

## **Rapid Intervention and the Perrysburg Fire Division**

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## CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

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## ABSTRACT

This Applied Research Project addressed the problem of the Perrysburg Fire Division operating at structure fires without a rapid intervention team (RIT) on stand-by in the event of a mayday situation. Operating without a RIT placed unnecessary risk on the Perrysburg firefighters and left the incident commanders without the tools available to successfully rescue members of the fire division who becomes lost, trapped or injured.

The purpose of the Applied Research Project was to identify all components needed to implement an effective RIT program for the City of Perrysburg Fire Division.

Action research was used to review information from trade journals, web sites, books, national standards, state and federal laws along with personal communication with fire service personnel.

The following research questions were used to investigate the problem.

1. What is rapid intervention?
2. What guidelines or procedures do fire departments that surround the City of Perrysburg follow to implement rapid intervention according to the NFPA standards?
3. What have other fire departments of similar size to the City of Perrysburg done to implement rapid intervention at structure fires according to the NFPA standards?
4. What does the Perrysburg Fire Division do to implement rapid intervention at structure fires?

The procedure section included a review of items which helped to gain a better understanding of RIT. Surveys were developed to gain knowledge on RIT operations from across the state of Ohio. Personal contact was made with representatives of fire departments sharing a border with the City of Perrysburg to determine their RIT capabilities.

As a result of this Applied Research Project, a RIT program was recommended to bring the Perrysburg Fire Division in compliance of all laws and standards. This program included a focus on procedures, planning and training.

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## INTRODUCTION

### **Statement of the Problem**

The problem this study will address is how the City of Perrysburg Fire Division does not currently comply with the recommendations from NPFA 1500 and NFPA 1710 that a Rapid Intervention Team (RIT) be utilized at structure fires. By studying any potential deficiencies, the plan can be used to find ways to enact policies and procedures to ensure a RIT is implemented at all incidents.

The failure to follow these nationally accepted standards not only puts the lives of firefighters in jeopardy but may also expose the city to fines or other civil liabilities. As of today, the Perrysburg Fire Division has not suffered any injuries or deaths that could be attributed to not having a RIT in place. This study is designed to be progressive and to assist the fire division with working towards developing a procedure for RIT. It should be in place before it is needed in a true emergency.

### **Purpose of the Study**

The purpose of this study is to analyze RIT national standards and how they are implemented by fire departments around the City of Perrysburg, along with other areas of the state. The results of this study will be used to help establish policies/procedures, training standards and standardized equipment within the Perrysburg Fire Division and all mutual aid companies. This information will then be used to improve the utilization of RIT within the City of Perrysburg Fire Division.

### **Research Questions**

The following questions will be evaluated through evaluative research:

1. What is rapid intervention?
2. What guidelines or procedures do fire departments that surround the City of Perrysburg follow to implement rapid intervention according to the NFPA standards?
3. What have other fire departments of similar size to the City of Perrysburg done to implement rapid intervention at structure fires according to the NFPA standards?
4. What does the Perrysburg Fire Division do to implement rapid intervention at structure fires?

## **BACKGROUND AND SIGNIFICANCE**

The City of Perrysburg is a 10.5 square mile community located in the northwest portion of Ohio. It is the second largest city in Wood County. It is approximately 12 miles from the Ohio/Michigan border. The closest major city is the city of Toledo and is bordered by the cities of Maumee and Rossford along with Middleton and Perrysburg Townships. The Maumee River creates Perrysburg's northern border. The Maumee River brings several thousand fishermen to the area each spring for one of the best walleye runs in the country. The City of Perrysburg is a rapidly growing community that has a combination of residential, commercial, light and heavy industrial occupancies. Based on the 2000 census figures, the City of Perrysburg had a population of 16,945 (US Census.gov). The current population is projected to be 21,436 (Walters, personal communication, November 9, 2010).

The Perrysburg Fire Division was chartered in 1911 as the Perrysburg Volunteer Fire Department. It currently operates one fire station, but with growth from annexation and development, an additional station is planned in the southwest portion of the city. This new fire station is scheduled to be operational in 2012. The fire division is manned by a career staff of a fire chief, deputy fire chief, three assistant fire chiefs and nineteen firefighter/paramedics. One firefighter/paramedic is detailed to the Fire Prevention Bureau (Perrysburg Fire Division, 2009). This gives each shift six firefighters and one assistant chief. There is a minimum manning of five fire/EMS personnel per shift. The assistant fire chiefs are responsible for the operations of each respective shift. Each shift has a different area of responsibility with "A" shift overseeing the EMS operations of the fire division. "B" shift is responsible for the maintenance of the fire station, vehicles and equipment. "C" shift is responsible for developing training programs and



maintaining training records. The fire chief and deputy chief both work a schedule of Monday through Friday, 0700-1500.

The career staff is supported by a compliment of sixteen part-paid firefighters. Training levels vary for the part-paid staff. Only four have been trained to the Firefighter II level. One has received firefighter level I training and ten have received the state of Ohio's basic volunteer firefighter training. One firefighter is a new recruit and has not received any training.

Each shift completes some form of training every shift. This training is typically a review of standard operating guidelines and EMS protocols along with some hands-on training involving fire/EMS skills. In addition to the on-duty training, the first and third Tuesday of the month at 1900 there is a scheduled drill for the entire fire division. If there is a fifth Tuesday in a given month, the part-paid staff will have an additional training session.

The fire division handles a variety of emergency responses including structure fires, vehicle fires, emergency medical incidents, motor vehicle accidents, hazardous materials, water rescues and other technical rescues. In 2008, the Perrysburg Fire Division responded to 1,628 emergency runs. In 2009, the Perrysburg Fire Division responded to 1,892 incidents.

The Perrysburg Fire Division is part of state and county mutual aid agreements with neighboring municipalities. The fire division is also involved with two automatic aid agreements. One is specific for responding into the Maumee River on water-rescue incidents. The fire division will respond with a rescue boat and a compliment of personnel to any incident in the river. The City of Maumee and Perrysburg Township provide a similar response. While the three jurisdictions all respond to incidents together there are no standardized policies, procedures or guidelines. Each of the three responding fire department operates on its own separate radio

frequency and there is no standardized water rescue equipment. To date, there has never been a documented joint-training session on river rescue operations.

The Perrysburg Fire Division also works with Perrysburg Township on an automatic aid agreement for all reported structure fires in the city and township. In 2008, the City of Perrysburg responded to Perrysburg Township a total of 26 times. Of those responses in 2008, 16 ended up as working structure fires. In 2009, the number of automatic aid responses decreased to 15. Of those in 2009, 12 ended up as working structure fires. In 2008, Perrysburg Township provided 21 automatic aid responses into the City of Perrysburg. In 2009, there were 17 automatic aid responses into the city. Currently, automatic aid companies are not pre-assigned to a specific detail. They receive their assignment from the Incident Commander operating on the scene. This assignment could be water supply, search, back-up, ventilation and etc., depending on the needs at the time.

While The State of Ohio Administrative Code (OAC) doesn't specifically mention the use of RIT, section 4123:1-21-07 (C) (3) Fire Department Occupational Safety and Health states:

In interior structural fires a minimum of four employees shall be required, consisting of two employees working as a team in the hazardous atmosphere, who shall remain in voice or visual contact with each other; and two members who are located outside the hazardous atmosphere, who shall be responsible for maintaining a constant awareness of the number and identity of those operating in the hazardous atmosphere and be prepared to perform rescue of those members if required. Interior structural firefighting means 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 (Ohio Administrative Code, 2009).

Although the Perrysburg Fire Division does not have this written into a policy/procedure or guideline, it is common practice to follow the requirements of this “two-in/two-out” law. This is the same for nearly all agencies that border Perrysburg. According to conversations with spokespersons from Maumee, Rossford and Middleton Township; none of these agencies have a written policy that addresses the two- in/two-out rule but all follow it. Only the Perrysburg Township Fire Department has a written policy for the two-in/two-out rule.

This research paper will also analyze the National Fire Protection Association (NFPA) standards as they relate to the utilization of a RIT. It will also review how the standards are implemented by other fire departments in the Perrysburg area. Understanding the standards, and how other departments are implementing RIT, will help Perrysburg begin to properly use RIT. This, in turn, will help the firefighters in Perrysburg safely return to their families at the end of their shifts. It will also aid in reducing liability to the city by following the nationally-accepted standards.

The NFPA is a recognized organization of fire service leaders that helps develop standards aimed to assist with the operations of emergency services. The *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Department* is commonly referred to as NFPA 1710. NFPA 1710 sets forth minimum requirements relating to the organization and deployment of fire suppression operations. Section 5.2.3.2.1 states “The fire department shall have the capability to deploy an initial full alarm assignment within an 8-minute response time to 90 percent of the incidents as established in Chapter 4.” Part of the initial full alarm assignment includes the “Establishment of an IRIC that shall consist of a minimum of two properly equipped and trained personnel” (NFPA, 2001).

The goal of this Applied Research Project is to reduce the risk of firefighter injury or death while operating at structure fires within the City of Perrysburg. It will analyze the capabilities of the Perrysburg Fire Division to properly implement RIT at structure fires. This project will review the RIT practices of fire departments that border the City of Perrysburg along with other agencies of similar size and operation to Perrysburg. It will analyze state laws and national standards associated to RIT.

The results of this Applied Research Project will be shared with the agencies in Perrysburg's response area.

### **LITERATURE REVIEW**

The literature review for this research project combines many types of articles from magazines and websites. It will also include books, personal interviews, fire division policy/procedures, city reports and other resources.

The Perrysburg Fire Division provides a review of its operations at the end of each year with a Chief's Report. The 2008 and 2009 reports were used to research this project. These reports break down the number of responses the division makes each year. It also tracks response time and types of responses. The report lists recommendations for the upcoming years and initiatives that were for the current year.

Rapid Intervention has been part of the fire service in Europe since the late 1960s and early 1970s when the London Fire Brigade introduced RIT procedures. It began using EATL and EASE equipment (Emergency Air Transfer Lines & Emergency Air Supply Equipment) as designated firefighter search & rescue teams stationed at entry points. The crews were equipped with emergency SCBA specifically designed to be worn by unconscious, injured or trapped firefighters (Crawford).

The definition of a rapid intervention crew (RIC) as provided by NFPA 1710 is “a dedicated crew of firefighters that is assigned for rapid deployment to rescue lost or trapped members.” NFPA 1710 further defines an Initial Rapid Intervention Crew (IRIC) as “two members of the initial attack crew who are assigned for rapid deployment to rescue lost or trapped members” (NFPA, 2001).

A report published by the United States Fire Administration (USFA) attempts to clarify some confusion between rapid intervention and Section (g) (4) of the OSHA standard (29CFR1910.134). This OSHA standard is commonly referred to as the two-in/two out rule.

There is some confusion as well as debate within the fire service as to whether there is a difference-conceptually or functionally-between the OSHA respiratory standards title commonly known as “two-out” and rapid intervention teams. Some fire departments consider the two to be synonymous, i.e. the terms can be used interchangeably. Other departments view RIT’S as a higher order two-in/two-out team that is differentiated by specializing training and equipment and the firefighting credentials of RIT members.

In this report, the two-in/two-out requirements pertain to initial arrival and deployment of first due operations. Once a scene progresses beyond the incipient stage (which often happens even before the fire department arrives, especially in incendiary fires) and escalates to a working fire or additional alarm or both, then the need to deploy a formal RIT unit becomes a factor. Firefighter safety is the issue with both RIT and two-in/two-out. Each has its own requirements and distinct (though related) approaches to providing safety based on an escalating level of need. Both are implemented and often staffed differently, but are established with the common goal of affecting firefighter rescue (USFA, 2003).

