Training for Proficiency in Saving Your Own

In The Sidney Fire Department

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A research project submitted to the Ohio Fire Executive Program

July 19, 2004

CERTIFICATION STATEMENT

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ABSTRACT

The topic of training and how much has been brought up as a topic of discussion at the Sidney Department of Fire and Emergency Services on an almost daily basis. Save Your Own (SYO) and Rapid Intervention Teams (RIT) have also gotten a lot of attention within the department lately.

The problem that prompted this research project was a training accident in the spring of 2003. While several members of the department were testing Self Contained Breathing Apparatus (SCBA) for purchase we used SYO and RIT drills to test the air packs. Other than live fire conditions, it was felt that these drills were some of the most physically demanding and that the air packs would be properly tested. During one of the drills, the author fell and received a badly sprained left ankle. This led the author to wonder how several SYO and RIT Instructors could have forgotten so much and resulting in one of those being taken to the emergency room by a Medic Unit.

The following questions were posed:

1. How frequently should the department conduct SYO training, specifically the ladder bails?
2. How can the department ensure that all the firefighters receive the same training and demonstrate proficiency?

In conducting this research, action research was used to gather data to answer the questions posed. Action research was used because the information collected was used to develop a training guideline so that all three crews will receive the same training on an annual basis. All the literature was current and in all cases the literature was written after June 1998. The majority of the articles were applied research projects from the National Fire Academy's Executive Fire Officers Program. The rest of the literature was from trade magazines and a FEMA Special Report on RIT.

The research project began with a through review of all the literature collected to help the author become more knowledgeable about the subject. After a review of the material, a SYO

evolution involving the Ladder Bail was conducted using four control groups. The information gathered during the four days of observing ladder bails was then used to develop a guideline for the fire department SYO and RIT instructors to follow during the annual training on SYO and RIT Drills.

TABLE OF CONTENTS

INTRODUCTION

Statement of the Problem

The problem this study addressed was to determine how often Save Your Own (SYO) drills should be practiced in order to demonstrate proficiency in SYO Operations. The drill that was studied is the Ladder Bail, along with the tools used. The study looked at how often the drill will need to be practiced until the actions become second nature.

The Sidney Department of Fire and Emergency Services (SFD) is made up of 37 personnel. SFD operates three shifts with eleven personnel on each shift, working a 24-48 rotation. The remaining four personnel make up the 40 hour staff positions handling administrative and fire prevention duties. SFD has three engines, one ladder, one heavy rescue, four medic units, four staff vehicles, and two utility vehicles. The department handles over 3200 calls a year with 78% of those being medical calls.

In March of 2002 SFD started training a group of officers and firefighters to become SYO and Rapid Intervention Team Trainers (RIT). The 12 trainers would then train the rest of the department in RIT and SYO. During 2002 the department invested a large amount of time and money in training, and equipment purchases so that RIT could be utilized on the fireground. During the late spring and early summer of 2002 all Sidney firefighters were given training in SYO and RIT operations. Since the summer of 2002, very little training was performed specific to SYO or RIT operations.

In the spring of 2003 the members of SFD formed a committee and started talking with members of the Piqua Fire Department (PFD) about supplying RIT to each others departments during an emergency that would require a RIT to be staffed. The two departments then started researching the topic of RIT and after trying to staff a RIT at working fires it was apparent that both departments were understaffed and therefore unable to adequately staff RIT. Both departments have a minimum

staffing requirement of eight personnel on duty. At the time of the writing of this paper the two departments are close to working out the details on supplying the other department with an engine company of four personnel to perform all RIT duties at the scene of structure fire and Hazardous Material Incidents.

In the spring of 2003 a committee of Sidney firefighters started testing two different brands of self contained breathing apparatus (SCBA) to identify which one the department should purchase. Several SYO and RIT drills were used to test the SCBA. Some of the drills used were the Ladder Bail, Tool Bail, Hose Bail, taking injured firefighters up or down steps and other related exercises.

