFPA)
- National Institute of Occupational Safety Health (NIOSH)
- American National Standards Institute (ANSI)

A variety of periodicals, text books, training manuals, and newspaper articles were also queried.

Unfortunately, due to the fact that firefighters continue to die during fire suppression and rescue operations, a substantial amount of research has been documented. This section will review and discuss the causes of death among firefighters at structure fires, and the existing standards for rapid intervention operations, as represented in current literature.

### **Firefighter Fatalities at Structure Fires**

Cobb (1998) reported that firefighters are being killed and seriously injured during the initial stage of fires. Factors that contribute to early injuries and death are:

- Lightweight-wood-truss construction
- Energy-efficient windows
- Older buildings
- Lack of survival training

In describing the need for a Rapid Intervention Team, Cobb summarizes, "In several case studies, once the incident commanders become aware of missing members, there were no resources immediately available to rescue them."

Burning structures often collapse quickly with little or no warning. Firefighters working inside the structure are often trapped or struck by collapsing debris. Also, firefighters may simply become lost and run out of air.

From 1990 through 1999, there were a total of 966 firefighter fatalities, 441 of which occurred on the fireground. Fifty-three of the 302 deaths at structure fires were the result of structural collapses. This included 38 firefighters caught or trapped in 24 fires and 15 firefighters fatally struck by collapsing materials at 13 fires (NFPA Fire Analysis 2000). This report will examine these two areas separately.

### Caught or Trapped

Of the 38 firefighters caught or trapped by structural collapses, 19 were asphyxiated, 11 died of burns, and eight died of crushing injuries or internal trauma (NFPA Fire Analysis 2000, p. 1). Sixteen of the victims were volunteer and 22 were career firefighters. The largest number of deaths were the result of floor collapses (20 deaths), followed by roof collapses (16 deaths) and ceiling collapses (2 deaths). Of the 16 deaths caused by roof collapses, 12 firefighters were involved in suppression activities inside the structure at the time of the collapse.

### Struck By Collapsing Materials

Of the 15 firefighters struck by objects during structural collapses, 12 died of crushing injuries and three died as a result of internal trauma. Six of the victims were volunteer and nine were career firefighters (NFPA Five Analysis, 2000, p. 2).

### Patterns of Fatalities in Collapse Incidents

The breakdown of fatal incidents and associated fatalities by fixed property was shown in Figure 4. As stated earlier, residential dwellings ranked first among all categories in the occurrence of firefighter fatalities. Where it was possible to identify construction features, NFPA found that six of the incidents, resulting in 10 of the deaths, involved buildings with truss roofs. In these fires, the estimated elapsed time between fire department notification and collapse ranged from 9 to 42 minutes, illustrating again the potential risk to firefighters of this type of construction. The potential for structural



collapse is one of the most difficult factors to predict during initial size-up and ongoing firefighting. Overall, more than half of the victims of these incidents (58 percent) were career firefighters. Of the 37 structures involved in these fires, 31 were only one or two stories high. Five were three stories and one was four stories (NFPA Fire Analysis, p. 3).

### Lost or Disoriented Firefighter

Something as simple as taking a wrong turn within a structure, or failure to establish proper search patterns, can result in firefighters becoming lost within a structure. Unless a search pattern is established and an exit found, firefighters have little chance of reaching safety before their air supplies are exhausted, unless an RIT intervenes. The National Fire Protection Association (NFPA) has stated that in some years 20% of fireground fatalities are related to firefighters becoming lost or disoriented in buildings.

### **The Role of the RIT in Preventing Fireground Fatalities**

Routley, Bush, and Stern (1996) wrote that the most challenging problem concerning firefighter deaths is how to reduce fireground death caused by the inherent risk we normally associate with firefighting, such as being caught or trapped inside burning buildings, running out of air, falling through floors or roofs, and having things fall on us. Because of these inherent dangers to firefighters during interior operations, a Rapid Intervention Team staged and ready to spring into action, will reduce the risk.

Years ago, before we had Rapid Intervention Teams, fire chiefs (in order to stay ahead of a spreading fire) would try to have a reserve engine company and reserve ladder

company standing by at the command post. If those companies were used, they would be replaced by other companies. This proactive safety practice of command and control has been formalized and is now called a Rapid Intervention Team (RIT).

The RIT helps a fire chief react to one of the worst emergencies on the fireground—a missing or trapped firefighter.

### **Two-In/Two-Out Rule Of OSHA'S Respiratory Protection Standard**

The final rule of the Respiratory Protection Standard, 29CFR 1910. 134 replaces respiratory protection standards that were adopted by OSHA in 1971. The revised standard was proposed Nov. 15, 1994, to update the original 1971 standard and reflects changes related to respiratory protection. The revised rule went into effect on April 8, 1998.

The International Association of Firefighters (IAFF) reports that since 1970 when the legislation creating OSHA was enacted, 1,412 members of the IAFF have died in the line of duty (1995). Prohibiting fire departments from allowing firefighters to work alone while attacking an interior fire or performing an interior rescue could have saved some of these lives.

In revising the respiratory standard, a section has been added addressing procedures for operating in Immediately Dangerous to Life and Health (IDLH) atmospheres. These procedures included the two-in/two-out rule. According to OSHA, an immediately dangerous to Life or Health (29CFR1910.134(b)) (1998) is “an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair

an individual's ability to escape from a dangerous atmosphere." The publication of the respiratory standard has caused a great deal of concern and precipitated many questions from fire chiefs and fire service organizations across the country. In an effort to assist in understanding OSHA's Two-In/Two-Out policy, the International Association of Firefighters (IAFF) and the International Association of Fire Chiefs (IAFC) produced a document titled, "IAFF/IAFC Guidance on the OSHA Two-In/Two-Out Policy (see appendix A).

OSHA allows for one condition under which an incident commander is not required to have a Rapid Intervention Team available for rapid deployment at a structure fire. If the fire has progressed beyond the incipient phase of burning, and there is the need for immediate rescue of occupants, the incident commander may begin rescue operations prior to assembling a RIT. In Note Two (29CFR1910.134(9)) (1998) OSHA states, "Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled."

In Sub-part L of the General Labor Standards (29CFR1910.155), OSHA has defined "interior structural firefighting" to mean: "the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are beyond the incipient stage. This is firefighting to control or extinguish a fire in an advanced stage of burning, producing large amounts of smoke, heat and toxic products of combustion." OSHA assigns the responsibility for determining if the fire is an "interior structure fire" and the extinguishment strategy and tactics to the fire department incident commander. As stated in OSHA Directive - CPL2-0.120, 1999, "It is the incident commander's responsibility,

based on training and experience, to judge whether a fire is an interior structural fire, and how it will be attacked." There are nine specific procedures for interior structural firefighting listed in 29CFR1910.134 (9)(3) and (4) (1998). These procedures directly affect the deployment of Rapid Intervention Teams. They are:

1. Visual, voice, or signal line communication is maintained between the firefighters in the IDLH atmosphere and the firefighters located outside the IDLH atmosphere;
2. The firefighters located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
3. The incident commander or designee is notified before the firefighters located outside the IDLH atmosphere initiate emergency rescue;
4. The employee or designee authorized to do so by the employer, once notified, provides necessary assistance appropriate to the situation.
5. Firefighters located outside the IDLH atmospheres are equipped with:
  - a. Pressure demand or other positive pressure SCBA (self contained breathing apparatus) or a pressure demand or other positive pressure supplied—air respirator with auxiliary SCBA; and
  - b. Either appropriate retrieval equipment for removing the firefighters who enter the hazardous atmospheres (to be used only when the retrieval equipment would contribute to the rescue of the firefighters and would not increase the overall risk resulting from entry) or equivalent means for rescue if retrieval equipment is not appropriate.

6. A team of at least two firefighters enter the IDLH atmosphere, and remain in visual or voice contact with one another at all times;
7. At least two firefighters are located outside the IDLH atmosphere;
8. All firefighters engaged in interior structural firefighting use SCBA's;
9. One of the two individuals located outside the IDLH atmosphere may be assigned an additional role, such as Incident Commander in charge of the emergency or Safety Officer, so long as this individual is able to perform assistance or rescue activities without neglecting the safety or health of any firefighter working at the incident.