Although rapid intervention is a useful tool when it comes to firefighter safety, there have been a number of hurdles over the years that it has had to overcome. One is the negative perception that it has received from the onset. “It began with the chief, who felt he needed all the companies on the assignment to work directly on the fire, and continued all the way to the newest rookie, who only heard how RIT was useless and offered no ‘real’ experience.” For RIT to be successful, the leadership needed to eliminate the negative perception. “RIT in the fire service can be equated to Special Forces in the military. Special Forces are responsible for the recovery of personnel when they become missing in action” (Shaw, 2004).

Many of the fire service leaders across the nation are firm believers of RIT. In his book, Pride and Ownership, Chief Rick Lasky makes his feeling known about a deputy chief that is lecturing about how RIT doesn’t work. “Maybe it does the way he’s doing it, but there is case after case after case of documented saves made by rapid intervention teams that have gone in and rescued a fellow firefighter. I wonder if the firefighters who were rescued think rapid intervention sucks. I wonder if their families do!” (Lasky, 2006).

One such successful RIT rescue occurred on March 16, 2010 when two Pittsburgh, Pa, firefighters were rescued by the fire department’s “Go Team” after they were trapped in a collapse during a structure fire. According to Assistant Chief Jim Crawford of the Pittsburgh Bureau of Fire, “We had a stairwell collapse. Two firefighters fell into the basement. The rapid intervention team went in and extricated them from the building. They've been transported to the hospital with minor injuries” (Iannotti, 2010).

Deputy Chief Vincent Dunn, who retired after 42 years of service with the Fire Department of New York (FDNY) states; “A fire company or RIT standing by at the command

post must be ready at all times to start a search and rescue during the fire or emergency incident” (Dunn, 2007).

Many fire departments across the country are struggling with the implementation of rapid intervention. As stated in the article, “Rapid intervention should no longer be assigned to a company out of convenience or just to satisfy departmental operational plans. It should be assigned with full knowledge of the company officer and his company (Clark, 2007). Brian P. Kazmierzak, Division Chief of Training & Safety for the Clay Fire Territory in Indiana shared his thoughts on rapid intervention. “I truly believe 99% of the fire service does not use RIT/FAST/RIC/RAT properly – it is mainly lip service” (Kazmierzak, personal communication, February 9, 2010).

NFPA 1407 provides a recommended list of equipment needed for a RIT. This list includes search ropes, rescue ropes and webbing, forcible entry tools, thermal imager camera, personal protective equipment, ground ladders, hand light, portable radio, stokes basket and several other items (NFPA, 2010) .

In Fire Engineering, the monthly roundtable discussion focused on the use of rapid intervention teams in departments of various sizes and structures. Skip Coleman, a retired Assistant Chief from the Toledo Fire and Rescue Division, acts as the facilitator for the discussion. He asked the question, “More and more departments are using rapid intervention teams. Does your department have a RIT/RIC/FAST? If so, how is it dispatched—automatic response, mutual aid, internally (from within your department)? If not, what contingencies, if any, have been made for RIT” (Coleman, 2004)? There were 25 responses to the question and each respondent described his or her department’s approach to RIT. From reading the answers, one gets an understanding that there is no one right way to implement RIT. Each department has

to look at the way it operates and put into practice something that will work best for their department. Many of the larger municipal fire departments are fortunate enough to have nearly unlimited resources to dispatch as RIT. For example, FDNY, Phoenix, Miami-Dade and Chicago all send an additional fire apparatus. Phoenix goes so far as to send two additional engines, one ladder, one rescue and a battalion chief to act as a RIT Task Force in fires involving a commercial occupancy. One small fire department listed in the Roundtable that is not fortunate enough to send an additional alarm to handle RIT alone is the Mount Lebanon, Pa, Fire Department. Mount Lebanon is a combination fire department which, according to their website, has 17 career and 43 volunteer firefighters. For RIT, Mount Lebanon is one of 12 fire departments that form the South Hills Regional Go-Team. All member fire departments operate under the same standard operating guidelines and training. Since its inception in 1999, one successful rescue of a downed firefighter occurred. A firefighter fell through a floor into a basement and was safely retrieved by the Go-Team.

The Passaic, New Jersey, Fire Department suffered a LODD on May 9, 2001 in which Firefighter Al Tirado became trapped and died of his injuries. At the time, Passaic did not have an effective safety program. In 2004, a new fire chief took over and helped establish a RIT program among other changes in fire fighter safety. “There is nothing new about rapid intervention. If your department is not using it to its fullest potential by now, then someone needs to speak up. A Mayday can happen anywhere at any time” (Freeman, 2005). The author asks if all the training would have made a difference on May, 9, 2001. No one will ever know, but Firefighter Tirado would have had a much better chance to survive.

While RIT is deemed an important function at emergency incidents, it shouldn't be established at the expense of other functions. Captain Bill Gustin of the Miami-Dade Fire



Department stated in a personal interview, “Never establish a RIT at the expense of vital firefighting functions. A back up hose line is usually more effective in protecting firefighters inside a building than a company standing outside waiting for something to go wrong.” Captain Gustin also related an incident that illustrates why RIT needs to be proactive instead of just standing around watching. This incident took place while operating at an incident with the Miami-Dade Fire Department.

My company worked at a ship fire for several hours. After returning from rehab, we were assigned to be the RIT. We responded to a mayday for an injured and disoriented firefighter. We successfully located and removed the firefighter in extremely limited visibility because we were familiar with the layout of the vessel. I doubt that we could have located the distressed firefighter if we had not been familiar with the layout of the vessel. That’s my experience with the effectiveness of a pro-active Incident Commander using RIT.” He continued to discuss his opinion of RIT, Another problem I have with RIT is that it is usually discontinued once overhaul begins. Take a look at statistics and reflect on your own experience; a substantial number of firemen are injured and killed during overhaul, due to fatigue and collapse due to fire damage to the structure and weight of accumulated water (Gustin, personal conversation, February 6, 2010).

The National Institute of Occupational Safety and Health (NIOSH) conducts investigations following a firefighter line of duty death. These investigations are very detailed and sometimes take over a year to complete. The reports include a synopsis of pertinent radio transmissions, interviews of personnel operating on-scene, review of training records, departmental policies and procedures, tactics and etc. Once the investigation is complete, a report is issued with recommendations for the fire department to follow to improve their operations.

In July, 2007, a 34-year-old career captain and a 37-year-old engineer died while conducting a primary search for two trapped civilians at a residential structure fire. This story and many like it have been repeated several times over the years.

This report states Recommendation #7: Fire Departments should ensure that a Rapid Intervention Crew is established to respond to fire fighters in emergency situations.” It continues to say, “In this incident, a rapid intervention crew was not in place to assist the two fire fighters once command realized they were missing. Crews were sent in to search for the missing fire fighters, but were not formally assigned as a Rapid Intervention Crew and were placed in service in an uncoordinated fashion to search and recover the fire fighters (NIOSH, 2008).

A NIOSH report on a fire in April 2007 that claimed the life of a Virginia firefighter indicates a delayed deployment of RIT. At 0603, a fire was reported in a single-family home. Attempts to fight the fire were hampered by intense winds. Crews were making an interior attack and searching for victims when conditions turned bad. The victim and another member were searching a master bedroom when “the room turned black then orange with flames. They became separated and the victim was unable to make it out. Air horns were sounded for evacuation and two separate MAYDAYs were called at 0614. At 0621, RIT was finally activated” (NIOSH, 2008).

A NIOSH LODD report from 2007 indicates that, “in order to minimize the risk of similar occurrences, fire departments should ensure a Rapid Intervention Team is established and available.” In this incident, a career firefighter was killed and a Captain was injured while performing an interior search for a victim. The fire was reported at 0449 on May 28, 2007.

“Thirteen minutes after arrival a man-down was broadcast over the radio. At that point all available fire fighters assisted with rescue efforts” (NIOSH, 2008).

In addition to the findings in the NIOSH reports regarding rapid intervention, the reports addressed several other recommendations. These recommendations included;

- Ensuring standard operating procedures are followed
- Ensuring staffing levels are sufficient to accomplish critical tasks
- Ensure firefighters are trained in survival skills
- Ensure Mayday protocols are reviewed and followed
- Ensure radios are operable in the fireground environment
- Ensure the first arriving unit conducts an initial size-up
- Ensure that an Incident Safety Officer is established
- Ensure that all firefighters wear a full complement of personal protective equipment
- Ensure proper maintenance of self-contained breathing apparatus
- Ensure that interior search crew are protected with a hoseline
- Ensure the use of a back-up hoseline
- Ensure the Incident Command System is utilized
- Implement joint training on response protocols with mutual aid departments

A Phoenix, Arizona study in 2002 was conducted after the tragic death of firefighter/paramedic Brett Tarver. Tarver was killed while operating at a fire in the Southwest Supermarket on March 14, 2001. In this incident, rapid intervention was activated but was unable to rescue Tarver. In fact, there were an additional twelve maydays called during the rescue attempt and one firefighter who was attempting a rescue was removed from the structure in respiratory arrest.

For the study, the Phoenix Fire Department Deployment Committee obtained three structures and conducted rapid intervention drills for 1144 firefighters.

During the training many of the RIC team members ran out of air during the training evolutions. The drills showed that a 3000-psi SCBA bottle was good for 13.09 to 24.31 minutes of air. The average SCBA time was 18.7 minutes. The average time from mayday to removal was 21 minutes. RIC teams were running out of air during the firefighter removal phase. In addition, it was taking a crew of 12 firefighters to remove one firefighter. After the training, new procedures for RIT were developed. One change that Phoenix made in their RIT operations is using a two-phase approach. Phase one of a RIC response is to send a team in to locate the firefighters in trouble. Once located, a second RIC team enters to remove the firefighter (Ward, 2003).

After the new procedures were implemented, Phoenix conducted another round of similar training. In the second round of training which was conducted in 2006, "it took an average of nine firefighters four minutes to find, and just over twelve minutes to rescue, a mayday firefighter. One of every five firefighters participating in the first study ended up getting lost and declaring his own mayday. This was reduced to one in 100 in the second study. In 2002, 60 per cent of the mayday firefighters ran out of air, compared to zero per cent in 2006" (Sells, 2009).

Another new concept, called On-Deck, has its roots with the Phoenix Fire Department assists not just rapid intervention but all fire ground operations. "The on-deck crews are assigned as a resource to the sector officer. In addition to being trained and equipped for mayday response, the on-deck crews are available to cycle into the sector as previously assigned crews come out. At that time, another crew takes the on-deck position" (Sells, 2009). "About 4 years ago we bought into the Phoenix On-Deck Concept. It is truly one of the best firefighter safety

initiatives we have ever done for the safety of our people” (Kazmierzak, personal communication, February 9, 2010). The policy for the Clay Fire District defines on-deck as “A forward staging position located just outside the immediate hazard zone, safely distanced from the entrance of a tactical position. The most likely assignments for On Deck companies are to reinforce a position within an assigned sector, crew relief within an assigned sector, FAST crew, or any other tactical position assigned by the IC” (Clay Fire, 2010).

Not all in the fire service believe the on-deck concept for rapid intervention is a good idea. “The main issue is that an On Deck company will be focused on being put to work in fire suppression, not firefighter rescue. This will take them away from the proactive measures that they should be undertaking. A dedicated RIT, opposed to an On Deck RIT, will be focused on firefighter rescue and developing a series of plans in the event of a ‘mayday’. With the On Deck procedure, any new company rotated into the RIT role will have to go back to square one and develop new plans that will work for them” (Kolomay, 2006).

The NFPA 1500, which is *Standard on Fire Department Occupational Safety and Health Program*, discusses the use of rapid intervention in section 8.8. Excerpts of the standard are provided below.