During the evaluation of the SCBA several of the committee members, all of which are SYO and RIT Trainers, suffered injuries most were bruises, but one of the members ended up in the emergency room with a badly sprained left ankle. Another problem was that it had been so long since the department had practiced any SYO or RIT Drills, the committee members had to get the books out to see how the drills were supposed to be performed. The question that came to mind is if the trainers could not remember all of the drills during a practice session, how could the firefighters be expected to remember the drills during a real emergency?

Purpose of the Study

The purpose of this study is to develop a set of guidelines for all three shifts to follow to insure that all the firefighters receive the same SYO training on a regular basis. The end result will be a check off list with the skills that a firefighter will need to train on regularly. The check off list will serve as documentation that the firefighter completed the training and demonstrated proficiency.

Research Questions

The research methodology used for this applied research project will be action research. With the available resources the purpose of this project is to develop a set of guidelines for the training of fire personnel in SYO and RIT Operations. Two questions are asked of this project:

1. How frequently should the department conduct SYO training, specifically the ladder bails?
2. How can the department ensure that all the firefighters receive the same training and demonstrate proficiency?

BACKGROUND AND SIGNIFICANCE

The Sidney Department of Fire and Emergency Services, like all fire departments have invested a lot of time and money in training its firefighters. In the past very little thought had been given to rescuing an injured or trapped firefighter that had been operating at the scene of an emergency. During the early 1990's, this started to change as other departments started adopting procedures for rescuing injured or trapped firefighters. Sidney Fire has been fortunate in the fact that we have not needed to rescue one of our own, but the potential for a firefighter to become injured or trapped at an emergency and needing help is very real.

The guidelines for training this research will produce will ensure that all Sidney firefighters receive the same SYO and RIT training on a regular basis. Currently personnel train on all three shifts, but at times there is a lack of continuity from shift to shift when it comes to training.

In addition to testing the SCBA for purchase, talking with crew members also brought the problem of being able to rescue one of our own or ourselves to light. The training for each crew, while very good, is not always uniform. At the present time if a fire department member is on authorized leave, they are not usually required to make up the training missed on a particular day. After talking with fire department members and observing the shifts at the scene of emergencies, steps need to be taken that ensure all members receive SYO and RIT training, even if the need to be caught up at a later date.

The potential impact this study will have on Sidney Fire and Emergency Services will be to have highly trained and motivated firefighters ready to save themselves or one of their own, should they or another firefighter need rescuing during an emergency operation. This will also result in a more uniform training schedule as all members of the SFD will receive the same training in SYO and RIT operations. One side benefit maybe an increase in morale, as the members will know that everything possible in the way of training is being done to ensure their safety.

LITERATURE REVIEW

The literature review focused on research papers or articles dealing with training and RIT. The literature review looked at the department's own Standard Operating Procedures (SOP) as well as training manuals that pertain specifically to RIT operations. Several articles in fire related journals were also reviewed as part of the literature search.

A review of the Sidney Fire and Emergency Services training requirements and SOP's revealed a short, concise policy that guides an Officer's decision process during an emergency as it relates to establishing and manning RIT. There was no mention of when or how often a firefighter should be given training on RIT operations. There was also no mention of proficiency as it pertains to RIT. (Sidney Fire Department SOP Manual)

Lt. Dave Gallagher (2003) writes in his article that RIT has been around for almost 100 years, but only recently has there been resurgence in its importance to the fire service. He goes onto write that departments like Phoenix and Indianapolis have conducted extensive training scenarios where a firefighter is trapped and in the majority of the cases the crews fail to rescue the victim. He points out that the main reason is the lack of training in specific RIT operations.

In his article Real World RIT Schaefer (2003), writes about the development of a county-wide Standard Operating Guideline for Washington County, Wisconsin. He discusses the training aspects of the RIT and how it needs to be a coordinated effort. Through training, the Washington County RIT Committee was able to implement a county wide program that benefited all the fire departments in the County.

While reading research papers from the Executive Fire Officers Class at the National Fire Academy, it became apparent that training fire department members in SYO and RIT was paramount to the successful rescue if a firefighter was in trouble. Parow (1999) refers to an article by J.K.

Crawford in the April 1999 issue of *Firehouse* that "To be successful, a RIT must train in rescue and search techniques until they become second nature to them" (p 9).