Failure to comply with any portion of 29CFR 1910.134 (g)(3) and (4) may result in a serious citation by the OSHA Compliance Officer (OSHA FACT Sheets, 1992). The current maximum allowable OSHA penalty (Directive - CPL 2-0, 1999) for not having available or deploying a "Rapid Intervention Team" is \$7,000 for each violation as well as \$7,000 for each day beyond a stated abatement date for failure to correct the violation.

Unfortunately, these safety regulations or equivalent procedures are legally applicable only to private sector firefighters and public sector firefighters who are employed by state and local governmental agencies in the 25 states that operate OSHA approved state plans (see Table 1). Within the 25 "state plan states" public sector agencies are required to adopt standards for their employees that are identical or "equivalent to" standards covering employees in the private sector. In the "non-state plan states," federal OSHA has no legal authority to enforce their regulations to protect the safety and health of public-sector employees.

John (Skip) Coleman (2,000), Deputy Chief of Operations for the Toledo (OH) Department of Fire and Rescue, author of Incident Management for the Street-Smart Fire Officer (Fire Engineering, 1997), and FDIC Educational Committee member, states, "the 25 non-OSHA states are not 'legally' obligated to follow the specific respiratory rule, but they are still affected by the "standard of care" the rule presents. Agencies and officials who ignore the need for the types of protective provisions required by OSHA standards subject themselves to significant liability exposure regardless of whether or not OSHA regulations legally apply in their locations.

**Table 1****States That Have Developed Their Own Occupational Safety and Health Plans**

Alaska	Michigan	Tennessee
Arizona	Minnesota	Utah
California	Nevada	Vermont
Connecticut	New Mexico	Virginia
Hawaii	New York	Virgin Islands
Indiana	North Carolina	Washington
Iowa	Oregon	Wyoming
Kentucky	Puerto Rico	
Maryland	South Carolina	

Source: OSHA, (29CFR1910.120)

**National Consensus Standards Pertaining to Rapid Intervention Team Operations**

Federal OSHA has no regulatory authority over public sector employees in the State of Alabama. In order to provide a standard of care to its members, the Vestavia Hills Fire Department officially adopted the National Fire Protection Association (NFPA) 1500 Standard on Fire Department Occupational Safety and Health. Although progress has been slow, several proactive steps have been taken in support of the commitment to safety for department personnel.

In addition to NFPA Standard 1500, there are other NFPA documents that must be examined before the components of a Rapid Intervention Team SOP can be developed. These standards are NFPA 1561, the Standard on Fire Department Incident Management

System, and 1521, the Standard for Fire Department Safety Officers. Excerpts from all three NFPA standards are included in Appendix B.

### **Standard Operating Procedures for Rapid Intervention Team Operations**

A review of the relevant literature indicates that standard operating procedures (SOPs) for Rapid Intervention Team operations are vital for firefighter safety and effective rescue. Cobb (1998) states that one of the reasons a Rapid Intervention Team is necessary is that we normally throw every resource we have at a fire in order to rescue trapped civilians, but the same cannot be said when firefighters become trapped or lost. This research project is intended to provide an SOP to guide the Vestavia Hills Fire Department in performing a rapid and safe rescue for any trapped or lost firefighter. This project is specifically intended to identify the components needed for an effective SOP and determine the equipment required for RIT operations.

As noted by Cook (1999), an SOP may be written in any of an unlimited number of formats. However, it is important to choose a format that fits the department's needs. Although the Vestavia Hills Fire Department has a standard SOP format, the publication entitled, "Developing Effective Standard Operating Procedures for Fire and EMS Departments," produced by IOCAD (1996) Emergency Services Group for the Federal Emergency Management Agency, was instrumental in improving our present process.



In reference to the need to create SOP's for RIT operations, Ken Folisi, Battalion Chief, Lisle-Woodridge (IL) Fire District stated, "The SOP worked well, and we felt that we now had an even greater capability to react to an unforeseen emergency involving our members."

### **Commonly Asked RIT Questions**

In order to clarify the role and function of RITs, answers to the following commonly asked questions were gathered from the available literature.

- When should the RIT be activated?

This question has been addressed in several articles written by several familiar authors (Eisner 1997). Crawford (1998) advises, "Upon confirmation of a working structure fire, a RIT should be dispatched to the scene for emergency standby duties." The time to call for the team is not when things start to go wrong. A three, five or ten minute response time is no good when help is needed in seconds (Dugan 1996). Any delay in dispatching could leave firefighters in trouble. The RIT can always be turned back if the situation is under control or if conditions are not what they appeared to be initially.

- Who should the RIT report to and what should team members do following initial arrival on scene?

The deployment of a RIT must follow certain specific criteria and guidelines. Dugan (1996), says "When the RIT has arrived on scene, the members' first responsibility is to have the team officer report to the incident commander (IC)." Team members should be fully dressed, including a self-contained breathing apparatus (SCBA), and be ready to be

deployed. When staging RIT personnel and equipment, RIT members should bring their tools and stage in sight of the IC. Team members should monitor scene radio traffic at all times and perform a visual size-up of the structure making note of any possible hazards. Team members should never separate. They are under the direction of their officers, who receive team orders directly from the IC.

- Should the RIT have an officer in charge?

Yes. Once a Rapid Intervention Team is on the scene, the first priority is for the RIT officer to report to the Command Post (Dugan 1996, pg. 60). Other important considerations are: (1) The RIT officer must be sure the team members are properly staged with needed rescue equipment and tools, and (2) The RIT officer must perform an additional size-up encompassing all aspects of the standard size-up for structure fires. As noted by Norman (1997, pg. 18), "Once at the scene, the RIT officer must perform the RIT size-up."

- What training is needed for RIT members?

Rick Lasky (1997), creator of the Illinois Fire Service Institute's (IFSI), "Saving Our Own: Techniques for Firefighter Rescues" program believes many departments are implementing policies, procedures, and guidelines pertaining to the RIT but are failing to train their personnel in this area. The author of this report believes that the implementation of a standard operating procedure (SOP) for any fire ground operation begins with the training of personnel to properly perform all functions of the SOP. The command staff at Vestavia Hills Fire Department agreed on the need to find agencies that provide specialized RIT training.

The Maryland Fire and Rescue Institute (MFRI) has developed an enhanced version of the "Saving Our Own" training concept (Baker 2000). Also discovered in the literature review was a comprehensive 40-hour training course, entitled, "Survival Techniques and Rescue" (STAR). This training is conducted at the Broward County Fire Academy, located in Dovie, Florida. The basic concepts of the S.T.A.R. program includes self-survival and personal escape from hazardous atmospheres, search operations, and rapid intervention team operations. Many of the advertised scenarios include lost or trapped firefighters who must be located and rescued (see Appendix C for course flyer). The author and one VHFD fire fighter are scheduled to attend STAR training October 16 through 21<sup>st</sup>, 2000.

### **Equipment Required for Rapid Intervention Team Operations**

Specific rescue equipment for RIT operations will vary according to the location and type of occupancy (Norman 1997). While the vast array of possible scenarios that can be encountered preclude knowing every possible tool or technique that will be utilized, the basic items can be determined from past events, ways that others have gotten themselves in trouble, and the techniques and equipment that got them out. Although RIT equipment requirements may vary, there are a number of commonly-required pieces of rescue equipment that should be included in every RIT inventory.

Since the majority of structures involved in collapse incidents are only one or two stories high, a quick escape system should be provided for RIT members. It is noteworthy that the majority of structures protected by the Vestavia Hills Fire Department meet this criteria. At

the time of this writing, the VHFD is purchasing four Firefighter Escape Line Kits (see figure 5). These escape line kits meet the criteria of NFPA 1983, Standard on Life Safety Rope and System Components. Distributed by CMC Rescue, Inc., this portable escape kit allows for a quick safe descent from an area of danger up to five to six stories high. Norman (1997, pg. 18), in outlining the required equipment needed for a RIT team, recommends a NFPA rated personal rope consisting of a 40 foot length of 3/8 kernmantle rope.