8.8.1 The fire department shall provide personnel for the rescue of members operating at emergency incidents.

8.8.2 A rapid intervention crew/company (RIC) shall consist of at least two members and shall be available for rescue of a member or a crew.

8.8.2.1 Each RIC shall be fully equipped with protective clothing, protective equipment, SCBA, and any specialized rescue equipment that could be needed given the specifics of the operation under way.

8.8.3 The composition and structure of a RIC shall be permitted to be flexible based on the type of incident and the size and complexity of operations.

8.8.4\* The incident commander shall evaluate the situation and the risks to operating crews and shall provide one or more RICs commensurate with the needs of the situation.

8.8.5 In the early stages of an incident, which includes the deployment of a fire department's initial attack assignment, the RIC shall be in compliance with 8.5.11 and 8.5.12 and be either one of the following:

- (1) On-scene members designated and dedicated as a RIC
- (2) On-scene members performing other functions but ready to re-deploy to perform RIC functions

8.8.5.1 The assignment of any personnel shall not be permitted as members of the RIC if abandoning their critical task(s) to perform rescue clearly jeopardizes the safety and health of any member operating at the incident (NFPA, 2007).

NFPA 1710, which is the *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, is another nationally recognized NFPA standard that discusses the use of rapid intervention at emergency incidents. Excerpts of this standard are listed below.

5.2.3.1.2 Personnel assigned to the initial arriving company shall have the capability to implement an initial rapid intervention crew (IRIC). Section 5.2.3.3.2 recommends that “When an incident escalates beyond an initial full alarm assignment or when significant risk is present to firefighters due to the magnitude of the incident, the incident commander shall upgrade the IRIC to a full rapid intervention crew(s) (RIC) that consists of four fully equipped and trained fire fighters” (NFPA, 2001).

NFPA 1710 also recommends in section 5.2.3.2.2 (8) that “An IRIC (Initial Rapid Intervention Crew) shall be established that shall consist of a minimum of two properly-equipped and trained personnel.” Section 5.2.3.3.3 of NFPA 1710 further states that “When an incident escalates beyond the initial full alarm assignment, or when there is significant risk to fire fighters due to the magnitude of the incident, the Incident Commander shall upgrade the IRIC to a full Rapid Intervention Crew (RIC) that consists of four dedicated, fully equipped and trained fire fighters” (NFPA, 2001).

On December 5, 2009, NFPA 1407 was approved as an American National Standard. This is called the *Standard for Training Fire Service Rapid Intervention Crews*. According to section 1.2 of NFPA 1407, this standard was established to “specify a training program that is designed to create a highly disciplined operational capability to rescue fire fighter(s) who become lost, injured, incapacitated, or disorientated at an emergency scene or in the course of a training operation” (NFPA, 2010).

Research was conducted to determine what area fire departments do to meet NFPA standards regarding the use of rapid intervention at emergency incidents. Through personal conversations and e-mails, the following information was obtained.

Through an e-mail interview with Assistant Chief Brandon Loboschefski of the Maumee Fire Department, the following information was obtained regarding how RIT operations are conducted in Maumee. The Maumee Fire Department, which up until January, 2010, went 18 months without a structure fire, does not have a policy or procedure regarding the use of rapid intervention at emergency incidents. Assistant Chief Loboschefski says, “Right now, if a “mayday” is called, as in a lot of places, the attitude is we’ll deal with it somehow” (Loboschefski, personal communication, September 5, 2010). This may change soon. In

October, a RIT drill is planned with the assistance of the Toledo Fire Division. Loboschefski stated that the use of RIT for Maumee came to the forefront after a mutual aid response into Toledo to provide station coverage. While providing coverage, they were dispatched to a structure fire and assigned RIT. Prior to this incident; they have had minimal training in RIT.

Through an e-mail interview with Assistant Chief Josh Drouard from the Rossford Fire Department, the following information was obtained regarding how RIT operations are conducted in Rossford. Rossford, which responded to two structure fires in 2009, does not have a policy or procedure for the use of RIT on emergency incidents. According to Assistant Chief Drouard, “we do not assign RIT on working fires for many reasons-mostly because we are not trained in it, other responding departments are not trained in it, there is no training readily available, due to the newness of some members RIT may not be in their skill level(s), and lastly there is a department that regularly runs RIT crews but are not close enough to us to make an impact” (Drouard, personal communication, September 7, 2010). Drouard also advised that there is a plan to implement a RIT guideline during the first week of November, 2010.

Through a personal conversation with Assistant Chief Chuck Steedman of the Middleton Township Fire Department, the following information was obtained. Steedman advised that Middleton Township does have a written two-in/two-out policy. They do not provide training on rapid intervention, and it is not used at structure fires (Steedman, personal communication, September 12, 2010).

Through an e-mail interview with Deputy Chief Tom Brice from the Perrysburg Township Fire Department, the following information was obtained. The Perrysburg Township Fire Department, which responded to twelve structure fires in 2009, does have a written policy regarding the use of RIT. According to Brice, “We have only on rare occasions assigned a RIT



team. Typically, we don't have the personnel to accomplish this. However, on occasions we do and in those instances it was done by assignment at the time” (Brice, personal communication, September 10, 2010).

In summary, the literature review helped define rapid intervention. Many articles were found by authors and fire service leaders discussing pro and cons of rapid intervention. Interviews conducted with chiefs of fire departments that border the City of Perrysburg to determine what they do for rapid intervention. RIT is an integral part of a safe operating emergency scene.

## **PROCEDURES**

A variety of methods was used to help answer the four research questions in this applied research project. This project followed the American Psychological Association rules and Ohio Fire Executive program guidelines.

Research question #1 asked, “What is rapid intervention?” To answer this question, a web search was conducted via Ohio Link and other search engines including MSN, Yahoo and Google to find professional articles and other publications regarding rapid intervention. Numerous items were found to help define rapid intervention and to give the reader a better understanding on how and why it is used. A number of fire service books from the author’s personal library were used as references for this paper. E-mail conversations were held with a number of fire service leaders from across the country. The NFPA standards were reviewed to determine their definition of rapid intervention. The Ohio Administrative Code (OAC) was also reviewed to give the reader an understanding of the difference between the legal requirements of the OAC and the standards recommended in the NFPA.

Research question #2 asked, “What guidelines or procedures do fire departments that surround the City of Perrysburg follow to implement rapid intervention according to the NFPA standards?” To answer this question it was first needed to be determined what the NFPA recommends regarding the utilization of rapid intervention. NFPA 1407, which is the *Standard for Training Fire Service Rapid Intervention Crews*, was researched along with NFPA 1500, the *Standard on Fire Department Occupational Safety and Health Program* and NFPA 1710, which is *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public, by Career Fire Departments*. To further answer question #2, the author conducted a survey (Appendix 1) using [www.surveymonkey.com](http://www.surveymonkey.com). The survey asked firefighters within the Perrysburg Fire Division questions regarding the use of rapid intervention in Perrysburg. The survey collected information about rapid intervention is handled at structure fires in Perrysburg. Some questions, asked for suggestions on how to improve areas of RIT that may be lacking. The results of this survey were compared to results obtained from other surveys given to area fire departments.

To determine how fire departments around the City of Perrysburg handle RIT operations, e-mails were sent to members of three departments. For the fourth fire department, a personal conversation took place. An e-mail survey was sent to representatives of the Perrysburg Township, Maumee and Rossford Fire Departments. The personal conversation was held with a member of the Middleton Township Fire Department. Each member was asked the following questions:

- How many working structure fires did your department respond to in 2009?
- Does your fire department have a written policy, procedure or guideline for the use of RIT?

- Does your fire department have a policy for the two-in/two-out rule?
- Does RIT get assigned at all working structure fires?
- If RIT is assigned, how is it done?

Research question #3 asked, “What have other fire departments of similar size to the City of Perrysburg done to implement rapid intervention at structure fires according to the NFPA standards?” To determine this, a survey was developed through [www.surveymonkey.com](http://www.surveymonkey.com). A copy of the survey is included as Appendix 2. The survey was sent out to 40 fire departments across the state of Ohio. The list of survey recipients included 20 members of Ohio Fire Executive class nine. Twenty additional suburban and/or career fire departments from Ohio received the survey. A web search was conducted to find current e-mail information for the additional suburban and/or career fire departments. The link was then sent in an e-mail, asking for help in completing the survey, which would be used to help develop this report.

The results of the survey were used to determine trends of fire operations in various regions of the state. To limit the results to meet the survey question, surveys received from fire departments with greater than two fire stations are excluded from the results. The fire departments from the survey which have less than two fire stations that use rapid intervention and conduct rapid intervention training were contacted for additional information on their training and operations.

Research question #4 asked, “What does the Perrysburg Fire Division do to implement rapid intervention at structure fires?” To help determine this, a review of the current guidelines and policies of the Perrysburg Fire Division was conducted to determine if a procedure is already in place for the use of RIT. A review of National Fire Incident Reporting System (NFIRS) incident reports for structure fires that occurred in the City of Perrysburg from January 1, 2007 to

June 30, 2009 was conducted. NFIRS is a database run through the Federal Emergency Management Agency (FEMA) that compiles data on fire incidents which are submitted by fire departments from across the country. A review of the data helped determine the average response time for the first, second and third due fire apparatus. The apparatus' included any engine, tower or squad. The arrival of a medic unit was not tracked in this study due to the first out engine and medic unit responding to structure fires as a company. The medic unit responds with two personnel and are counted as members of the first due engine.

Using the NFIRS fire reports, an analysis was conducted on the number of firefighters operating on scene during the structure fire as compared to the time of dispatch and day of the week. The review of the fire reports was used to see if the Perrysburg Fire Division has adequate staffing on-scene to meet the intent of NFPA 1710, including the functions of rapid intervention on its own or if mutual/automatic aid should be considered.

### **Definition of Terms**

Authority Having Jurisdiction (AHJ) – The agency having the official authority and duty to enforce compliance with a standard or code (NFPA).

Automatic Aid – The capabilities of personnel and equipment for a predetermined response to a neighboring jurisdiction upon receipt of an alarm, this process is accomplished through simultaneous dispatch, is documented in writing, and is included as part of a communication center's dispatch protocols (NFPA).

Company – A single piece of fire apparatus (engine, ladder truck, elevating platform, quint, rescue, squad, ambulance) except where multiple apparatus are assigned that are dispatched and arrive together, continuously operate together, and are managed by a single company officer (NFPA).

Company Officer – This person can be someone appointed in an acting capacity to lead a company (NFPA).

IDLH – (Immediately Dangerous to Life or Health) - An exposure to airborne contaminants that is likely to cause death or immediate or delayed permanent adverse health effects. (NIOSH)

Incident Commander - The fire department member in overall command of an emergency incident (NFPA).

Initial Rapid Intervention Crew (IRIC) - Two members of the initial crew who are assigned for rapid deployment to rescue lost or trapped members (NFPA).

Line of Duty Death (LODD) – Any injury or illness sustained while on-duty that proves fatal.

On-duty refers to being involved in operations at the scene of an emergency, whether it is a fire or non-fire incident; responding to or returning from an incident; performing other officially assigned duties such as training, maintenance, public education, inspection, investigations, court testimony, and fundraising; and being on-call, under orders, or on standby duty except at the individual's home or place of business. An individual who experiences a heart attack or other fatal injury at home while he or she prepares to respond to an emergency is considered on duty when the response begins. A firefighter that becomes ill while performing fire department duties and suffers a heart attack shortly after arriving home or at another location may be considered on duty since the inception of the heart attack occurred while the firefighter was on duty (USFA).