Parow further cites work by R. Lasky in an article published in the July 1997 issue of *Fire Engineering* called Saving Our Own: The Rapid Intervention Team Officer. In the article it states that "Many fire departments are issuing Standard Operating Procedures for RIT, but are failing to properly train their personnel" (p. 12)

While researching SYO and RIT, I came across Standard Operating Procedures (SOP's) from two departments that have invested a lot of time into RIT. (Virginia Beach Fire Department and Bryn Athyn Fire Company). While neither department mentioned training in their SOP's, it became quite clear that the departments had invested a lot of time into the training aspects of SYO and RIT.

In research conducted by Sanchez (2000) he found that " The real, clear consensus and agreement was in the fact that RIT's, who are highly trained experts in rapid intervention, would save precious time in locating, removing, and saving the lives of lost, trapped, injured fire service personnel"(pp 15-16).

Sanchez goes onto cite work by A. Fredericks who wrote an article for *Fire Engineering* (April 1999 p.82) titled Engine Companies Support of RIT/FAST Operations, Fredrick's states that " Training continuously and realistically in both "routine" and not so routine fireground operations… physical strength, and endurance training to help firefighters withstand the punishment of firefighter rescue operations; and developing mental toughness so that one can withstand the emotional rigors of firefighter rescue efforts – especially if they are unsuccessful" (p. 20).

On the training for a fire department the National Fire Protection Agency (NFPA) states in NFPA 1500 section 5.3.2 "The fire department shall develop a reoccurring proficiency cycle with the goal of preventing skill degradation and potential for injury and death of members" (NFPA 2002) In

section 5.3.4 it goes onto say that “The fire department shall provide an annual skills check to verify minimum professional qualifications of its members.”(p.1500-13)

In his research article, Dan Wright cites an article written by J.M. Golden in the 1992 Nov/Dec Rescue titled The Final Rule. 55-62. Golden discusses the initial training of employees as required by the Occupational Health and Safety Administration (OSHA) and that the training needs to be appropriate content for the type of job the employee will be expected to perform.

In his research project Grindle (1999) points out that to improve any training program there must be accurate record keeping. He goes onto say that the training should be relevant to the fire department and that the firefighter will need to be proficient at the skills.

Of all the research papers, articles, SOP’s and training manuals dealing with training, especially specific to RIT training, none gave a minimum amount of training required. They all however, referred to competency, or proficiency of the individual being trained. In his research paper, Chief Shaw describes the benefits of a competency based training program for all new hires. Shaw found that a large number of the part time personnel were trained at other departments and that some of the training was not up to the same level as his department required. He developed a competency based training program for his department, that focused on getting new hires the same training, no matter who the instructor. (1998)

In a special FEMA Technical Report *“Rapid Intervention Teams and how to avoid Needing Them*” the authors talk about the need for training in all aspects of technical rescue. They go on to say that “For RIT to be successful, it is essential that team members receive training in special rescue, self-survival, and forcible exit techniques, as well as how to operate as a team.” (p.14)

The authors of the FEMA Report go onto say “that one of the most important considerations in forming a RIT is training. Training should not only refresh the fundamentals of firefighting and

search and rescue, but also should stress an attitude of safety and caution in responding to all incidents combined with specifics on the art of firefighter rescue." (pp. 14 -15)

In summary, after reading several reports on the topics of training, SYO, and RIT teams, it has become clear that, although the SFD has spent a lot of time and money on training, the department is still deficient in this area. While none of the reports gave a set definition of minimum training requirements, it is clear that SFD must decided what minimum will be acceptable and then set the level of proficiency that would be expected from the firefighters.

PROCEDURES

To gather the data needed to determine the amount of training needed to stay proficient at SYO and RIT evolutions, the members of the SFD were taken to an old house that we were using for training. They were given a scenario in which a firefighter was performing a vent, enter, and search operation (VES). All firefighters were required to be in full turnout gear along with an SCBA and a tool of their choosing.

While the ladder bail and other SYO and RIT evolutions can save a firefighters life if needed during an emergency, it should be noted that while training on SYO and RIT Drills, a qualified instructor will need to be on the scene. With this in mind a safety officer will also need to be assigned to oversee the training. Firefighter safety should be the top priority.