**Figure 5**  
**Illustration of Firefighter Escape Line Kit**



As previously noted, the National Fire Protection Association (NFPA) has stated that, in some years, 20% of fireground fatalities are related to firefighters becoming lost or disoriented in buildings. In order to provide a safer environment for firefighters conducting primary searches at structure fires, the Vestavia Fire Department is purchasing two Target Exit Devices (TED) (see figure 6). The TED is an exit locator for firefighters. According to the manufacturer, Safety System, Inc., "When placed at the entrance to the fireground, lost or disoriented firefighters can follow the highly directional sound and powerful strobe through heavy smoke, and return to a safe exit."

**Figure 6**  
**Illustration of a Target Exit Device**



In addition to these two critical pieces of equipment, other common tools are needed for RIT operations (Olson, 1998). RIT personnel often wonder what will be the most useful equipment. This question is best answered by the following "AWARE" mnemonic device which provides a generic RIT equipment list:

- Air supply for victim
- Water supply, with enough hose to reach the victim
- A Radio
- Extrication tools

Additional tools have been identified by Norman (1997), Cobb (1998), and Dunn (1998) include:

- Door straps
- Handlights
- Kelly tool
- Belt cutters
- 200 foot Search/Guide rope
- Sledgehammer
- Halagan tool
- Power saws

The key word is "Rapid." Personnel shouldn't be loaded down. They have to move quickly. However, they need to have available to them the appropriate tools to immediately effect a rescue, if needed.

Based on these recommendations, a Rapid Intervention Team equipment list was developed and is included in Appendix G.

### **Summary of Findings In Literature Review**

In summary, the literature review reinforced the need for the Vestavia Fire Department to enhance the safety of personnel involved in fire suppression and other hazardous duties by providing emergency stand-by personnel. The existing literature also emphasized that it is important for all firefighters to be able to recognize dangerous building conditions at structure fires and be alert to the many hazards present during any emergency operation. The need for the capability to immediately deploy rescue personnel when needed was also identified. Literary research identified several existing consensus standards that provide excellent guidance in achieving all these requirements.

## **PROCEDURES**

The literature findings provided important information that was used in answering research questions 1, 2, and 3, and developing a Rapid Intervention Team SOP for Vestavia Hills Fire Department, as discussed in this section.

### **Definition of Terms**

The following definitions are included to assist in the understanding of terms in this report.

Code of Federal Regulations (CFR): the documents that include federally promulgated regulations for all federal agencies.

Incident Commander (IC): the fire department member in overall command of an emergency incident.

Incident Management System (IMS): a system of incident control of personnel and resources.

Immediately Dangerous to Life or Health (IDLH): An atmosphere that poses an immediate threat to life, which would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Incipient Stage Fire: a fire which is in the initial or beginning stage and which can be controlled or extinguished by a portable fire extinguisher or small hoseline without the need for protective clothing or breathing apparatus.

Interior Structural Firefighting: the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.



National Fire Protection Association (NFPA): A not-for-profit membership organization that uses a consensus process to develop model fire prevention codes and firefighting training standards.

National Institute for Occupational Safety and Health (NIOSH): A federal agency which, among other activities, test and certify respiratory protective devices and air sampling detector tubes and recommends occupational exposure limits for various substances.

Occupational Safety and Health Administration (OSHA): this administration is responsible for regulating safety and health in the workplace. OSHA issues safety and health regulations and sets standards for the occupational environment.

Rapid Intervention Team (RIT): a team (company) of firefighters assembled for the purpose of rescuing firefighters in an emergency.

Self-Contained Breathing Apparatus (SCBA): A type of respiratory protection in which a self-contained air supply and related equipment are worn or attached to the user.

Standard Operating Procedure (SOP): specific information and instruction on how a task or assignment is to be accomplished.

Research for this project also included an evaluation of the Vestavia Hills Fire Department rescue equipment inventory. This equipment inventory, along with information discovered through the literature search, was used in identifying new equipment needed for RIT operations and developing the Rapid Intervention Team equipment list, as discussed in the following section.

A single page, ten-item survey was developed to assist the author in determining the capability of other fire departments within Jefferson County, Alabama to perform Rapid Intervention Team operations and identify RIT SOPs and rescue equipment utilized by those departments. The ten items consisted of seven RIT operations questions and three questions concerning other fireground safety procedures (See Appendix F). These questions required a response of either yes or no, or check mark(s).

The survey was mailed on July 1, 2000, to 60 fire chiefs using a mailing list provided by the Central Alabama Fire Chiefs Association (CAFCA) (See Appendix E). The mailing included career, volunteer, and combination departments within Jefferson County, which is the most heavily populated county within the state of Alabama. The survey included the

largest fire department in the state. To encourage responses to the survey, the author offered to provide any interested department with a copy of the SOP (See Appendix G) and/or the equipment list (See Appendix D) developed from the applied research project.

The single page survey had a couple of notable limitations. One limitation was that not every fire department in Jefferson County was surveyed. Only the fire departments that were members of CAFCA were included in the mail-out. Another limitation is that it is not known if all respondents answered the survey truthfully.

## RESULTS

### Answers to Research Questions

1. What regulations and national consensus standards exist concerning Rapid Intervention operations?

- Occupational Safety and Health Administration (OSHA) standards:  
29CFR 1910.134, Respiratory Protection  
29CFR 1910.156, Fire Brigades  
29CFR 1910.120, Hazardous Waste Operations and Emergency Response
- National Fire Protection Association (NFPA) standards:  
NFPA 1500, Standard on Fire Department Occupational Safety and Health  
NFPA 1521, Standard for Fire Department Safety Officer  
NFPA 1561, Standard for Fire Department Incident Management System  
NFPA 1983, Standard on Fire Service Life Safety Rope and System Components.

OSHA promulgated the 1910.134 standard to better protect personnel who enter potentially dangerous atmospheres. Compliance with this OSHA standard or equivalent standards by public agencies is mandated by law in states that operate under state occupational safety and health plans. However, public agencies are not legally required to comply with OSHA regulations in states such as Alabama that are regulated by federal OSHA. While NFPA standards are not mandated by law, the Vestavia Hills Fire Department (VHFD) consider them as the "benchmark" for operational standards for the fire service and have officially adopted them.

2. What elements are needed for an effective Rapid Intervention Team SOP?
  - The key elements of a standard operating procedure for the VHFD must include language and specific procedures to assure that the safety of interior firefighting personnel and the RIT members is maintained at all times. The SOP should also include a "definition" section to assist in the understanding of critical terms by all fire department personnel. Finally, the SOP; must also include sections required by the VHFD to be consistent with the department's other operational policies such as "emergency radio traffic, on-scene accountability and incident command procedures."
  - By reviewing the different standard operating procedures found through the literature review, a SOP for Rapid Intervention Team operations was developed for the Vestavia Hills Fire Department and is included as Appendix G to this report. The SOP and equipment list for Rapid Intervention Team operations were reviewed by all department battalion chiefs and affirmed by the Chief of the department at the monthly staff meeting held on October 12, 2000. Final implementation of the SOP will conclude with the training of personnel. These training sessions are scheduled to begin in December of 2000.
3. What type of equipment is needed by Rapid Intervention Teams?
  - It was clear from the literature review that rescue equipment requirements varied according to local needs. This information is best found through pre-incident planning and local building construction requirements. Responses to the survey support this conclusion. A variety of sources reviewed during the

literature research identified required equipment similar to that identified by respondents to the survey. Some new devices and rescue equipment were discovered in the course of research and were added to the Vestavia Hills Fire Department's inventory. Using all of these resources and the existing rescue equipment inventory of the Vestavia Hills Fire Department, a Rapid Intervention Team equipment list was developed and is included as Appendix C to this report.