Mutual Aid – A written policy or contract that allows for the deployment of personnel and equipment to respond to an alarm in another jurisdiction, this is part of a written deployment criteria for response to alarms as dispatched by the communications center (NFPA).

On-Deck - A forward staging position located just outside the immediate hazard zone, safely distanced from the entrance of a tactical position (Clay Fire District).

Rapid Intervention Crew (RIC) - A dedicated crew of fire fighters who are assigned for rapid deployment to rescue lost or trapped members (NFPA 1710).

Standard Operating Procedure (Guideline) - An organizational directive that establishes a standard course of action (NFPA).

### **Limitations of the Study**

There were several limitations identified in the research that may have affected the results and outcome of this study. The first limitation involved the number of completed surveys returned by the staff of the Perrysburg Fire Division. Of the 35 surveys emailed to the Perrysburg firefighters, initially only 15 were completed. A follow-up e-mail was sent to the firefighters with the link to the survey. The follow-up e-mail returned an additional nine surveys. To improve the ratio of returned surveys, follow-up e-mails or other notes reminding personnel to complete the survey could have been sent out. There are some fire division members that do not regularly check their e-mails or are not comfortable working with computers. An alternative method for completing the survey should have been considered.

An additional survey was developed and e-mailed to 135 firefighters not affiliated with the Perrysburg Fire Division and 43 were returned for a 31.8% return rate. This survey did not obtain the desired results, so an additional survey was developed. Having to recreate and e-mail an additional survey took time that delayed the completion of this study.

Another limitation was the questionable accuracy of data in fire reports. Proper tracking of dispatch, response and on-scene times are all critical when trying to conduct research. This was a problem when trying to determine if the Perrysburg Fire Division met the guidelines set forth in NFPA 1710. It was very difficult to track the response times of the first, second and third due fire apparatus due to errors in the NFIRS incident reports and errors in the Computer

Aided Dispatch (CAD) system. An example of the CAD sheet is included as Appendix 3. The review found many instances in which the CAD report or the NIFIRS incident report had times that were could not be accurate. One such example is a CAD report showing a dispatch and en-route time being the same in the middle of the night. This was most likely inaccurate because if the firefighters are sleeping, they need to wake up, make their way to the apparatus, and gear up prior to responding. A zero minute out the door time is not possible. A cross-reference of the CAD indicated the crews were not returning for another call when they were dispatched to the structure fire. Another example of inaccurate times is NIFIRS reports in which all the times of all the responding units were the same. An example of this would be the second and third due apparatus having the same times as the first due unit. Since off-duty or part-paid staff would respond from home to the fire station and then respond with the additional apparatus, there should have been a delay of several minutes for the other responding units. This indicates a lack of attention on the part of the fire officer completing the report.

Perrysburg Township Fire responds to all fires within the city on an automatic aid agreement. After reviewing the fire reports and CAD sheets, the arrival time of their fire apparatus is not tracked on all the incidents. There is also no consistent indication of how many apparatus and personnel responded to the incident. This was also true for any incident which was upgraded to include other mutual aid fire departments.

The limited number of structure fires for Perrysburg and the surrounding communities was also a limitation of the study. Having a minimal number of structure fires made it difficult to assess the response data. The lack of a significant number of structure fires may also decrease the competency of the crews responding to the emergency incidents. Not having many structure fires could contribute to complacency and inefficiency among the members of the fire department.

## RESULTS

The following is an overview of all the data results compiled from the surveys and research.

Research Question #1 asked, “What is rapid intervention?”

The research found many different definitions on rapid intervention. All of the definitions refer to a dedicated team of firefighters, who are standing by outside of a structure to rescue firefighters that are in distress. The definition of RIT as provided by the NFPA is “a dedicated crew of firefighters that is assigned for rapid deployment to rescue lost or trapped members.” NFPA 1710 further defines an Initial Rapid Intervention Crew (IRIC) as “Two members of the initial attack crew who are assigned for rapid deployment to rescue lost or trapped members” (NFPA, 2001).

The use of rapid intervention gained hold in the United States with the development of the OSHA Respiratory Protection standard. Section (g) (4) of the OSHA standard 29CFR1910.134 states that, “At least two employees are located outside the IDLH atmosphere” (OSHA, 2008).

While The State of Ohio Administrative Code (OAC) doesn’t specifically mention the use of RIT, section 4123:1-21-07 (C) (3) Fire Department Occupational Safety and Health states:

In interior structural fires a minimum of four employees shall be required, consisting of two employees working as a team in the hazardous atmosphere, who shall remain in voice or visual contact with each other; and two members who are located outside the hazardous atmosphere, who shall be responsible for maintaining a constant awareness of the number and identity of those operating in the hazardous atmosphere and be prepared to perform rescue of those members if required. Interior structural firefighting means 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 (OAC, 2009).

Research question #2 asked, “What guidelines or procedures do fire departments that surround the City of Perrysburg follow to implement rapid intervention according to the NFPA standards?”

Of the four fire departments that border the City of Perrysburg. Perrysburg Township Fire Department is the only agency which has a policy on RIT. That being said, according to Deputy Chief Tom Brice, Perrysburg Township has only on rare occasions assigned a RIT team due to not having enough personnel to accomplish the task.

Two other fire departments do not currently utilize rapid intervention at emergency incidents, but are planning on conducting training and begin implementing RIT in late 2010. The Maumee Fire Department has no policy on strategy to deal with a mayday situation but they do plan to implement a rapid intervention plan in November, 2010. The Rossford Fire Department previously had not assigned rapid intervention because they were not trained and felt no training was readily available. They do plan to implement a rapid intervention plan in November, 2010.

Middleton Township borders the City of Perrysburg to the south. They are a volunteer fire department that does not use rapid intervention and have never trained on it. According to Assistant Chief Chuck Steedman, They have no plans to utilize rapid intervention in the near future.

Research Question #3 Asked: What have other fire departments of similar size to the City of Perrysburg done to implement rapid intervention at structure fires according to the NFPA standards?

Survey two was conducted by sending a total of forty e-mails to members of the fire service around the state of Ohio. The e-mail recipients were asked to complete a survey through [www.surveymonkey.com](http://www.surveymonkey.com) titled “Rapid Intervention and Your Department.” This survey asked the firefighters 14 questions regarding rapid intervention operations within their fire department. Of the 40 survey links sent out to firefighters not affiliated with the Perrysburg Fire Division, 33 were returned. This was a survey return rate of 82.5%. The complete survey results are listed as Appendix 4.

To narrow the results to better fit the criteria established in the research question, surveys returned from fire departments with more than two fire stations were excluded. This is because they are not a similar size fire department to the City of Perrysburg.

Survey Question	Region of Ohio					
	Northeast	Southeast	Southwest	Central	Northwest	Perrysburg
# of Fire Departments Completing the Survey	7	0	4	3	8	1
<b>Department Uses Automatic Aid</b>	<b>85.7%</b>	<b>0.00%</b>	<b>100%</b>	<b>66.7%</b>	<b>25%</b>	<b>Yes</b>
Average Number of Firefighters On-duty	6	0	7.5	6.33	5.5	6
<b>Have a Policy on the 2-In/2-Out Rule</b>	<b>57.10%</b>	<b>0.00%</b>	<b>100%</b>	<b>33%</b>	<b>87.50%</b>	<b>No</b>
Have a Policy on Mayday Operations	85.70%	0.00%	100%	100%	50%	Yes
<b>Have a Policy on the Use of RIT</b>	<b>57.10%</b>	<b>0.00%</b>	<b>100%</b>	<b>33%</b>	<b>50%</b>	<b>No</b>
Always Use RIT at Structure Fires	57.10%	0.00%	75%	00%	37.50%	No
<b>Provides Training on RIT</b>	<b>87.50%</b>	<b>0.00%</b>	<b>100%</b>	<b>66.7%</b>	<b>75%</b>	<b>No</b>

(Table 1)

The results from survey two are listed above in table 1. A total of 22 out of the 33 surveys received from fire departments meet the criteria established of not having more than two fire stations. The table lists the survey results based on five regions of Ohio: northeast, southeast, southwest, central and northwest. There were no surveys returned from the southeast part of Ohio. Information on the Perrysburg Fire Division is listed in the table for reference purposes.

Below, the survey results are broke down further by region.

Northeast Ohio is a primarily suburban area. The largest cities in this region include Cleveland, Akron and Canton. This region accounted for seven returned surveys that met the criteria. Surveys were returned from the following fire departments.

- Fairlawn
- Copley
- Willoughby
- Avon
- Ravenna
- Wadsworth
- Champion Township

Seventy-Five percent of the fire departments in this region utilize automatic-aid in their operations. Of the seven fire departments, five use some combination of automatic/mutual aid when implementing rapid intervention at structure fires. None of the fire departments use their own firefighters as members of a rapid intervention team. Rapid intervention training is conducted on six of the seven fire departments. The fire departments from northeast Ohio average a total of six firefighters on duty per shift and responded to an average of 40 structure fires in 2009. Six of the seven fire departments have a written mayday procedure to be used if a firefighter becomes lost, trapped or otherwise distressed in a structure fire. Over 57 percent of the fire departments have a written policy procedure for both the two-in/two-out rule and rapid intervention. According to the survey results, all of the fire departments that have a rapid intervention policy put a team in place on 100% of their structure fires. There has never been an

activation of the RIT on an emergency scene in northeast Ohio for the fire departments completing the survey.

Southwest Ohio is a primarily suburban area of the state. Cincinnati is the largest city of the region. This region had four fire departments that returned a survey which met the criteria of having less than three fire stations. The fire departments which met the criteria are:

- Harrison
- Forest Park
- Ross Twp
- Greenville

The four fire departments average 7.5 fire fighters on duty each shift and responded to an average of 26 working structure fires in 2009. All of the fire departments from this region are part of an automatic aid agreement. One fire department assigns the task of rapid intervention through a predetermined plan with an automatic aid company. All of the departments have a written policy on mayday operations and for the utilization of rapid intervention teams. Rapid intervention training is conducted by all fire departments. While on stand-by at a structure fire, rapid intervention teams from this region have been activated two times. One incident was the fire on April 4, 2008 in Colerain Township in which two firefighters were killed. In another incident, a mayday was cleared prior to the rapid intervention team making entry.

Fire departments from the central region of Ohio accounted for three surveys which met the criteria of operating less than three fire stations. These fire departments include:

- Mount Vernon
- Celina
- Ashland

The three fire departments have an average daily staffing of 6.3 fire fighters per shift.

Two of the fire departments responded to an average of 25 working structure fires in 2009. One fire department listed 262 structure fires in 2009 for one fire station with an on-duty staff of 6 to 11 firefighters.

Two of the three fire departments utilize automatic aid in their emergency response plan. One fire department assigns rapid intervention to an automatic/mutual aid department. All of the fire departments in central Ohio have a written policy on calling a mayday. One agency has a policy on the two-in/two out rule and rapid intervention use at structure fires. Two of the three fire departments conduct training on the use of rapid intervention. A RIT has not been activated during a structure fire in this region of the state. The northwest region of the state had seven fire departments which met the criteria of operating less than three fire stations.

The fire departments which are included in the survey results are:

- Tiffin
- Fostoria
- Defiance
- Wapakoneta
- Norwalk
- Napoleon
- Perkins Twp
- Huron

These seven departments have six firefighters on-duty per shift and responded to an average of 23 structure fires in 2009. Automatic aid isn't utilized nearly as much as in other areas of the state. Only twenty-five percent of fire departments from northwest Ohio participate in an

automatic aid agreement. Half of the agencies have a policy on mayday operations and rapid intervention. Seven of the eight agencies have a policy on the two-in two-out rule. A rapid intervention team is put into place by nearly thirty-eight percent of the fire departments on all structure fires. Training on the use of rapid intervention is conducted at seventy-five percent of the fire departments.