The firefighters were divided into four control groups. The groups were identified “A”, “B”, “C”, and “D.” Each firefighter is identified by a randomly assigned number to save any embarrassment to the firefighters that had trouble with the evolution. They were “A1”, “A2”, and so on until firefighters in all four groups were assigned a number. One firefighter at a time was asked to suit up in full turnout gear and don SCBA, and then meet with the control officer for instructions. Several of the firefighters wanted to practice a couple of times before performing the drill for this research project. It was explained to them that if they had a fire right now and needed to perform a ladder bail they would not get a chance to practice. They were told that the idea was to try and determine how often these skills needed to be practiced so that if needed at the scene of an emergency they could perform the maneuver without hesitation.

When group “A” was performing the drill some of them were timed to see if they could descend the ladder in under five seconds. Firefighters are very competitive by nature and this led to some safety concerns as they started racing each other to get the fastest time. A couple of the firefighters came out the window and swung around so fast that they almost went off the other side of

the ladder. The stop watch was then put away and the firefighters were told to concentrate on technique rather than speed.

Groups “A” and “D” were asked to perform the ladder bails in the morning and groups “B” and “C” performed theirs in the afternoon. Groups “B” and “C” trained all morning on other evolutions. This was done to see if fatigue would play any factor in the ladder bail evolution. In all but one case, fatigue did not appear to present a problem. During the ladder bail the firefighter has their body weight on the arms and shoulders for about one to two seconds, due to the short time frame fatigue does not appear to affect a safe and efficient ladder bail.

Firefighters in all four groups had some problems. The most serious problem was not grabbing the correct ladder rungs, which lead to other problems. All of the firefighters but one was able to overcome some small mistakes and successfully complete the evolution, except a firefighter in group “B” that fell off the ladder. There was no injury as the safety system worked properly and the firefighter was lowered to the ground. (The safety system is explained later in this paper.)

The proper way to perform a ladder bail is to lean headfirst out the window as far as possible to get the upper body away from the intense heat and smoke. The firefighter then uses their strong arm to hook the second rung and puts their other arm out to grab the fourth rung. This will usually allow most of their torso and legs to be out of the building. The next step is to swing their legs and body around and put their legs on the outside of rail portion of the ladder. Then with their feet and legs on the outside rails of the ladder the firefighter slides down the ladder to safety on the ground. From the moment the firefighter reaches the ladder to make the decent to the ground should only be 3 to 5 seconds and the movements should be smooth and natural. (See appendix 2 for guidelines of a proper ladder bail)

The ladder was set at about a 45 degree angle to the building. It is important to make sure the ladder is not set at too steep of an angle, a steep angle could cause the firefighter to descend at a pace

that is too fast to control. The tip of the ladder was positioned so that it could be seen from inside by the firefighter so they knew which window to exit from. The ladder was tied into the building by driving a piece of metal rebar into the ground and tying a rope from the second ladder rung and attaching it to the rebar.

The safety line was set up by knocking a hole in the ceiling above the window. Webbing was then wrapped around two of the ceiling joists and tied together using a water knot. Then a carabineer was attached to the webbing. A safety line was then passed through the carabineer. A belay man was positioned so that he could see the firefighter during the drill. The rope was attached to the firefighter using a large self locking hook and this was attached to the SCBA harness.

For the drill the firefighter was instructed to ascend the ladder and start searching the room. Another firefighter acting as the safety man attached a rope to the firefighter and told him the room was quickly becoming untenable and they needed to exit as quickly as possible. The firefighter then made his way back to the ladder and performed a ladder bail. There were 25 firefighters from Sidney and five from Piqua that participated in the drill. The last time the firefighters had performed the ladder bail ranged from two years ago to the morning of the experiment. This will be explained further later in the paper.