4. What is the state of readiness of the fire service within Jefferson County, Alabama to perform Rapid Intervention Operations?
  - Of the 60 fire departments surveyed, 30 departments (50%) responded, and their responses were used in answering this question. The 30 respondent fire departments represented a wide range of populations served and types of service provided. The sizes and types of departments responding ranged from no paid personnel to more than 650 personnel, and from all volunteer departments, to all paid departments to combination departments (Survey Items 1 and 3).
  - Seventy-six percent of the respondents reported having a personnel accountability system, while 56% stated that their department had emergency radio procedures, and 80% reported using the incident command system (Survey Items 8, 9 and 10).
  - Interestingly, only 16 (53%) of the 30 respondent fire departments reported that they designate two-person stand-by or Rapid Intervention Team

procedures before an interior attack is initiated (Survey Item 2) and, of these, only four (25%) reported having a written SOP for Rapid Intervention Team operations. Five fire departments requested a copy of the SOP when developed from this project.

- Of the fire departments that did provide RIT operations, the majority (82%) did so with initial arriving personnel (Survey Item 3), but none of the respondents reported having a dedicated RIT team (Survey Item 4).
- Twenty-four (80%) of the 30 survey respondents reported spending less than eight hours per year in RIT-related training and only two (7%) reported spending more than 24 training hours per year on RIT operations (Survey Item 5). The survey listed a variety of opinions concerning RIT equipment (Survey Item 7).

## DISCUSSION

Through this research project, the author explored and examined a voluminous amount of information pertaining to Rapid Intervention Team Operations. The literature review was broad in this subject area. The findings were comprehensive. The National Fire Protection Association offered several editions of recommended practices pertaining to Rapid Intervention Team operations. The Occupational Safety and Health Administration promulgated one of the most important documents to date, the revision of 29 CFR 1910.134. This revised standard, especially paragraphs (g)(3), covering procedures for IDLH atmospheres, and (g)(4), covering procedures for interior structural firefighting, was instrumental in the development of this project. Although public sector agencies are not legally required to comply with OSHA standards in "non-state plan states," many departments located in those states, including the Vestavia Hills Fire Department, have determined that this important respiratory safety regulation should be adopted by their organizations. Coleman (2000) states that this specific OSHA standard establishes a "standard of care," for which we can be held liable if a firefighter is injured or killed and the death or injury could have been prevented if the standard had been followed. The intent of the regulation is clear: provide stand-by personnel properly trained, equipped, and ready to deploy when confronted with an IDLH atmosphere, or any other dangerous situation. The author of this report agrees with Coleman's viewpoint and urges other fire departments to consult these regulations in developing their RIT procedures.

Equipment requirements for Rapid Intervention Team operation varied, as discovered through the literature review and the survey. The basic inventory recommended by

Norman (1997) and Dunn and Cobb (1998), along with supplemental equipment listed by Olson (1998), was supported by other findings in the literature review and by the respondents to the survey. The consensus of the findings indicated that equipment requirements are performance-based and vary with the location and building construction features from which rescue may be required.

The equipment list included in Appendix D was developed based on the results of the literature review, VHFD preplanning reports, and the present equipment inventory of the Vestavia Hills Fire Department. Other response agencies may need to modify this list based on needs identified through preplanning efforts within their jurisdiction.

Results of the survey conducted for this project indicate that a high percentage of fire departments in Jefferson County, Alabama may be conducting Rapid Intervention Team operations without standard operating procedures, and with very little time spent on training. In an attempt to raise awareness about these deficiencies, the author of this project intends to present an executive summary of the findings in this ARP at the Central Alabama Fire Chief's general meeting in December, 2000. The purpose of the presentation will be to raise awareness about Rapid Intervention Team operational problems, and to offer all interested fire departments a copy of the applied research project, SOP, and equipment list.



## RECOMMENDATIONS

**The following recommendations are based on an extensive search of applicable literature, federal regulations, national consensus standards, and a response survey conducted by the author:**

Recommendation 1. Fire Departments should embrace the OSHA Respiratory Protection Standard and incorporate it into their RIT policy and procedures. NFPA standards of recommended practices should be consulted for guidance in establishing the requirements for an effective training program.

Recommendation 2. Fire service training officers should explore training and educational opportunities for Rapid Intervention Team operations.

Recommendation 3. Fire service leaders should begin immediately determining their department's capability for performing RIT operations. Once this is determined, the selection of the proper equipment and the development of standard operating procedures can proceed.

## CONCLUSION

This report has been a part in a series of proactive measures to ensure the safety of all Vestavia Hills Fire Department personnel through training, proper equipment, and developing and following standard operating procedures.

The need for all fire departments to better prepare for safe operations at structural fires was identified in the NIOSH "Alert" publication in 1999. The need for more emphasis on occupational safety programs and the establishment of Rapid Intervention Teams was the urgent message. In the alert, fire departments were advised by NIOSH to develop and implement standard operating procedures along with other essential steps. The response survey conducted for this project indicates that few departments within Jefferson County, Alabama have complied with the NIOSH recommendation.

As noted by Cline (1998), "Everyday, we face the challenge of providing the best service under what can be the worst conditions. We often fail to realize the importance of rescuing our own whereas we develop the 'larger than life' syndrome. That is why it is important to develop and deploy the tactics of a Rapid Intervention Team which can provide the strategy of 'saving our own.' Before you decide your department's RIT team is ready to respond, review your equipment and add specialty items to the inventory as needed. Then you must train, train, train. Train in safe abandoned buildings, locate vacant houses and seek permission to train in them. Practice your department's accountability system. And don't forget to practice your emergency radio and firefighter escape line procedures."

In conclusion, the author of this report submits a final passage from a noted author, Chief Donald Loeb, (1997) who's fire service experience spans six decades: "We have given of ourselves, often unto death, for the welfare of our citizens. It's time now to recognize that we are at risk and as precious as those we serve."

## REFERENCES

- American National Standards Institute, (ANSI 1989). *Practices for Respiratory Protection for the Fire Service*, (288.5). New York: Author.
- \_\_\_\_\_ (1989). ANSI 288.6: *Standards for Respiratory Protection - Respiratory Use - Physical Qualifications for personnel*. New York: Author
- Cobb, Robert W. (1998, May) *A Fireground Safety Factor*. Firehouse (p.52).
- Coleman, John (2000, February) *Roundtable: Two-In/Two-Out Rule*. Fire Engineering (p. 16).
- Coleman, R. J. (1999, April). *Heroism not endangered by two in/two out rule*. Fire Chief, (p. 32).
- Davis, Harold J. (1999), *Two-in plus two out equals more than four*. (Applied Research Project No. 29271). Emmitsburg, MD: National Fire Academy, Executive Fire Officer Program.
- Dunn, Vincent (1998, August) *Managing and Controlling Fireground risks and Dangers - Part 1*. Firehouse (p. 26).
- Fahy, R. F. and Le Blanc, Paul R., (2000, July-August). *Report on: 1999 Firefighter Fatalities*. NFPA Journal, (pp. 47-53).
- Forgue, Joseph M. (1992, November). *Respiratory Protection for Firefighters*. American Society of Safety Engineers, (pp. 37-40).
- International Association of Fire Chiefs (1998). *United States Department of Labor Occupational Safety and Health Administration firefighters' two-in/two-out regulation*.

(Available from the International Association of Fire Chiefs, 4025 Fair Ridge Drive, Fairfax, VA 22033).

International Association of Firefighters (1995, July). *Summary of OSHA Interpretation*. The Voice, (p. 19).

International Society of Fire Instructors (1998, April). *Rapid Intervention Teams Part-1*. Instruct-O-Gram (pp. 1-8).

Layman, Lloyd (1953) *Firefighting Tactics*. National Fire Protection Association, Quincy, MA. (p. 23).

Loeb, D.L. (1997, December) Have we gone too far? part 3. Fire Chief (p. 65).

Morris, Gary P. (1996, January) *Firefighter lost and found*. Fire Chief (pp: 27-32).

National Institute Occupational Safety and Health, (1999, August). *NIOSH Alert: Request for Assistance in Preventing Injuries and Deaths of Firefighters Due to Structural Collapse*. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control, National Institute Occupational Safety and Health, Division of Safety Research. DHHS (NIOSH) Publication 99-146.