There are a total of thirteen fire departments from this list that use RIT as part of their fire ground operations and also conduct rapid intervention training for their firefighters. Additional information was requested from the following thirteen fire departments.

The request for information was returned from the fire departments listed in a bold font.

- Copley
- **Willoughby**
- **Wapakoneta**
- Ashland
- Norwalk
- Napoleon
- **Huron**
- Avon
- Harrison
- **Forest Park**
- **Ross Twp.**
- **Greenville**
- Fairlawn

According to a conversation with Chief Steve Miller, the Ross Twp. Fire Department SOG on rapid intervention is a collaborative effort by fire departments in Butler County. Their SOG was enacted on October 8, 2009 and is titled as “Rapid Assistance Teams (RAT)”. In Butler County, A RAT is assigned on all reported structure fires, preferably with four trained firefighters. The minimum staffing for a RAT is three firefighters. According to the SOG; the RAT does not stand-by waiting for an emergency. The team takes “Proactive RAT company actions and tasks.” This means that the team performs a size-up of the structure and “impediments to rapid firefighter exit from the structure shall be removed as appropriate” (Ross Twp., 2009).

The rapid intervention SOG for the Wapakoneta Fire Department was adopted on November 1, 2010.

It states that a RIT shall be established anytime firefighters are on air inside an IDLH structure or atmosphere, or any time command deems it necessary. The SOG call for the use of an initial RIT of two firefighters anytime firefighters enter an IDLH structure. It also states that one initial RIT member must tracking (sic) interior personnel. Their function is to account for the location of the interior crew and initiate a firefighter rescue should it be necessary. This position requires an attack line, radio, PPE, and SCBA. The second RIT member is permitted to take on other roles, such as, safety officer, or equipment operator. This position requires a radio with PPE and SCBA nearby to be donned as soon as possible. The SOG calls for the use of a full rapid intervention crew (RIC) if the incident escalates beyond a first alarm response. The minimum four-person team assembles the proper equipment which is then dedicated solely for rapid intervention operations. (Wapakoneta Fire, 2010).

The Greenville Fire Department's SOG for rapid intervention was initially established in 1999. The latest revision took place on January 1, 2008. Their SOG calls for the implementation of an initial rapid intervention crew (IRIC) with personnel responding on the initial arriving company. "If an incident escalates beyond a first alarm response or other significant risk is present due to the magnitude of the incident (i.e. large scale, special operations, etc.), a full Rapid Intervention Crew (RIC) shall be established" (Greenville Fire, 2008).

The Huron Fire Department utilizes a brief one page standard operating procedure which was established in 2001. Their procedure states that "a rapid intervention team shall be assigned at the discretion of the Incident Commander" (Huron Fire, 2001).

The Willoughby Fire Department SOP on rapid intervention was issued in 1998. The RIT is described in their SOP," Upon the declaration of a working fire, at commands discretion, Command shall request the next closest department for a Rapid Intervention Team. All training requirements set in this SOP shall be required of any mutual aid company as an RIT. At the scene of any incident involving extended interior operations or any incident deemed necessary by the incident commander, there shall be a RIT at the incident commander's disposal. This team shall consist of at least 5 personnel, consisting of interior firefighters of which at least one is an EMT or CFR, and 1 Officer or team leader" (Willoughby Fire, 1998).

Training is an important part of a successful rapid intervention program. Each fire department that returned information about their rapid intervention operations conducts some form of training. The Willoughby, Ross Township, Greenville and Forest Park each responded by sending a DVD or e-mail with a PowerPoint presentation and other documents of their training program. The Wapakoneta Fire Department conducts annual training on rapid intervention but did not have any specific outline our documented training. "The guys stay



current on RIT throughout the year during daily platoon training and we dedicate 3-4 hr. full department training toward RIT each year” (Krites, personal conversation, November 7, 2010).

The Huron Fire Department conducts training on rapid intervention evolutions and self-rescue techniques. “Familiarization with RIT operations and tools is a part of our entry training for new firefighters, but is also a subject of trainings such as our recent FF survival class taught by my Lieutenant, wherein we trained in search and rescue evolutions, FF drags/rescues, Denver drill, Nance drill, etc. This particular class was held at a residence acquired by the department that was to be demolished” (Soisson, personal conversation, November 4, 2010).

The Clay Fire Territory in Indiana has adopted a new way for conducting rapid intervention operations. Their On-deck concept was initially developed by the Phoenix Fire Department. It is defined as “A forward staging position located just outside the immediate hazard zone, safely distanced from the entrance of a tactical position. The most likely assignments for On Deck companies are to reinforce a position within an assigned sector, crew relief within an assigned sector, FAST crew, or any other tactical position assigned by the IC” (Clay Fire, n.d.).

Research Question #4 Asked: What does the Perrysburg Fire Division do to implement rapid intervention?

Of the 35 surveys that were sent via e-mail to the members of the Perrysburg Fire Division, a total of 24 were returned. This was a total of 68.6% returned. The survey questions were used in an attempt to determine the attitudes and opinions on how rapid intervention is handled in Perrysburg. The survey results are included as Appendix 5.

The first question asked of the firefighters was “Do you think the Perrysburg Fire Division properly implements rapid intervention at emergency incidents?” Nearly 92% of the respondents feel that RIT is not properly implemented at emergency incidents within the city. Question #2 asked, “Does the Perrysburg Fire Division provide adequate training for rapid intervention?” The results of this show a near unanimous 95.8% of respondents believe that they are not properly trained in rapid intervention skills. After seeing the results of this question, further investigation was conducted to determine when the last training occurred for rapid intervention. All of the fire division training records are maintained on Firehouse Software. Using the query function, a report was prepared which showed that the fire divisions last documented rapid intervention training in occurred in 2005.

This survey question also asked for recommendations from firefighters on what, if anything, can be done to improve the rapid intervention training. So as not to alter the comments, the recommendations are listed as the firefighters typed them in the survey. Some of the main points in the responses include;

- Self Rescue – Two firefighters recommend some form of training on self-rescue techniques.
- Back-up Lines – Two firefighters mentioned the training on the use of back-up lines. This indicates some confusion on what a RIT actually is. A back-up line should not be confused with RIT operations. General Discussion – Several firefighters mentioned tabletop type discussions on RIT operations. This would be a good way to open up discussion and develop an idea where to start training.

- Repetitive Training – There is a reoccurring theme of some comments on how routine practice would be beneficial to RIT operations. There were also a few comments regarding the infrequent training on rapid intervention.
- Outside Training – One firefighter expressed developing training by “Having someone with RIT knowledge from the outside.”
- Complacency – A few comments indicate a certain amount of complacency regarding the need for and use of rapid intervention in Perrysburg. Two such comments are “Every Firefighter that I have spoken with has said that there has been no real "need" for an RIT team so they haven't really practiced it as much as need be,” and “In the importance of training for RIT is not very high. However, due to the size of our department I do not believe that assigning a RIT team is efficient(sic) nor do I beleive (sic) it would ever be implemented properly.”

According to NFPA 1407, a rapid intervention training program shall include the following areas:

- Risk assessment and risk management
- Activation and management of rapid intervention operations
- Communication procedures specific to rapid intervention functions
- Accountability and resource management
- Criteria for deploying rapid intervention crews and resources to the scene
- Integration of firefighter rescue operations into the incident command system as specified by the AHJ
- Implementation of an incident accountability system that meets the requirement of NFPA 1561, *Standard on Emergency Services Incident Management System*

- Potential impact of RIC operations on the safety and welfare of rescuers and others as well as on other activities at the incident site
- Distinction between rescue and recovery modes

NFPA 1407 also includes recommendations as a minimum requirement for the skill training on the following items.

- Declaring a firefighter emergency
- Search techniques
- Access and extrication
- Air supply
- Ropes
- Protecting downed firefighter(s) in place
- Moving downed firefighter(s) to safety
- Firefighter self-rescue techniques

Question #3 asked the firefighters, “Does the Perrysburg Fire Division have the proper equipment to aid in rescuing a firefighter?” According to the results of this question, a large majority of firefighters in Perrysburg believe there is the proper equipment to conduct rapid intervention operations. Twenty of the 24 firefighters that answered this question believe the proper equipment is there. One person skipped this question.

NFPA 1407 includes a list of recommended equipment for a RIT. This list is included below, (Table 2) with a column indicating which recommended equipment the Perrysburg Fire Division has on their apparatus.

<b>Name of Equipment</b>	<b>Does Perrysburg Have</b>
Ropes (search, rescue, life safety) and webbing	Yes
Forcible entry tools	Yes
Rescue air supply	Yes
Personal Protective Equipment	Yes
Ground Ladders	Yes
Hand light	Yes
Radio equipment	Yes
Bail out rope	Yes
Rabbit tool / hydra ram	No
Stokes basket	Yes
Thermal Imaging Camera	Yes
Power saws	Yes
8' attic ladder	Yes
Hydraulic rescue tools	Yes
Air lifting bags	Yes
Cribbing	Yes
Rope rescue equipment	Yes
Shoring	Yes
Air struts	No

(Table 2)

The fourth question in the survey asked the firefighters, “What if anything, can be done to improve rapid intervention for the Perrysburg Fire Division?” In the survey, one person did not answer this question. The table shown below (Table 3) indicates that the majority of firefighters feel the three main deficiencies for rapid intervention in Perrysburg are training, planning, and procedures. Deficiencies in training were addressed earlier in the results section.

### **Rapid Intervention and the Perrysburg Fire Division**

<b>What if anything, can be done to improve rapid intervention for the Perrysburg Fire Division?</b>		
<b>Answer Options</b>	<b>Response Percent</b>	<b>Response Count</b>
Training	91.3%	21
Equipment	13.0%	3
Procedures	69.6%	16
Planning	78.3%	18
Other	21.7%	5

(Table 3)

A review of the Standing Operating Guidelines (SOG) for the Perrysburg Fire Division shows two guidelines that mention the use of rapid intervention at emergency incidents. One standard operating guideline that discusses rapid intervention is section 2.3.1, Mayday Operations. It simply states that “The Rescue Sector shall deploy RIT” (Perrysburg Fire Division, 2005). This SOG can be found as appendix 6. The other guideline that mentions rapid intervention is section 5.2; Accountability. This section has a bullet that says “Activation of RIT” (Perrysburg Fire Division, 2008). This SOG can be found as appendix 7. No other guidelines or policies could be found that mention rapid intervention, RIT, FAST or any other terminology that could mean rapid intervention.

*Response Times for Structure Fires in the City of Perrysburg, January 1, 2007 to June 30, 2009.*

<b>Date</b>	<b>Run Number</b>	<b>Dispatch</b>	<b>1<sup>st</sup> Due</b>	<b>2<sup>nd</sup> Due</b>	<b>3<sup>rd</sup> Due</b>
<b>05/15/2007</b>	07-0530	1925	1939	1940	n/a
<b>06/03/2007</b>	07-0614	0652	0656	0702	0707
<b>06/26/2007</b>	07-0734	1436	1442	1454	1513
<b>09/30/2007</b>	07-1243	0523	0526	0533	0537
<b>10/25/2007</b>	07-1351	1244	1251	1304	1306
<b>02/28/2008</b>	08-0286	0724	0728	0754	n/a
<b>05/31/2008</b>	08-0726	1620	1623	1629	1640
<b>06/06/2008</b>	08-0759	0119	0122	0134	0140
<b>10/10/2008</b>	08-1398	1915	1919	1924	1924
<b>11/08/2008</b>	08-1521	2201	2205	2210	2211
<b>12/05/2008</b>	08-1654	2139	2145	2157	2217
<b>1/20/2009</b>	09-0099	0539	0541	0550	0557

(Table 4)

The graph shown above lists the twelve working structure fires which occurred in the city of Perrysburg between January 1, 2007 and June 30, 2009. The graph shows the response times for the first due company. The first due company is typically composed of five to seven firefighters, responding on an engine and medic unit with an assistant chief as company officer. If the assistant chief is off shift, the senior firefighter on the crew is the acting company officer.