Group "A"

Group "A" had nine firefighters participate in the drill. Firefighters A1 to A8 had last performed the ladder bail in June of 2002. Firefighter A9 had last performed a ladder bail in June of 2001. All but one of the firefighters was able to quickly exit the building. Firefighter A6 got his turnout pants caught on the tip of the ladder. Other problems encountered were firefighters grabbing the wrong ladder rungs and not getting their body far enough out of the building. This caused their legs to get caught between the window seal and the tip of the ladder. (See appendix 1 for all the results)

One item that was not considered before the drills started, but became quickly evident, was the overall physical condition of the firefighter. The firefighters that had a regular workout routine with weights to build their upper body strength performed better than the firefighters that do not exercise at all or had an irregular work out routine. During the ladder bail there is one point that your whole upper body is supported by your arms as you swing your legs around.

Group "B"

Due to miscommunication the Officer of group "B" had them practice the drill several times that morning. As could be expected, there were very few problems with control group "B" and their ability to perform the drill. There were eight firefighters in control group "B" and only one firefighter had problems. Firefighter B4 fell off the ladder. In the training situation the safety line performed as designed and there were no injuries. At the point in the evolution where the firefighter swings their legs out to the side of the ladder the firefighter lost control and fell off the side of the ladder. This was attributed to the following:

1. The firefighter had had two major shoulder surgeries and two separate pregnancies in the past four years and had not rebuilt her strength yet.
2. The firefighter had performed the ladder bail five times that morning along with other SYO drills and was becoming fatigued by the time this drill was conducted.

Group "C"

Group "C" had eight firefighters participate in the ladder bail drill. All but one of these firefighters had performed the ladder bail in June of 2002. Firefighter C8 had performed the ladder bail in May of 2003. This group had a lot of the same problems that group "A" had. The biggest problem was a hesitation at the start and confusion on which arm to lead with.

Firefighter C8 was able to perform the ladder bail with little difficulty. Firefighter C8 is a SYO and RIT Instructor. He had last performed the ladder bail in May of 2003 while testing SCBA.

Group "D"

Group "D" is a group of five Piqua Fire Department members that agreed to help with the project. All five of these firefighters had practiced the ladder bails in September of 2002. All of the Piqua Firefighters had the same problems as the Sidney Firefighters. They hesitated on which arm to use to hook the second rung and on which rung to place their second hand.

Definition of Terms

NFPA 1500 refers to the National Fire Protection Associations standard on Fire Department Occupational Safety and Health Program. This is the standard to follow for all the health and safety issues involving firefighters.

VES or vent, enter, and search is a fire department term that refers to the rapid search of a room for fire victims without the benefit of a hose line for protection. The firefighters, usually two, go straight to the area of a reported trapped victim, enter a window and then rapidly search the room for the victim.

SCBA stands for Self Contained Breathing Apparatus. This is the air supply that the firefighter carries on their back during operations that are in an atmosphere that is dangerous to their health.

Limitations of the Study

The study was limited in scope due to time constraints of the project due date. To be completely comprehensive, all SYO and RIT drills would need to be performed and evaluated. Then the individual firefighter would need to perform each drill and demonstrate proficiency. This research was purposely kept to one evolution so that the time line could be met.

The literature review was also limited due to a couple of factors. The topic of RIT and SYO, while having been around for a number of years, it is a relatively new phenomenon and there is not a

lot researched articles written on the topic to date. In addition when it comes to minimum standards or demonstrating proficiency, there is no real set definition. I found several articles and research papers that referred to training, and while they all agreed that training is necessary, and while there should be some type of standard, none of the papers I found defined it by giving a set of parameters to reference.

Another limitation that was caused by the time constraint was that three of the four groups had not performed the ladder bail in almost two years. To get a more comprehensive and accurate data collection the ladder bail drill would need to be performed again at different time frames. For example; Group “A” would perform the ladder bail at three month intervals, group “B” would perform the ladder bail in six months and again at one year, group “C” would perform the ladder bail in nine months and group “D” would perform the ladder bail in one year. This would give the most comprehensive data of how often to have this type of training so that the firefighters stay proficient.

RESULTS

1. How many times a year should the members of Sidney Fire Department conduct SYO training?

After observing the firefighters perform the ladder bails it is evident that the firefighter will need to train on the ladder bail at least one day a year. Practicing the evolution several times in one day, the firefighter should be able to demonstrate proficiency and should be able to use the procedure correctly to escape a dangerous situation if the need arises.