National Fire Academy (1999). *Strategic Management of Charge Student Manual* (FEMA/USFA/NFA-SMOC-SM). Emmitsburg, MD: Author

National Fire Protection Association, (1999). *U. S. Firefighter Fatalities*. NFPA Fire Analysis and Research Division, Quincy, MA: Author.

\_\_\_\_\_ (2000) *Fire Ground Fatalities As a Result of Structural Collapse*. NFPA Fire Analysis and Research Division, Quincy, MA: Author.

\_\_\_\_\_ (1995) NFPA 1561: *Standard on Fire Department Incident Management System*. (1995 ed.). Quincy, MA: Author.

\_\_\_\_\_ (1983) NFPA 1983: *Standard on Fire Service Life Safety Rope and System Components*. (1995 ed.). Quincy, MA: Author.

\_\_\_\_\_. (1997). NFPA 1500: *Standard on Fire Department Occupational Safety and Health*. (1997 ed.). Quincy, MA: Author.

\_\_\_\_\_. (1997) NFPA 1521: *Standard for Fire Department Safety Officer*. (1997 ed.). Quincy, MA: Author.

Norman, J. (1997, November) *Rapid Intervention Techniques*. Firehouse (p. 18).

Norris, Toraine (2000, April 21) *Firefighter dies in blaze*. The Birmingham News, (p. 1c).

Occupational Safety and Health Administration, United States Department of Labor, (1999). *Compliance Safety and Health Officer, Procedures for Interior Structural Firefighting* [On-Line]. Available: <http://www.osha-s/c.gov.oshdoc>.

Occupational Safety and Health Administration, United States Department of Labor, (1997) Subpart L OSHA Standard 29CFR1910.155, *Scope, applications and definitions*. Washington, DC: Government Printing Office.

Occupational Safety and Health Administration, United States Department of Labor, (1977) Subpart L OSHA Standard 29CFR 1910.156, *Fire Brigades*. Washington, DC: Government

Occupational Safety and Health Administration, United States Department of Labor,  
(1986) Final Rule of the OSHA Standard 29CFR, 1910.120, *Hazardous Waste  
Operations and Emergency Response*.

Occupational Safety and Health Administration, United States Department of Labor,  
(1998) Final Rule of the OSHA Standard 29CFR, 1910.134, *Respiratory Protection  
Standard*. Washington, DC: Government Printing Office.

Routley, J.G., Bush, R., and Stern, J. (July, 1996). *Firefighter-Fatalities: What the  
Fire Service Can Do to Prevent Line-of-Duty Deaths*. Firehouse, (1996, July), (p. 50).

United States Fire Administration (1999). *Personnel Accountability System  
Technology Assessment*. Emmitsburg, MD: Author.

Washburn, A.E. Le Blanc, R. and Fahy, R., (1999, July-August). *Firefighter  
Fatalities*. NFPA Journal, (pp. 55-61).

**Appendix A**  
**IAFF/IAFC Guidance on the OSHA 2-In/2-Out Policy**

The federal Occupational Safety and Health Administration (OSHA) recently issued a revised standard regarding respiratory protection. Among other changes, the regulation now requires that interior structural fire fighting procedures provide for at least two fire fighters inside the structure. Two fire fighters inside the structure must have direct visual or voice contact between each other and direct, voice or radio contact with fire fighters outside the structure. This section has been dubbed the firefighters' "two-in/two-out" regulation. The International Association of Fire Fighters and the International Association of Fire Chiefs are providing the following questions and answers to assist you in understanding the section of the regulation related to interior structural fire fighting.



1. What is the federal OSHA Respiratory Protection Standard?

In 1971, federal OSHA adopted a respiratory protection standard requiring employers to establish and maintain a respiratory protection program for their respirator-wearing employees. The revised standard strengthens some requirements and eliminates duplicative requirements on other OSHA health standards.

The standard specifically addresses the use of respirators in immediately dangerous to life or health (IDLH) atmospheres, including interior structural fire fighting. OSHA defines structures that are involved in fire beyond the incipient stage as IDLH atmospheres. In these atmospheres, OSHA requires that personnel use self-contained breathing apparatus (SCBA), that a minimum of two fire fighters work as a team inside the structure, and that a minimum of two fire fighters be on standby outside the structure to provide assistance or perform rescue.

2. Why is this standard important to fire fighters?

This standard, with its two-in/two-out provision, may be one of the most important safety advances for fire fighters in this decade. Too many fire fighters have died because of insufficient accountability and poor communications. The standard addresses both and leaves no doubt that two-in/two-out requirements must be followed for fire fighters safety and compliance with the law.

3. Which fire fighters are covered by these regulations?

The federal OSHA standard applies to all private sector workers engaged in fire fighting activities through industrial fire brigades, private incorporated fire companies (including the “employees” of incorporated volunteer companies and private fire departments contracting to public jurisdictions) and federal fire fighters. In 23 states and 2 territories, the state, not the federal government, has responsibility for enforcing worker health and safety regulations. These “state plan” states have earned the approval of federal OSHA to implement their own enforcement programs. These states must establish and maintain occupational safety and health programs for all public employees that are as effective as the programs for private sector employees. In addition, state safety and health regulations must be at least as stringent as federal OSHA regulations. Federal OSHA has no direct enforcement authority over state and local governments in states that do not have state OSHA plans.

All professional career fire fighters, whether state, county, or municipal, in any of the states or territories where an OSHA state plan agreement is in effect, have the protection of all federal OSHA health and safety standards, including the new respirator standard and its requirements for fire fighting operations. The following states have OSHA-approved plans and must enforce the two-in/two-out provision for all fire departments

Alaska	Kentucky	North Carolina	Virginia
Arizona	Maryland	Oregon	Virgin Islands
California	Michigan	Puerto Rico	Washington
Connecticut	Minnesota	South Carolina	Wyoming
Hawaii	Nevada	Tennessee	
Indiana	New Mexico	Utah	
Iowa	New York	Vermont	

A number of other states have adopted, by reference, federal OSHA regulations for public employee fire fighters. These states include Florida, Illinois and Oklahoma. In these states, the regulations carry the force of state law.

Additionally, a number of states have adopted NFPA standards, including NFPA 1500, Standards for Fire Department Occupational Safety and Health Program. The 1997 edition of NFPA 1500 now includes requirements corresponding to OSHA's respiratory protection regulation. Since the NFPA is a private consensus standards organization, its recommendations are preempted by OSHA regulations that are more stringent. In other words, the OSHA regulations are the minimum requirement where they are legally applicable. There is nothing in federal regulations that "deem compliance" with any consensus standards, including NFPA standards, if the consensus standards are less stringent.

It is unfortunate that all U.S. and Canadian fire fighters are not covered by the OSHA respiratory protection standard. However, we must consider the two-in/two-out requirements to be the minimum acceptable standard for safe fire ground operations for all fire fighters when self-contained breathing apparatus is used.

#### 4. When are two-in/two-out procedures required for fire fighters?

OSHA states that "once fire fighters begin the interior attach on an internal or structural fire, the atmosphere is assumed to be IDLH and paragraph 29 CFR 1910.134(g)(4) [two-in/two-out] applies." OSHA defines interior structural fire fighting "as the physical activity of fire suppression, rescue or both inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage." OSHA further defines an incipient stage fire in 29 CFR 1910.155(c)(26) as a "fire which is in the initial or beginning state and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus." Any structure fire beyond incipient stage is considered to be an IDLH atmosphere by OSHA.

#### 5. What respiratory protection is required for interior structural fire fighting?

OSHA requires that all fire fighters engaged in interior structural fire fighting must wear SCBAs. SCBAs must be NIOSH-certified, positive pressure, with a minimum duration of 30 minutes. [29 CFR 1910.156(f)(1)(ii)] and [29 CFR 1910.134(g)(4)(iii)].

6. Are all fire fighters performing interior structural fire fighting operations required to operate in a buddy system with two or more personnel?