The average response time for the first due company during the time frame was five minutes. In eight out of twelve (67%) of the structure fires, the first due fire apparatus arrived on scene within four minutes of dispatch. The second due apparatus took an average of 14.3 minutes to arrive on scene. The third due apparatus took an average of 19.3 minutes to arrive on scene. The fire division met the recommendations of NFPA 1710 by having a full-alarm assignment on scene within eight minutes of the initial 911 call in one of the twelve structure fires (8%). The only time in which NFPA 1710 was met for having adequate staffing on-scene in eight minutes was on a drill night.

*Data Collected for Fires in the City of Perrysburg between January 1, 2007 and June 30, 2009*

Date	Run Number	Day of the Week	12a-3a	3a-6a	6a-9a	9a-12p	12p-3p	3p-6p	6p-9p	9p-12a	Firefighters On-Scene
05/15/2007	07-0530	Tuesday							X		23
06/03/2007	07-0614	Sunday			X						16
06/26/2007	07-0734	Tuesday					X				16
09/30/2007	07-1243	Sunday		X							18
10/25/2007	07-1351	Thursday					X				16
02/28/2008	08-0286	Thursday			X						18
05/31/2008	08-0726	Saturday						X			17
06/06/2008	08-0759	Friday	X								17
10/10/2008	08-1398	Friday							X		19
11/08/2008	08-1521	Saturday								X	19
12/05/2008	08-1654	Friday								X	15
01/20/2009	09-0099	Tuesday		X							18

(Table 5)

This chart above indicates that fires occurred throughout the day with the majority of the structure fires being between noon and midnight. The average number of firefighters operating at the scene of a structure fire was 17. The statistics do not show any fluctuation of personnel responding to incidents throughout the different times of the day. The largest response of 23 firefighters occurred on a Tuesday night drill in which fire apparatus were already staffed.

According to the statistics provided in this graph, enough firefighters should be available on-scene to fill all the firefighting positions recommended in NFPA 1710.

## **DISCUSSION**

The purpose of this study was to analyze RIT national standards and how they are implemented by fire departments around the City of Perrysburg, along with other areas of the state. The results of this study indicate a need to improve the use of rapid intervention teams within the City of Perrysburg. Any improvements made in this area will greatly enhance the safety of the firefighters operating on the scene of an emergency.

This study not only uncovered deficiencies in the use of rapid intervention, it also found a number of problems with the way records and incident times are recorded and maintained. This can be found in the Limitations of the Study section of this research paper. The accuracy of future reports, studies and data collection for the Perrysburg Fire Division is dependent on accurate documentation.

The research also concluded that the fire division does not have a policy to comply with Ohio Administrative Code (OAC), section 4123:1-21-07 (C) (3). This section of the OAC is commonly referred to as the two-in/two rule. While it is commonplace for the Perrysburg Fire Division to follow this rule, it lacks a written policy which could cause confusion for personnel. It is imperative that the fire division develop a policy to ensure all members are aware of the rule.

It is noted through the research that many fire departments around Perrysburg and the rest of the state do not use rapid intervention. Of the four fire departments which border Perrysburg, Perrysburg Township is the only fire department that has a policy on rapid intervention. Even so, according to their Deputy Chief, Perrysburg Township has only on rare occasion assigned RIT at



structure fires due to limited manpower. Two other fire departments, Maumee and Rossford are planning on establishing rapid intervention training and procedures while the other department, Middleton Township has no plans to do anything with RIT. The survey results show that of the 22 fire departments from around the state which met the criteria established, only 13 have a policy for RIT. The Established criteria were defined as a fire department operating out of two or fewer fire stations. In the author's opinion, this reflects a complacent attitude towards rapid intervention. The, "it's not going to happen here attitude", that not only affects Perrysburg but the fire service in general. It is encouraging to see that several local fire departments are being to train and establish policies and procedures on rapid intervention. Still, more emphasis needs to be placed on firefighter safety, specifically rapid intervention.

According to the results of the survey conducted with the firefighters from the Perrysburg Fire Division, a change is needed in the way rapid intervention is handled. Over ninety percent of the firefighters surveyed, indicated that the fire division, does not properly implement rapid intervention at emergency incidents. One correction may simply be to educate the firefighters on what rapid intervention actually is. The in-house firefighter survey allowed for the firefighters to make recommendations on how to improve RIT operations. Two of the responses discussed better use of back-up lines. While a back-up line is a very important function of fire ground operations, it should not be confused with rapid intervention.

Research concluded that focus should be placed in three areas to ensure that rapid intervention meets state laws and national standards. Focus should be placed on training, planning, and procedures.

Over 95% of the firefighters surveyed, felt that training on rapid intervention is inadequate. NFPA 1407 recommends that an annual performance evaluation on rapid

intervention skills should be completed. This isn't happening in Perrysburg; a review of training records for the Perrysburg Fire Division showed that the last documented training for rapid intervention occurred in 2005. For rapid intervention, or any other firefighting task to be effective, training needs to be conducted more often than every six years. Repetitive training in dealing with emergency situations will greatly enhance the ability of firefighters to perform rapid intervention skills.

The training levels of the firefighters from Perrysburg also can be questioned. All of the 24 career firefighters have been trained to the State of Ohio Firefighter II level. However, improvements should be made in the minimum training for the part-paid firefighters. Of the 16 part-paid Perrysburg firefighters, only 5 are trained to the State of Ohio Firefighter II level. The rest of the staff either have been trained to the volunteer firefighter level or have not received any training thus far. Training all personnel to a minimum of the State of Ohio Firefighter Level I will enhance the firefighters knowledge base by providing additional training on live fire evolutions and other important aspects of the fire service. This increase in training will allow the fire division to provide additional and consistent training in rapid intervention skills.

According to the records from NFIRS reports, an average of 17 firefighters operates on the scene of structure fires in the City of Perrysburg. This number does not include the four firefighters which respond per the automatic aid agreement with Perrysburg Township. With the inclusion of the firefighters from Perrysburg Township, there is an average of 21 firefighters operating at a structure fire. NFPA 1710 recommends that 15-17 firefighters are on scene of a first alarm assignment. While the research shows the firefighters do not arrive before the NFPA 1710 recommendation of having a full first-alarm assignment on scene within 8-minutes, the numbers do to indicate a surplus of firefighters on scene, which could be used to implement

rapid intervention. So why isn't it being done? The answer seems to go back to the lack of planning and procedures. Poor planning leads to an ineffective use of manpower.

Not having a procedure or guideline for the use of RIT is another problem that this survey found. A review of NIOSH LODD reports found that not having a RIT was a contributing factor in some firefighter fatalities. The same NIOSH reports also found several other contributing factors in firefighter LODD. Not having a rapid intervention team should not be mistaken as being the only reason firefighters are dying. There are several other factors leading to deaths. All of these causes should be explored and improved upon as needed.

Research found various policies and procedures that fire departments use for RIT. The Clay Fire-District in Indiana for example has developed a unique way to implement RIT at structure fires. Through their "On-Deck concept", firefighters are placed in a forward staging area and can be assigned by the Incident Commander to any task on the fire ground, including RIT. The problem with this procedure is that when used, a RIT should be a dedicated unit in place and tasked with only developing an action plan and other functions necessary to perform a firefighter rescue. A team "on-deck" will not be able to effectively operate in the event of an emergency. A RIT should be dedicated to this task only, so an effective size-up can be conducted along while organizing the necessary tools and doing other proactive functions such as removing security bars or deploying ground ladders. The "on-deck" concept could be an effective tool for resource management on a fire scene but not for a rapid intervention team.

In the years following the death of one of their firefighters when a RIT was deployed in an unsuccessful rescue attempt, the Phoenix Fire Department conducted two studies, one in 2002 and the other in 2006, on the use of rapid intervention. Upon completion of the two studies, Phoenix began using a two-phase approach for RIT. The first team consists of two firefighters

who are standing by and upon a declared emergency, are deployed to locate the distressed firefighter. A second team enters to assist the initial rescue team with victim removal.

This appears to be an excellent example of manpower usage, especially for fire departments that may be short-staffed. Instead of initially staging four firefighters as a RIT, only two are used. This will free up the other two firefighters to fulfill other assignments. The initial two firefighters can conduct an initial size-up, gather needed equipment, remove obstructions which may hinder egress, deploy ground ladders and develop an incident action plan. If an emergency is declared, the two-person team can enter the structure to find the victim(s). While searching, the Incident Commander will then be able to form the balance of the RIT utilizing the other firefighters on the scene.

Another part of a successful rapid intervention program is ensuring the proper equipment is available for use when needed. The research shows that 87% of the personnel on the Perrysburg Fire Division are comfortable with the compliment of equipment carried. In NFPA 1407, a list of recommended equipment for rapid intervention is published. Of the nineteen items included on the list, Perrysburg lacks two pieces of equipment. A hydra ram and air struts would be needed to ensure 100% compliance with the standard. This would indicate that Perrysburg is well equipped to handle the necessary functions of a rapid intervention team.

At this time, the Perrysburg Fire Division standard operating guidelines do not include a policy or guideline on either rapid intervention or the two-in/two-out rule.

This Applied Research Project revealed several correctable deficiencies in the operations of the Perrysburg Fire Division. By correcting the problems associated with training, planning and procedures improvements can be made in the utilization of rapid intervention at structure fires in the City of Perrysburg.

The literature review and results sections have provided sufficient information to answer the four research questions.

### **RECOMMENDATIONS**

Through information revealed in the literature review and research results of this Applied Research Project, it is apparent, according to national standards, that the Perrysburg Fire Division does not effectively utilize rapid intervention at emergency incidents. The trend of firefighter line of duty deaths relating to the lack of a rapid intervention team reinforces the need for a well equipped, trained and staffed team that can be activated immediately if an emergency is declared.

Developing a rapid intervention team is a process that will take some time to develop and implement. While developing the RIT program, the Perrysburg Fire Division should evaluate its fireground operations and ensure that firefighters remain safe while working at an emergency scene. The NIOSH reports used for this research paper provided several contributing factors, in addition to not properly using a RIT, relating to firefighter LODD. The fire division should evaluate these causes and other potential hazards. Ensuring standard operating procedures are followed

Prior to implementing rapid intervention into fire division operations, the administration should ensure that all firefighters are adequately trained to a minimum of the State of Ohio Firefighter I level. Doing so will help ensure that all personnel are trained to a minimum firefighting level. The training can be conducted through Owens Community College, Center for Emergency Preparedness. The fire division currently has 11 firefighters requiring training to the firefighter I level. This 84-hour training program could be conducted on the regular Tuesday

night drills with two 8 hour Saturdays over a seven month period. The chart listed below indicates the impact on the fire division operating budget.

<b>Number of Firefighters</b>	<b>Class Fee</b>	<b>Total Class Fee</b>	<b>Training Hours</b>	<b>Average Hourly Pay Rate</b>	<b>Payroll Impact</b>	<b>Total Cost of Training</b>
<b>11</b>	<b>\$ 650.00</b>	<b>\$ 7,150.00</b>	<b>924</b>	<b>\$ 15.00</b>	<b>\$ 13,860.00</b>	<b>\$ 21,010.00</b>

The fire administration should request the funds for the 2012 budget. It should also explore the availability of training grants which could decrease the burden on the budget.