The most common problem was hesitation on which arm to hook with and which arm to grab the fourth rung with. In an emergency, this hesitation could cause the firefighters behind this individual to receive burn injuries as they are waiting their turn to exit the building.

2. How can we ensure that all the firefighters receive the same training and demonstrate proof of proficiency?

The best way to ensure this is to have a training guideline developed for all RIT instructors to follow, along with a check list of what each firefighter will need to do to prove that they can effectively perform the ladder bail. The RIT Instructors will need to meet once a year to review the procedure and discuss what is expected of each firefighter on the day they are tested. (See proposed check list for the ladder bail in appendix 2.)

DISCUSSION

After a lengthy literature review and then observing four control groups perform the Ladder Bail Evolution, it became clear that regular mandatory training of the Ladder Bail Evolution is a must to ensure that the firefighter will act appropriately and quickly when their life is in danger at the scene of a structure fire. The conclusion of the research is supported by the findings of other authors.

While observing the ladder bails, it also became apparent that the firefighters that had prepared themselves physically for the job performed the evolution with a lot more confidence and ease than the firefighters that have no formal workout plan. This was even more evident when the firefighter made a mistake and became caught on the ladder or got his feet caught between the ladder and the window seal. These firefighters were able to self-extricate themselves and still make it safely to the ground.

Sanchez(2000) cites work by A. Fredericks who wrote an article for *Fire Engineering* in (April 1999 p.82) titled Engine Companies Support of RIT/FAST Operations in which Mr. Fredrick's says that " Training continuously and realistically in both "routine" and not so routine fireground operations… physical strength, and endurance training to help firefighters withstand the punishment of firefighter rescue operations; and developing mental toughness so that one can withstand the emotional rigors of firefighter rescue efforts – especially if they are unsuccessful. (p. 20)

Almost everyone had trouble with the drill, with the exception of several members of control group "B", which had practiced earlier in the day. Chief Shaw (1998) cites work done by Basil Deming which states, "Many fire service professionals realize that knowledge and skill previously learned will deteriorate without use" (p.13)

In his research paper, Parow (1999) cites work by JK Crawford, which states; "To be successful, a RIT must train in rescue and search techniques until the become second nature to them" (p.9)

It has become clear to this author that the literature review and the data collected during the ladder bail drills support each other. Although the data collect was limited by the research deadline, by comparing the data collected to the training records, it was clear that the firefighters who had performed the ladder bail in the last 12 months or less did better on average than those had not performed a ladder bail in two years or more.

Control group “B” demonstrates this point further, by them doing the evolution several times earlier in the day, on average they did far better than the other control groups. While it would not be practical to have the firefighters train on the same drill every time they report for duty, this does demonstrate that the more often a particular drill is practiced, the better the firefighter will be able to perform that function.

Proper hands on training are not only essential to fireground survival, it could be considered negligent to not require that the firefighters demonstrate on a regular basis that they are proficient in fireground evolutions, specifically, as it relates to this paper, the ladder bails.

RECOMMENDATIONS

The recommendations for the Sidney Department of Fire and Emergency Services are to further study the SYO and RIT Drills. This study will need to be conducted over a one to two year period with each control group conducting drills at different times to see how often each drill will need to be practiced in order to stay proficient.

The next step would be to have the department adopt the Ladder Bail Training Guideline, along with a similar guideline for all SYO and RIT Drills, and have all firefighters perform the ladder bail for a SYO Instructor to demonstrate proficiency of that evolution. It is also recommended that the training committee come up with a list of critical skills that every firefighter will need to train on regularly and then develop a check list to insure that all the firefighters are given the same training. The goal should be to develop the list and of skills and check lists over the next 12 months.