Yes. OSHA clearly requires that all workers engaged in interior structural fire fighting operations beyond the incipient stage use SCBA and work in teams of two or more. [29 CFR 1910.134(g)(4)(i)]

7. Are fire fighters in the interior of the structure required to be in direct contact with one another?

Yes. Fire fighters operating in the interior of the structure must operate in a buddy system and maintain voice or visual contact with one another at all times. This assists in assuring accountability within the team. [29 CFR 1910.134(g)(4)(i)]

8. Can radios or other means of electronic contact be substituted for visual or voice contact, allowing fire fighters in an interior structural fire to separate from their “buddy” or “buddies”?

No. Due to the potential of mechanical failure or reception failure of electronic communication devices, radio contact is not acceptable to replace visual or voice contact between the members of the “buddy system” team. Also, the individual needing rescue may not be physically able to operate an electronic device to alert other members of the interior team that assistance is needed.

Radios can and should be used for communications on the fire ground, including communications between the interior fire fighter team(s) and exterior fire fighters. They cannot, however, be the sole tool for accounting for one’s partner in the interior of a structural fire. (29 CFR 1910.134(g)(4)(i)) [29 CFR 1910.134(g)(4)(ii)]

9. Are fire fighters required to be present outside the structural fire prior to a team entering and during the team’s work in the hazard area?

Yes. OSHA requires at least one team of two or more properly equipped and trained fire fighters be present outside the structure before any team(s) of fire fighters enter the structural fire. This requirement is intended to assure that the team outside the structure has the training, clothing and equipment to protect themselves and, if necessary, safely and effectively rescue fire fighters inside the structure. For high-rise operations, the team(s) would be staged below the IDLH atmosphere. [29 DFR 1910.134(g)(3)(iii)]

10. Do these regulations mean that, at a minimum, four individuals are required, that is, two individuals working as a team in the interior of the structural fire and two individuals outside the structure for assistance or rescues?

Yes. OSHA requires that a minimum of two individuals, operating as a team in direct voice or visual contact, conduct interior fire fighting operations utilizing SCBA. In addition, a minimum of two individuals who are properly equipped and trained must be positioned outside the IDLH atmosphere, account for the interior team(s) and remain capable of rapid rescue of the interior team. The outside personnel must at all times account for and be available to assist or rescue members of the interior team. [29 CFR 1910.134(g)(4)]

11. Does OSHA permit the two individuals outside the hazard area to be engaged in other activities, such as incident command or fire apparatus operation (for example, pump or aerial operators)?

OSHA requires that one of the two outside person's function is to account for and, if necessary, initiate a fire fighter rescue. Aside from this individual dedicated to tracking interior personnel, the other designated person(s) is permitted to take on other roles, such as incident commander in charge of the emergency incident, safety officer or equipment operator. However, the other designated outside person(s) cannot be assigned tasks that are critical to the safety and health of any other employee working at the incident.

Any task that the outside fire fighter(s) performs while in standby rescue status must not interfere with the responsibility to account for those individuals in the hazard area. Any task, evolution, duty, or function being performed by the standby individual(s) must be such that the work can be abandoned, without placing any employee at additional risk, if rescue or other assistance is needed [29 DFR 1910.134(g)(4)(Note 1)]

12. *If a rescue operation is necessary, must the buddy system be maintained while entering the interior structural fire?*

Yes. Any entry into an internal or structural fire beyond the incipient stage, regardless of the reason, must be made in teams of two or more individuals. [29 CFR 1910.134(g)(4)(i)]

13. *Do the regulations require two individuals outside for each team of individuals operating in the interior of a structural fire?*

The regulations do not require a separate "two-out" team for each team operating in the structure. However, if the incident escalates, if accountability cannot be properly maintained from a single exposure, or if rapid rescue becomes infeasible, additional outside crews must be added. For example, if the involved structure is large enough to

require entry at different locations or levels, additional "two-out" teams would be required. [29 CFR 1910.1 34(g)(4)]

*14. If four fire fighters are on scene of an interior structural fire, is it permissible to enter the structure with a team of two?*

OSHA's respiratory protection standard is not about counting heads. Rather, it dictates functions of fire fighters prior to an interior attack. The entry team must consist of at least two individuals. Of the two fire fighters outside, one must perform accountability functions and be immediately available for fire fighter rescue. As explained above, the other may perform other tasks, as long as those tasks do not interfere with the accountability functions and can be abandoned to perform fire fighter rescue. Depending on the operating procedures of the fire department, more than four individuals may be required. [29 CFR 1910.1 34(g)(4)(i)]

*15. Does OSHA recognize any exceptions to this regulation?*

OSHA regulations recognize deviations to regulations in an emergency operation where immediate action is necessary to save a life. For fire department employers, initial attack operations must be organized to ensure that adequate personnel area at the emergency scene prior to any interior attack at a structural fire. If initial attack personnel find a known life hazard situation where immediate action could prevent the loss of life, deviation from the two-in/two-out standard may be permitted, as an exception to the fire department's organizational plan.

However, such deviations from the regulations must be exceptions and not defacto standard practices. In fact, OSHA may still issue "de minimis" citations for such deviations from the standard, meaning that the citation will not require monetary penalties or corrective action. The exception is for a known life rescue only, not for standard search and rescue activities. When the exception becomes the practice, OSHA citations are authorized. [29 CFR 1910.1 34(g)(4)(Note 2)]

*16. Does OSHA require employer notification prior to any rescue by outside personnel?*

Yes. OSHA requires the fire department or fire department designee (i.e., incident commander) be notified prior to any rescue of fire fighters operating in an IDLH atmosphere. The fire department would have to provide any additional assistance appropriate to the emergency, including the notification of on-scene personnel and incoming units. Additionally, any such actions taken in accordance with the "exception" provision should be thoroughly investigated by the fire department with a written report submitted to the Fire Chief. [29 CFR 1910.1 34(g)(3)(iv)]

*17. How do the regulations affect fire fighters entering a hazardous environment that is not an interior structural fire?*

Fire fighters must adhere to the two-in/two-out regulations for other emergency response operations in any IDLH, potential IDLH, or unknown atmosphere. OSHA permits one standby person only in those IDLH environments in fixed workplaces, not fire emergency situations. Such sites, in normal operating conditions, contain only hazards that are known, well characterized, and well controlled. [29 CFR 1910.120(q)(3)(vi)]

*18. When is the new regulation effective?*

The revised OSHA respiratory protection standard was released by the Department of Labor and published in the Federal Register on January 8, 1998. It is effective April 8, 1998. "State Plan" states have six months from the release date to implement and enforce the new regulations.

Until the April 8 effective date, earlier requirements for two-in/two-out are in effect. The formal interpretation and compliance memo issued by James W. Stanley, Deputy Assistant Secretary of Labor, on May 1, 1994 and the compliance memo issued by Assistant Secretary of Labor Joe Dear on July 30, 1996 establish that OSHA interprets the earlier 1971 regulation as requiring two-in/two-out. [29 CFR 1910.134(n)(1)]

*19. How does a fire department demonstrate compliance with the regulations?*

Fire departments must develop and implement standard operating procedures addressing fire ground operations and the two-in/two-out procedures to demonstrate compliance. Fire department training programs must ensure that fire fighters understand and implement appropriate two-in/two-out procedures. [29 CFR 1910.134(c)]

*20. What can be done if the fire department does not comply?*

Federal OSHA and approved state plan states must "...assure so far as possible every working man and woman in the Nation safe and healthful working conditions." To ensure such protection, federal OSHA and states with approved state plans are authorized to enforce safety and health standards. These agencies must investigate complaints and conduct inspections to make sure that specific standards are met and that the workplace is generally free from recognized hazards likely to cause death or serious physical harm.

Federal OSHA and state occupational safety and health agencies must investigate written complaints signed by current employees or their representatives regarding hazards that threaten serious physical harm to workers. By law, federal and state OSHA agencies

do not reveal the name of the person filing the complaint, if he or she so requests. Complaints regarding imminent danger are investigated even if they are unsigned or anonymous. For all other complaints (from other than a current employee, or unsigned, or anonymous), the agency may send a letter to the employer describing the complaint and requesting a response. It is important that an OSHA (either federal or state) complaint be in writing.