The implementation of rapid intervention is a multifaceted solution. The research indicates a number of steps which needs to be accomplished prior to having effective rapid intervention operations. First, a policy/procedure on the use of rapid intervention at emergency incidents should be developed. The researcher was able to collect several policies/procedures from fire departments from across the state of Ohio. In addition, the current applicable laws and standards should be referenced when writing the fire division's policy/procedure. The fire administration should take the immediate steps necessary to work with the SOG committee in developing and implementing this guideline. A draft guideline is attached as Appendix 8.

The operating guideline should recommend that the Incident Commander establish an IRIC as soon as personnel are available, without putting a burden on other firefighting operations. Firefighting operations such as ventilation, search and rescue, back-up line placement and water supply shall all take precedence over IRIC. The guideline should also list tasks that should be completed as soon as the IRIC is formed. The first task that needs to be accomplished is a complete size-up of the structure. The IRIC should also gather necessary tools to perform a rescue, removing any obstructions for firefighter egress, and develop an incident action plan. If

the IRIC is activated to perform a rescue, the incident commander will then use the remaining resources on scene to form the balance of the RIT.

In addition to the SOG on RIT, the Perrysburg Fire Division should establish a policy on the two-in/two-out rule. This SOG should be based on section 4123:1-21-07 (C) (3) of the Ohio Administrative Code (OAC). Enacting this policy will ensure that the fire division is in compliance with the law.

Planning is the next step of the process of ensuring rapid intervention is used at all structure fires in the City of Perrysburg. The research shows that an adequate number of personnel is available at the scene of a structure fire to implement RIT as recommended by NFPA 1710. The Incident Commander needs to maintain a better accountability of the personnel operating on the scene of a structure fire. If needed, early activation of mutual-aid is important to ensure adequate staffing is on-scene to perform rapid intervention along with other needed tasks.

Consideration should be taken to forming a regional team with the four fire departments which border the city. Three of the four fire departments are already planning to begin training and developing policies on the use of rapid intervention. By forming this team, the fire departments would be able to work together and develop common policies and training programs. It would also ensure that additional resources would be available as an incident grows beyond the capabilities of the Perrysburg Fire Division. The fire administration should also consider expanding the automatic-aid response with other communities. This sharing of resources has been proven to be effective in other areas of the state to ensure adequate staffing arrives in a timely manner. The research indicates that automatic aid isn't used as effectively in Northwest Ohio as with other areas of the state. Perrysburg should take the lead in developing such a plan.

An effective training program is imperative to the success of a rapid intervention deployment. A RIT program should be developed by the training officer in accordance with NFPA 1407. The training should be based on our standard operating guidelines and from the PowerPoint presentations and videos collected from the Ross Township, Greenville, Willoughby, and Forest Park Fire Departments. This classroom training would be the first of two phases of the program. The next step would be to conduct a real-life training scenario similar to the one conducted by the Phoenix Fire Department in 2002 and 2006. As with the Phoenix program, statistics would be kept to track improvement in operations or the need to focus on areas of deficiencies. Additionally, based on NFPA 1407, annual skill assessments should be incorporated into training and focus on the following areas:

1. Declaring a firefighter emergency
2. Search techniques
3. Access and extrication
4. Air supply
5. Ropes
6. Protecting downed firefighter(s) in place
7. Moving downed firefighter(s) to safety
8. Firefighter self-rescue techniques

By using the above recommendation, the Perrysburg Fire Division will be able to develop an effective rapid intervention program. This program will greatly enhance the safety of all firefighters operating at a structure fire in the City of Perrysburg.



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# APPENDIX 1 – RAPID INTERVENTION AND THE PERRYSBURG FIRE DIVISION

**Rapid Intervention and the Perrysburg Fire Division**

**Default Section**

**1. Do you think the Perrysburg Fire Division properly implements rapid intervention at emergency incidents?**

Yes  
 No

**2. Does the Perrysburg Fire Division provide adequate training for rapid intervention?**

Yes  
 No

**3. If you answered no to question #2, what other training could be used to help with the rescue of a downed firefighter?**

**4. Does the Perrysburg Fire Division have the proper equipment to aid in rescuing a firefighter?**

Yes  
 No

**5. If you answered no to question #4, what other equipment could help in the rescue of a downed firefighter?**

**6. What if anything, can be done to improve rapid intervention for the Perrysburg Fire Division?**

<input type="checkbox"/> Training	<input type="checkbox"/> Planning
<input type="checkbox"/> Equipment	<input type="checkbox"/> Other
<input type="checkbox"/> Procedures	

**Rapid Intervention and the Perrysburg Fire Division**

7. How many years of experience do you have in the fire service?

< 5

6 - 10

11 - 15

16 - 20

21 - 25

> 25

## APPENDIX 2 – RAPID INTERVENTION AND YOUR DEPARTMENT

**Rapid Intervention and Your Department**

**1. Name of Station**

\* 1. What is the name of your fire department?  
| |

2. What is your name and e-mail address? (This will be kept private)  
| |

\* 3. In what region of the state of Ohio is your fire department located?

Northeast

Southeast

Northwest

Southwest

Other

4. Does your fire department utilize an automatic aid agreement with neighboring agencies?

Yes

No

\* 5. How many fire stations does your fire department operate?

1

2

3

4

5

6

7 or more

\* 6. How many firefighters are on-duty during a shift?  
| |

\* 7. How many structure fires did your fire department respond to in 2009?  
| |

## Rapid Intervention and Your Department

\* 8. Does your fire department have a written policy/procedure/guideline regarding the two-in/two-out rule?

Yes

No

\* 9. Does your fire department have a written policy/procedure/guideline on MAYDAY operations?

Yes

No

\* 10. Does your fire department have a written policy/procedure/guideline for the operation of a rapid intervention team?

Yes

No

\* 11. Does your fire department always use rapid intervention on structure fires?

Yes

No

\* 12. If you answered yes to question #11, how does your department assign a rapid intervention team?

They are predetermined in the department's old fire department

Assign RIT from within your own fire department

Assign RIT from other departments and have them arrive on scene

Other

Not Applicable

Other (please specify)

\_\_\_\_\_

\* 13. Does your fire department conduct training on the use of rapid intervention?

Yes

No



### Rapid Intervention and Your Department

\* 14. If your fire department uses rapid intervention, has your team ever been activated to perform a rescue?

- Yes
- No
- NA

If yes, please describe incident:

## APPENDIX 3 – CAD SHEET

Tuesday, June 22, 2010 5:40:23

CALL DETAILS FOR: **10.000928**

\*\* For official use only \*\*

Reported Date: **06/22/10 03:47:43**Location: **11275 Eckel Junction Rd - Perrysburg, OH, 43551**CommonName: **Oak Bend Church**

Cross Streets:

Reported CFS: **4107**Initial Alarm Level: **0/1**Final Alarm Level: **0/1**Receive Source: **T - Telephone**Reported Time: **06/22/10 03:47:43**

RA #:

Stacked Time: **06/22/10 03:48:06**X/Y Cords: **B/22**Dispatched Time: **06/22/10 03:48:43**

District:

On Scene Time: **06/22/10 03:55:56**Prime Unit: **E1**

Contained Time:

**06/22/10 05:40:12**

## Unit Response Information

**102**

DI	EN	OS	IN
3:54:10	3:54:14	3:56:48	5:40:11

**E1**

DI	EN	OS	IN
3:48:43	3:52:22	3:55:56	4:51:18

**E2**

DI	EN	OS	IN
4:11:09	4:11:16	4:14:13	5:04:11

**M1**

DI	EN	OS	IN
3:52:31	3:52:34	3:56:43	4:51:40

**T1**

DI	EN	OS	RE	IN
4:00:11	4:00:24	4:04:15	5:04:47	5:11:34

## Comments

6/22/10 03:47:43	STEEPLE ON FIRE	Opr - 3276
6/22/10 03:48:43	Dispatched: E1 (SYS)	
6/22/10 03:55:30	TWP 501 ENR	Opr - 3276
6/22/10 03:56:19	FLAME AND SMOKE FROM THE STEEPLE; E1 ATTACK; 103 COMMAND	Opr - 3276
6/22/10 03:56:43	M1 STAGING BY HYDRANT ON ECKEL JUN	Opr - 3276
6/22/10 03:59:49	102 IS COMMAND	Opr - 3276
6/22/10 04:00:01	SHUT ECKEL JUN DOWN	Opr - 3276
6/22/10 04:00:24	T1 ENR W/5	Opr - 3276

## APPENDIX 4 – RAPID INTERVENTION AND YOUR DEPARTMENT SURVEY

### RESULTS

<b>Q1. What is the name of your fire department?</b>		
Answer Options	Response Count	
answered question		33
skipped question		0
<b>Q2. What is your name and e-mail address? (This will be kept private)</b>		
Answer Options	Response Count	
		33
answered question		33
skipped question		0
<b>Q3. In what region of the state of Ohio is your fire department located?</b>		
Answer Options	Response Percent	Response Count
Northeast	24.2%	8
Southeast	0.0%	0
Southwest	33.3%	11
Central	12.1%	4
Northwest	30.3%	10
	answered question	33
	skipped question	0
<b>Q4. Does your fire department utilize an automatic aid agreement with neighboring agencies?</b>		
Answer Options	Response Percent	Response Count
Yes	63.6%	21
No	36.4%	12
	answered question	33
	skipped question	0
<b>Q5. How many fire stations does your fire department operate?</b>		
Answer Options	Response Percent	Response Count
1	36.4%	12
2	30.3%	10
3	18.2%	6
4	9.1%	3
5	3.0%	1
6	0.0%	0
7 or more	3.0%	1
	answered question	33

<b>Q6. How many firefighters are on-duty during a shift?</b>		
Answer Options	Response Count	
answered question	33	
skipped question	0	
<b>Q7. How many structure fires did your fire department respond to in 2009?</b>		
Answer Options	Response Count	
	33	
answered question	33	
skipped question	0	
<b>Q8. Does your fire department have a written policy/procedure/guideline regarding the two-in/two-out rule?</b>		
Answer Options	Response Percent	Response Count
Yes	69.7%	23
No	30.3%	10
	answered question	33
	skipped question	0
<b>Q9. Does your fire department have a written policy/procedure/guideline on MAYDAY operations?</b>		
Answer Options	Response Percent	Response Count
Yes	84.8%	28
No	15.2%	5
	answered question	33
	skipped question	0
<b>Q10. Does your fire department have a written policy/procedure/guideline for the operation of a rapid intervention team?</b>		
Answer Options	Response Percent	Response Count
Yes	66.7%	22
No	33.3%	11
	answered question	33
	skipped question	0
<b>Q11. Does your fire department always use rapid intervention on structure fires?</b>		
Answer Options	Response Percent	Response Count
Yes	57.6%	19
No	42.4%	14
	answered question	33
	skipped question	0

<b>Q12. If you answered yes to question #11, how does your department assign a rapid intervention team?</b>		
Answer Options	Response Percent	Response Count
Through a predetermined mutual/automatic aid fire department	9.1%	3
Assign RIT from within your own fire department	12.1%	4
Assign RIT to a mutual/automatic aid fire department once they arrive on scene	18.2%	6
Other	24.2%	8
Not Applicable	36.4%	12
Comments		10
	answered question	33
	skipped question	0
<b>Q13. Does your fire department conduct training on the use of rapid intervention?</b>		
Answer Options	Response Percent	Response Count
Yes	87.9%	29
No	12.1%	4
	answered question	33
	skipped question	0
<b>Q14. If your fire department uses rapid intervention, has your team ever been activated to perform a rescue?</b>		
Answer Options	Response Percent	Response Count
Yes	9.1%	3
No	84.8%	28
N/A	6.1%	2
Comments		5
	answered question	33
	skipped question	0