REFERENCES

Sidney Fire and Emergency Services (2002) *Policy and Procedures Manual* Rapid Intervention Team Standard Operating Procedure February 6, 2003

National Fire Protection Association 1500 (2002) *Fire Department Occupational Safety and Health Program*

Garrity, Thomas J. (1999) *Rapid Intervention Teams at structure Fires* Emmitsburg, Md: National Fire Academy Learning Resource Center

Shaw, William J (1998) *Benefits of Competency Based Training Program* Emmitsburg, Md: National Fire Academy Learning Resource Center

Sanchez, Fred (2000) *Rapid Intervention Teams – An Overlooked Tool to Save Firefighters Lives* Emmitsburg, Md: National Fire Academy Learning Resource Center

Grindle Jr. Crosby R. *Improving Training to Improve ISO Rating* Emmitsburg, Md: National Fire Academy Learning Resource Center

Wright, Dan *A Fire Department Training Program that Complies with the Fedral, State, and Local Regulations* Emmitsburg, Md: National Fire Academy Learning Resource Center

Parow, John E. *The Development and Use of Rapid Intervention Teams for the Chelmsford, Ma. Fire Department* Emmitsburg, Md: National Fire Academy Learning Resource Center

Virginia Beach Fire Department *Rapid Intervention team Firefighter Manual*

Bryn Athyn Fire Company *Standard Operating Procedure FAST*

FEMA *Rapid Intervention Teams and How to Avoid Needing Them Special Report* Emmitsburg, Md: National Fire Academy Learning Resource Center

Gallagher, Dave M. (2003 October) *Truck Talk* Fire Apparatus pages 6, 20, & 21

Schaefer, Brad (2003 October) *Real-World RIT Developing Standard Operating Guidelines* Fire Engineering Pages 24-32

APPENDIX 1

Results of Ladder Bails

Firefighter A1 had last performed the ladder bail in June of 2002. Firefighter A1 hooked the second rung with his strong arm, but then used his other arm to grab the third rung instead of the fourth. The result was that he did not move his legs far enough down the ladder and when he went to swing his legs; his feet became caught between the tip of the ladder and the window seal. He was able to keep control of his body and free himself. It took him 10 seconds to descend the ladder.

Firefighter A2 had a lot of questions before he performed the drill. The last time firefighter A2 had performed the ladder bail was June of 2002. He was only told what the scenario was and that in an emergency he would not have time to ask any questions. He performed the maneuver without any problems, although his time was slow at 15 seconds to descend the ladder.

Firefighter A3 last performed the ladder bail in June of 2002. Firefighter A3 was able to hook the second rung and grab the fourth; however he had trouble sliding down the ladder rails.

Firefighter A4 had last performed the ladder bail in June of 2002. Firefighter A4 was able to hook the ladder correctly, but grabbed rung three instead of rung four and ended up getting his feet caught between the ladder tip and the window seal. Firefighter A4 did have the upper body strength needed to free himself and was able to successfully complete the drill.

Firefighter A5 had last performed the ladder bail in June of 2002. Firefighter A5 caught the second rung with his arm, but missed the fourth rung and almost got his arm caught between the rungs. He was able to regain control, but missing the rung greatly slowed his escape down the ladder.

Firefighter A6 last performed the ladder bail in June of 2002. Firefighter A6 did not have his pants pockets properly closed and when he leaned out the window, his pocket caught on the top of the ladder rail. Firefighter A6 was able to free himself, but it took him approximately 25 seconds, when the average time was around 10 seconds.

Firefighter A7 had last performed the ladder bail in June of 2002. Firefighter A7 had no real problems, but the firefighter hesitated on which arm to hook with and which arm to grab rung four with.

Firefighter A8 had last performed the ladder bail in June of 2002. Firefighter A8 came out the window so fast that he over-rotated and nearly went off the side of the ladder. It was at this point that I decided to stop using the stop watch. Again the safety equipment played a major part. The ladder was properly set and an anchor had been tied to the bottom of the ladder. This prevented the ladder from tipping over.

Firefighter A9 had last performed the ladder bail in June of 2001. Firefighter A9 performed the first part of the drill fine, but at the end of the rotation his foot missed the ladder, however he was still able to safely slide down the ladder.

Firefighter B1 had performed the drill five times earlier in the day. Firefighter B1 had no problems during the drill.

Firefighter B2 had performed the ladder bail five times earlier in the day and he had no problems during the drill.

Firefighter B3 had performed the drill three times earlier in the day and again this firefighter had no problems.