When an OSHA inspector arrives, he or she displays official credentials and asks to see the employer. The inspector explains the nature of the visit, the scope of the investigation and applicable standards. A copy of any employee complaints (edited, if requested, to conceal the employee's identity) is available to the employer. An employer representative may accompany the inspector during the inspection. The inspector may review records, collect information, and view work sites. The inspector may also interview employees in private for additional information. Federal law prohibits discrimination in any form by employers against workers because of anything the workers say or show the inspector during the inspection or for any other OSHA protected safety-related activity.

Investigations of imminent danger situations have top priority. An imminent danger is a hazard that could cause death or serious physical harm immediately, or before the danger can be eliminated through normal enforcement procedures. Because of the hazardous and unpredictable nature of the fire ground, a fire department's failure to comply with the two-in/two-out requirements creates an imminent danger and the agency receiving a complaint must provide an immediate response. If inspectors find imminent danger conditions, they will ask for immediate voluntary correction of the hazard by the employer or removal of endangered employees from the area. If an employer fails to do so, federal OSHA can go to federal district court to force the employer to comply. State occupational safety and health agencies rely on state courts for similar authority.

Federal and state OSHA agencies are required by law to issue citations for violations of safety and health standards. The agencies are not permitted to issue warnings. Citations include a description of the violation, the proposed penalty (if any), and the date by which the hazard must be corrected. Citations must be posted in the workplace to inform employees about the violation and the corrective action. [29 CFR 1903.3(a)]

It is important for labor and management to know that this regulation can also be used as evidence of industry standards and feasibility in arbitration and grievance hearings on fire fighter safety, as well as in other civil or criminal legal proceedings involving injury or death where the cause can be attributed to employer failure to implement two-in/two-out procedures. Regardless of OSHA's enforcement authority, this federal regulation links fire ground operations with fire fighter safety.

21. *What can be done if a fire fighter does not comply with fire department operating procedures for two-in/two-out?*

Fire departments must amend any existing policies and operational procedures to address the two-in/two-out regulations and develop clear protocols and reporting procedures for deviations from these fire department policies and procedures. Any individual violating this safety regulation should face appropriate departmental action.

22. *How can I obtain additional information regarding the OSHA respirator standard and the two-in/two-out provision?*

Affiliates of the International Association of Fire Fighters may contact:

International Association of Fire Fighters  
Department of Occupational Health and Safety  
1750 New York Avenue, NW  
Washington, DC 20006  
202-737-8484  
202-737-8418 (FAX)

Members of the International Association of Fire Chiefs may contact:

International Association of Fire Chiefs  
4025 Fair Ridge Drive  
Fairfax, VA 22033-2868  
703-273-0911  
703-273-9363 (FAX)



## **Appendix B**

### **Excerpts From Relevant NFPA Standards**

Note: The following excerpts are directly quoted from these standards.

#### **NFPA 1500, 1997 Edition, Standard on Fire Department Occupational Safety and Health**

6-5 Rapid Intervention for Rescue of Members.

6-5.1 The fire department shall provide personnel for the rescue of members operating at emergency incidents if the need arises.

6-5.2 A rapid intervention crew shall consist of at least two members and shall be available for rescue of a member or a team if the need arises. Rapid intervention crews shall be fully equipped with the appropriate protective clothing, protective equipment, SCBA, and any specialized rescue equipment that might be needed given the specifics of the operation under way.

6-5.3 The composition and structure of rapid intervention crews shall be permitted to be flexible based on the type of incident and the size and complexity of operations. The incident Commander shall evaluate the situation and the risks to operating teams and shall provide one or more rapid intervention crews commensurate with the needs of the situation.

6-5.4 In the early stages of an incident, which includes the deployment of a fire department's initial attack assignment, the rapid intervention crew(s) shall be in compliance with 6-4.4 and

6-4.4.2 and be either one of the following:

(a) On-scene members designated and dedicated as rapid intervention crew(s)

(b) On-scene members performing other functions but ready to redeploy to perform rapid intervention crew functions. The assignment of any personnel shall not be permitted as members of the rapid intervention crew if abandoning their critical task(s) to perform rescue clearly jeopardizes the safety and health of any member operating at the incident.

6-5.5 As the incident expands in size or complexity, which includes an incident Commander's requests for additional resources beyond a fire department's initial attack assignment, the rapid intervention crews shall upon arrival of these additional resources be either one of the following:

(a) On-scene members designated and dedicated as rapid intervention crews

(b) On-scene company of companies located for rapid deployment and dedicated as rapid intervention crews

6-5.6 At least one rapid intervention crew shall be standing by with equipment to provide for the rescue of members that are performing special operations or for members that are in positions that present an immediate danger of injury in the event of equipment failure or collapse.

**NFPA 1561, 1995 Edition, Standard on Fire Department Incident Management System.**

Chapter 4-1.8 The fire department shall provide personnel for the rescue of individuals operating at emergency incidents if the need arises. A rapid intervention crew shall consist of at least two individuals and shall be available for rescue of personnel if necessary.

**NFPA 1521, 1997 Edition, Standard for Fire Department Safety Officer.**

Chapter 4-3.2 The incident safety officer shall ensure that a rapid intervention crew meeting the criteria in Chapter 6 of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, is available and ready for deployment.

**Appendix C**  
**Broward Fire Academy**



**Broward Fire Academy**  
**2600 S. W. 71 Terrace**  
**Davie, Florida 33314**  
**(954) 474-8217**

Thank you for your interest in the STAR program at the Broward Fire Academy. Enclosed with this letter is a registration form, a map to the fire academy, an agenda overview, hotel information, payment information, a hold harmless agreement and some suggestions for equipment to bring to the class. Should you require any additional information, please feel free to contact me via e-mail at [FFTraining@aol.com](mailto:FFTraining@aol.com). You can also find more information on our web site at <http://members.aol.com/FFTraining>.

**Overview**

The basic concepts of the S.T.A.R. program include self-survival and personal escape from hazardous atmospheres, search and rescue operations, and *rapid intervention team operations*. Many of our scenarios include lost or trapped firefighters who must be located and rescued from various situations. An agenda overview for the week is enclosed. The times listed on the agenda are approximate times only. Many of the past classes have gone beyond our projected 5:00pm time frame. **Class starts at 9:00 a.m.**

**Challenging Program**

This program has been designed specifically for firefighters of all ages and physical conditions. Our goal is to create a learning environment where all firefighters can enjoy and participate in each segment of the program. There is **no** P.T., however, the search and rescue scenarios are timely and involve operations on upper floors, lengthy extrication operations, working in small spaces such as would be found in a collapsed environment, and spending a lot of time in bunker gear. We have had male and female firefighters of all ages attend without problems, however, we just want you to be aware that this is a challenging and physical program.

## **Appendix D Rapid Intervention Equipment List**

### Respiratory Equipment

- (1) Spare SCBA unit

### Communication Equipment

- (2) Portable Walkie Talkies

### Lighting Equipment

- (1) Personal flashlight
- (1) Hand-held spotlight
- (2) Cylume light tubes
- (1) Target exit device

### Forcible Entry Tools

- (1) Halogen
- (1) Short pike pole
- (1) Pick head axe
- (1) Circular power saw

### Rope/Harness/Hardware

- (2) Personal rope escape line kits
- (1) 150" search rope
- (2) Class IV rescue harnesses
- (2) Figure eight descenders

**Appendix E**  
**Cover Letter for Response Survey**

July 1, 2000

Dear Chief:

I am presently developing my second of our Applied Research Projects as required in the Executive Fire Officer Program at the National Fire Academy, and I need your assistance!

In August 1999, The National Institute of Occupational Safety and Health (NIOSH) issued an "Alert," titled "Request for Assistance in Preventing Injuries and Deaths of Firefighters due to Structural Collapse." This document recommended several proactive safety steps when operating at structural fires. **One of those steps was emphasizing the need for fire departments to develop and implement rapid intervention teams (RIT).**

My objectives with this research project is to examine the typical state of readiness for fire departments in Jefferson and Shelby counties to perform rapid intervention operations and to develop a set of standard operating procedures for the Vestavia Hills Fire Department.