## APPENDIX 5 – RAPID INTERVENTION AND THE PERRYSBURG FIRE DIVISION

### SURVEY RESULTS

<b>Q1. Do you think the Perrysburg Fire Division properly implements rapid intervention at emergency incidents?</b>		
Answer Options	Response Percent	Response Count
Yes	8.3%	2
No	91.7%	22
	answered question	24
	skipped question	0
<b>Q2. Does the Perrysburg Fire Division provide adequate training for rapid intervention?</b>		
Answer Options	Response Percent	Response Count
Yes	4.2%	1
No	95.8%	23
	answered question	24
	skipped question	0
<b>Q3. If you answered no to question #2, what other training could be used to help with the rescue of a downed firefighter?</b>		
Answer Options	Response Count	
	22	
answered question	22	
skipped question	2	
<b>Q4. Does the Perrysburg Fire Division have the proper equipment to aid in rescuing a firefighter?</b>		
Answer Options	Response Percent	Response Count
Yes	87.0%	20
No	13.0%	3
	answered question	23
	skipped question	1
<b>Q5. If you answered no to question #4, what other equipment could help in the rescue of a downed firefighter?</b>		
Answer Options	Response Count	
	6	
answered question	6	
skipped question	18	
<b>Q6. What if anything, can be done to improve rapid intervention for the Perrysburg Fire Division?</b>		
Answer Options	Response Percent	Response Count
Training	91.3%	21
Equipment	13.0%	3
Procedures	69.6%	16
Planning	78.3%	18
Other	21.7%	5
	answered question	23
	skipped question	1

<b>Q7. How many years of experience do you have in the fire service?</b>		
Answer Options	Response Percent	Response Count
< 5	26.1%	6
6-10	13.0%	3
11-15	26.1%	6
16 - 20	13.0%	3
21 - 25	4.3%	1
> 25	17.4%	4
	answered question	23
	skipped question	1

## APPENDIX 6 – MAYDAY SOG



	<b>Title: Mayday</b>	Number: 2.3.1	
	Effective Date: 04/05/2005	Revision:	
	Section: Communications	Page: 1 of 2	
Director of Public Safety:		Fire Chief:	

**PURPOSE:** To establish a standardized procedure for a firefighter to clearly communicate that they are either lost, trapped or in distress inside of a structure or other hazardous environment.

**Guideline:** In the event a firefighter becomes lost, trapped or distressed inside of a structure or other hazardous environment he/she should immediately announce on their portable radio “**MAYDAY, MAYDAY**”. This will notify the Incident Commander (IC), Rapid Intervention Team (RIT), and all other fire department personnel operating on the fireground that a firefighter is in distress.



- All radio traffic other than that relating to the rescue shall be stopped.
- The IC shall obtain the following information from the firefighter in distress.
  - Location – If not known, get an estimate, i.e. side and division.
  - What the problem is
  - How many firefighters are in distress
- All other firefighters shall continue with their assignment.
- The IC shall appoint an officer or senior firefighter to be in-charge of the Rescue Sector.
- The Rescue Sector shall –
  - Deploy RIT
  - Stay in radio contact with the distressed firefighter.
  - Ensure lighting is placed at all entrances and windows.
  - Deploy ladders to upper floors
  - Remove any security bars from the windows and doors.
- Ensure there is enough medic units on scene to care for the fire fighters
- Radio Communications –
  - Fireground operations will be moved to an alternative radio frequency as directed by the i.e. Wood County Channel #3
  - The Rescue Sector, RIT and the firefighter calling the MAYDAY shall remain on the main fire frequency, this will be designated as the “RESCUE CHANNEL”
  - To best understand radio transmissions, they should be SLOW and DELIBERATE.
  - When the rescue is complete it shall be announced over both radio frequencies being utilized.
- The Distressed Firefighter(s) should do the following.
  - Contact IC and advise of situation
  -



	Title: <b>Mayday</b>	Number: 2.3.1	
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- **STAY CALM** – This obviously will be a very stressful event for all involved. Preserve your air supply.
- If you are lost try to orientate yourself with your surroundings.
- Activate your PASS alarm.
- If lost with another firefighter, stay together.
- Search for an exit/look for light.
- Attempt to find and follow a hose line/rope to safety.
- Use a flashlight as a beacon.
- Make tapping sounds with a tool.
- After the incident, ensure that CISD takes place.



## APPENDIX 7 – ACCOUNTABILITY SOG

	Title: <b>ACCOUNTABILITY</b>	Number: 5.2	
	Effective Date: 03/04/2008	Revision: 1	
	Subject: <b>Safety</b>	Page: 1 of 3	
Director of Public Safety:		Fire Chief:	

**PURPOSE:** The purpose of this guideline is to establish a system to maintain accountability of all firefighters while they are operating at the scene of an emergency incident.



### **GUIDELINE**

- Description of Components
  - Personal Accountability Tag (PAT)
    - All personnel shall be issued three (3) tags
      - One will be used for the Primary Passport
      - One will be used for Point of Entry Control
      - One will be a spare tag
    - The tags are to be stored on the underside of the fire helmet when not in use
    - The tags will be color coded as follows;
      - White- Chief Officers
      - Yellow- Lieutenants/Captains
      - Black – Engineers/Firefighters
  - Passports
    - The Primary Passport shall be located in the cab of each apparatus
      - While responding to an incident the officer in charge will ensure that all PAT are placed on the Primary Passport
  - Unit Boards
    - Are located in the cab of each apparatus
    - It shall be used by the Company Officer who may be operating as Command or as sector officer
    - The crew assignments and area of operation shall be written on the Unit Board.
  - Command Board
    - The Command Board is located in Squad One and will be utilized as the situation dictates
- Activation and Use
  - The Personnel Accountability System (PAS) will be initiated at all of the following incidents.
    - At all fire incidents, including; Stand-by responses and MVA
    - At the discretion of the Incident Commander (IC)
  - It shall remain in use until the Incident Commander determines its use is no longer necessary

	Title: <b>ACCOUNTABILITY</b>	Number: 5.2	
	Effective Date: 03/04/2008	Revision: 1	
	Subject: <b>Safety</b>	Page: 2 of 3	
Director of Public Safety:		Fire Chief:	



- First arriving apparatus
  - If going fast attack and the Company Officer is passing command
    - The Primary Passport is left in the apparatus.
  - If the Officer in Charge establishes Command
    - The IC shall remove the Passport from the apparatus and place it on the Unit Board
    - Arriving units shall deliver their Passports to the IC who will document their assignment and deployment locations.
    - The IC should assign a firefighter to collect the Passport and deliver them to the Command Post
- Sector Officers
  - When IC assigns a Sector Officer, the Sector Officer shall attach all of the assigned units to a Unit or Command Board.
  - He/She will use it to track all units and personnel along with their locations and assignments
- Point of Entry Control
  - This will be utilized when IC determines a more stringent PAS is needed.
    - Examples included but are not limited to:
 

Large Area Search	Ice Rescue
HAZMAT	Confined Space
  - When a person enters a special hazard area he/she will give their PAT to the Accountability Officer
    - As soon as a person exits the special hazard area they shall retrieve their PAT from the Accountability Officer
  - The Accountability Officer shall be sure to maintain contact with all crews operating in the special hazard area.
- Personnel Accountability Report (PAR)
  - This is a roll-call of personnel operating at an emergency scene to help account for firefighters
  - The Incident Commander may request a PAR at anytime
  - The Officer in Charge of each crew will announce PAR if all members are accounted for
  - Crewmembers shall make face-to-face contact with their officer to announce PAR
  - If a member is missing that information must immediately be relayed to Command

	Title: <b>ACCOUNTABILITY</b>	Number: 5.2	
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- The IC shall obtain information on who is missing, location and assignment
- The Rapid Intervention Team (RIT) shall be activated as needed
- Notes
  - The PAS does not reduce the Company Officer's responsibility to supervise his/her crew.
  - Engaging in activities on the emergency scene without the knowledge of Command is "freelancing" and is a safety violation
  - To maintain effective accountability, any change in a crews location shall be announced to Sector Officer or Command
  - When units return to service, the Company Officer shall report to the Command Post and retrieve the unit's Passport
  - The Company Officer shall be sure that all PAT and Unit Boards are accounted or and returned to their proper locations
  - At the end of a shift or incident, each member shall be sure to remove their PAT from the apparatus
  - If a PAT is lost or damaged, the firefighter shall notify his/her Company Officer to get t replaced.

## APPENDIX 8 – DRAFT RIT SOG



	Title: <b>Rapid Intervention</b>	Number: 5.3	
	Effective Date: Draft	Revision: A	
	Subject: Safety	Page: 2 of 2	
Director of Public Safety:		Fire Chief:	

References: NFPA 1407, 1500, 1710

Purpose: To assist personnel with rapid intervention operations in the event of firefighter(s) declaring an emergency or becoming incapacitated while working in an IDLH environment.

Guideline:

- A rapid intervention team (RIT) should be put into place by the Incident Commander (IC) at all working structure fires in the City of Perrysburg as recommended in NFPA 1500.
  - It is important to note, a RIT should not be put into place until other important tasks are assigned. These tasks include, but are not limited to the following:
    - Water Supply
    - Fire Attack
    - Back-up Line
    - Search and Rescue
    - Ventilation
    - Exposure Protection
  - The IC should effectively utilize personnel on-scene to ensure all assignments are made at an emergency incident.
  - If adequate staffing is not available, additional resources should be requested.
- An Initial Rapid Intervention Team (IRIT) should be assigned as soon as feasible by the IC. The IRIT consists of two firefighters trained in rapid intervention operations.
  - The IRIT should gather necessary equipment including:
    - Search Ropes
    - Forcible Entry Tools
    - Rescue Air Supply
    - Personal Protective Equipment
    - Hand Lights
    - Portable Radio
    - Thermal Imaging Camera
  - A walk around should be conducted
    - Any hazards that may inhibit firefighter egress should be removed.
    - A scene size-up should be conducted and an incident action plan developed based on the size-up.
  - The IRIT should stage in an area easily accessible to the incident
  - If activated, the IRIT should enter the structure as close as possible to the last known location of the victims.
    - The Incident Commander should assign a Rescue Sector Officer (RSO) to guide rescue operations.
    - The RSO should form the balance of the RIT.
  - The IRIT's assignment is to deploy into the structure using the rope bag as a guide and find the missing firefighter(s).

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	Effective Date: Draft	Revision: A	
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- Other personnel operating inside the structure should stay with their assignment unless they are given permission to search for the missing personnel.
  - Listen for the sounds of a PASS alarm, yelling or other sounds that may indicate the location of the trapped personnel.
- If a victim is discovered, the IRIC should evaluate the need for additional resources for extrication.
  - Notify the RSO as soon as the victim is found.
    - Continue to update the RSO on status of the rescue.
- If the victim is conscious, and able to leave the structure on their own, assistance should be provided to guide them to the exit.
- If the victim is trapped or otherwise unable to exit, the IRIT should take the following actions.
  - Turn off pass alarm
  - Notify the RSO that the firefighter(s) are located and give best-known position.
  - Check the firefighter for breathing
    - If the fire fighter is not breathing remove them immediately by the most expedient means available.
    - If the fire fighter is breathing check SCBA air supply
      - Change SCBA air supply if needed
    - Attempt to drag, carry, and or extricate firefighter(s) to safe position.
    - If firefighter(s) must be abandoned temporarily activate his/her pass alarm. Leave extra S.C.B.A. and search rope in place while you relocate to a safer position.
  - If the firefighter is not breathing remove them immediately by the most expedient means available
- Special Considerations
  - All personnel operating at the scene should be aware of changing building conditions.
  - The Risk Assessment shall be constantly evaluated.