Firefighter B4 had performed the evolution six times earlier in the day. This firefighter fell off the side of the ladder. The firefighter hooked the second rung and grabbed the fourth rung properly. As the firefighter started to swing her legs around she fell off the side of the ladder. There seemed to be two factors in causing the firefighter to fall.

1. The firefighter had performed the ladder bail six times earlier that day and had also performed several other SYO drills. After speaking with the firefighter fatigue seemed to be one contributing factor.

2. This firefighter had had two major shoulder surgeries and was also recovering from a pregnancy. After speaking with the firefighter it also appears that the firefighter is not back up to full strength from these surgeries and the pregnancy.

Firefighter B5 had performed the drill one time earlier and had no problems with the drill.

Firefighter B6 had performed the drill two times earlier and had no problems with the drill.

Firefighter B7 had performed the drill four times earlier in the day and had no problems with the drill.

Firefighter B8 had performed the drill two times earlier in the day and had no problems with the drill.

Firefighter C1 had last performed the ladder bail in June of 2002. Firefighter C1` had no real major problems, but he did hesitate for a second on which arm to lead with and hook the rung.

Firefighter C2 last performed the ladder bail in June of 2002. Firefighter C2 had no major problems, but he also hesitated on which arm to use as the hook on the second rung.

Firefighter C3 last performed the ladder bail in June of 2002. firefighter C3 had no problems with the drill.

Firefighter C4 had a lot of questions about how to perform the drill and wanted to practice. He was told that the scenario was being run as close to a real situation as possible and that he would not be able to stop and practice in the event of an emergency at a fire scene. This firefighter performed the drill in a very slow and deliberate manner. After hooking his arm and placing his other arm on the third rung he slowly swung his legs around. After the rest of the firefighters had completed the drill that morning, Firefighter C4 was given some pointers on hand placement and went again. This time he went a little faster and had no problems.

Firefighter C5 had last performed the ladder bail in June of 2002. this firefighter got his pants pockets stuck on the top of the ladder rail. The firefighter was able to free himself and complete the evolution with no other problems.

Firefighter C6 had last performed the ladder bail in June of 2002. Firefighter C6 had no problems performing the evolution.

Firefighter C7 had last performed the ladder bail in June of 2002. Firefighter C7 had no problems performing the evolution.

Firefighter C8 had last performed the ladder bail in May of 2003. Firefighter C8 had no problems performing the drill.

Firefighter D1 last performed the ladder bail in September of 2002. Firefighter D1 hesitated on which arm to hook and then was able to complete the drill with no other problems.

Firefighter D2 last performed the ladder bail in September of 2002. Firefighter D2 had no problems with the drill.

Firefighter D3 last performed the ladder bail in September of 2002. Firefighter D3 hesitated on which arm to hook and had no other problems with the drill.

Firefighter D4 last performed the ladder bail in September of 2002. Firefighter D4 hesitated on which arm to hook and then when he swung his legs around he lost control for a second causing him to land hard on the ladder. he regained control and slid to the ground with no other problems.

Firefighter D5 last performed the ladder bail in September of 2002. Firefighter D5 had no problems with the drill.

APPENDIX 2 –

Guidelines for Ladder Bail Evolution **Date_____**

The firefighter will need to perform these steps in order to successfully complete the ladder bail and to demonstrate proficiency.

____ Approaches the window and confirms ladder is present.

____ Crawls out window, headfirst, while staying as low as possible.

____ Hooks arm of choice on the second rung.

____ Uses other arm to grab the fourth rung.

____ Feet clear the window seal.

____ Firefighter swings legs around in a quick, but controlled manner.

____ Firefighter puts legs on rails of ladder feet on outside of rails.

____ Firefighter slides to the ground in a quick, but controlled descent.

Automatic failures

____ Firefighter falls from ladder

____ Firefighter gets feet hung up on top of ladder or in window seal

____ Firefighter gets part of their turnout gear caught on ladder preventing the completion of the evolution or substantially slowing them down.

____ Firefighter hooks the wrong rung with the first arm or hesitates

_____ _____

Firefighters Signature SYO Instructor