Attached to this letter you will find a questionnaire entitled, "Rapid Intervention Operations" SOP's.

Please take a few minutes and complete this form and return it to me by **July 25, 2000**. Also, if your department has a rapid intervention team SOP, please include a copy of it. If your department would like to have a copy of the SOP developed from this project, I will be glad to forward it upon request. For your convenience, I have provided a self-addressed, stamped envelope.

Thank you for your assistance in this important matter. Please contact me if you have any questions. My e-mail address is: [firecapt@vestavia.org](mailto:firecapt@vestavia.org)

Sincerely,

Sam Hansen  
Battalion Chief  
Vestavia Hills Fire Department

## Appendix F Rapid Intervention Operations SOP'S

1. Please answer the following questions concerning your department by placing the information or a check mark in the appropriate blank.

Career  
 Volunteer  
 Combination

Population Served:

Under 10,000  
 10,000-20,000  
 20,000-50,000  
 50,000 and above

Total number of fire personnel \_\_\_\_\_. Minimum number of fire personnel on duty \_\_\_\_\_. Minimum number of fire personnel required on scene before an interior attack is initiated \_\_\_\_\_.

2. Does your department designate two-person rescue or rapid intervention team procedures before an interior attack is made at structural fires? \_\_\_\_yes \_\_\_\_no
3. If you answered yes to question 2, how does your department staff the team?
- With initial arriving personnel  
 Wait for additional supporting companies  
 Wait for off-duty personnel to arrive  
 Wait for mutual aid personnel to arrive
4. Does your department have a **dedicated** rapid intervention team? \_\_\_\_yes \_\_\_\_no
5. How many hours of training on rapid intervention team operations does your response personnel receive annually? \_\_\_\_8 \_\_\_\_10 \_\_\_\_12 \_\_\_\_16 \_\_\_\_24
6. Does your department currently have a written SOP in-place for RIT operations?  
\_\_\_\_yes \_\_\_\_no
7. What types of equipment does your RIT use? \_\_\_\_personal escape ropes  
\_\_\_\_forcible entry tools \_\_\_\_special lights \_\_\_\_radios \_\_\_\_thermal  
imaging camera \_\_\_\_other (please identify) \_\_\_\_\_
8. Does your department use a personnel accountability system at structural fires?  
\_\_\_\_yes \_\_\_\_no
9. Does your department operate routinely with an incident command system IMS/ICS?  
\_\_\_\_yes \_\_\_\_no
10. Does your department have "Emergency Traffic" radio SOP's? \_\_\_\_yes \_\_\_\_no

**Appendix G**  
**Vestavia Hills Fire Department**

SUBJECT: Operations

Section 22

TOPIC: Rapid Intervention Team

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**PURPOSE:**

This procedure increases firefighters' safety at emergency incidents by providing for firefighter rescue at the outset of an event before a team enters an unknown atmosphere, potential or actual IDLH. It should integrate with procedures that are already in effect, such as the requirement for a back-up rescue team for hazardous material entry. The objective of a R.I.T. crew is to have a fully equipped rescue team on-scene, in a ready state, to immediately effect rescue to trapped, injured or lost firefighters or civilians.

**SCOPE:**

The procedure applies to all Vestavia Hills fire personnel assigned to emergency operations.

**Vestavia Hills Fire Department**

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## DEFINITIONS:

Immediately dangerous to life and health (IDLH): An atmosphere that poses an immediate threat to life, which would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Initial rapid intervention team (IRIT): Temporary two-person RIT team assigned at the outset of an incident to allow teams to enter a IDLH, potential or unknown atmosphere.

Personnel accountability report (PAR): If simply a physical head count of each crew member conducted by their officer, then reported to command.

Rapid intervention team (RIT): A team (company) of firefighters assembled for the purpose of rescuing firefighters in an emergency.

Target exit device (TED): An exit locator for firefighters. It emits a penetrating, highly directional sound and powerful strobe.

"Working" structural fires: A fire inside of buildings on enclosed structures which are involved beyond the incipient stage.



**Vestavia Hills Fire Department**

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## 22.1 Required Use of RIT's

- A. This procedure shall be implemented at all "working" structure fires beyond the incipient stage and other incidents where fire department members are subject to hazards that would be immediately dangerous to life and/or health in the event of an equipment failure, sudden change of conditions, or mishap.

Examples of special hazards include, but are not limited to:

- Offensive Fire Operations (IDLH)
- Hazardous Materials Incident (IDLH, or Unknown atmosphere)
- Trench Rescue
- Confined Space Rescue
- Any other incident having significant risk

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## 22.2 IRIT (Initial RIT)

- Temporary two-person RIT team assigned at the outset of an incident to allow teams to enter an IDLH, potential or unknown atmosphere.
  - Priority of Command to upgrade IRIC to a full RIT crew as soon as practically possible.
- A. One IRIC member must be solely dedicated to tracking interior personnel. Their function is to account for location of interior crews and initiate a firefighter rescue. This position requires an attack line, radio, PPE, and SCBA. The other member of the two-person IRIT is permitted to take on additional roles, such as incident Commander, safety officer, or apparatus operator. This position requires a radio with PPE and SCBA nearby to be donned as soon as possible.

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## 24.3 Standard Implementation IRIC Four-Person Crew

- A. IRIT can be used when a mobile command made is utilized by the first arriving company officer making an interior attack on a working fire with the nozzle person. The plugman assures the primary IRIT position and the apparatus operator assumes the secondary IRIT position. This would allow for an interior attack when the second due company has not arrived on-scene.

Note: Other variations using on-scene personnel may be exercised by the incident Commander (e.g. personnel on first arriving rescue unit, (or officer may assume vacant role, etc.)

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## 24.4 Standard Exceptions to the IRIC Requirement at Structure Fires.

1. When there is a life hazard where immediate action could prevent the loss of life.
2. When the fire is in an incipient stage.

## 24.5 Dispatch and Implementation

- A. Upon declaration of a working fire, or at the request of the incident Commander, an additional rescue unit or engine company will be dispatched. This additional personnel will satisfy RIT assignments.
  1. The unit should assemble RIT equipment and report to the incident Commander.
  2. Upon arrival perform a RIT size-up.
  3. Monitor on-scene radio traffic.
  4. RIT team should obtain a briefing from the incident Commander.
  5. All RIT crew members will assume a ready state, including full protective clothing and SCBA.
- B. For other types of incidents, the protective clothing and equipment will be appropriate for the hazards.
- C. In some situations, the RIT team may need to conduct a recon to maintain awareness of working companies and conditions.

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- D. The team must be able to react immediately to sudden emergency events at the incident.
- E. In all cases, the RIT must maintain the ability to rapidly deploy.
- F. In some situations, protective hoselines may need to be pre-deployed.
- G. RIT members should assess the need for other access points to provide for egress, rescue, and ventilation.
- H. When companies are operating on floors above ground, the RIT should consider pre-positioning ground ladders to allow for emergency egress and rescue.
- J. Rescue sector should coordinate their activities with the involved sector to maximize the rescue operation.
- L. If not deployed as a RIT unit, command may assign this unit to rotate with interior companies.
- M. RIT members can be used for any appropriate assignments after all crews are out of danger, PAR's have been obtained, and an IDLH atmosphere no longer exists.

**24.6 High Rise Fires (Buildings higher than 6 stories)**

- A. RIT crews will be assigned to stand by positions in the rescue sector location, stairwell, or one floor below fire floor.

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1. RIT crew must take RIT equipment to the appropriate stand-by position.

#### 24.7 Commitment to Rescue of a Lost or Trapped Firefighter

- A. Upon a report of a lost or trapped firefighter, Command should deploy the RIT(s) to the last reported location of the lost/trapped firefighter(s).
  1. The appropriate RIT equipment and spare SCBA should be taken.
  2. The RIT team leader may be assigned a "Rescue Sector" designation.
- B. Appropriate rescue equipment and crews must be quickly assembled and organized.
  - \* For radio procedures on a lost or trapped firefighter, see VHFD Safety SOP, Section 13.4-B.3.