

USING LIVE RESCUERS AS “VICTIMS” IN VERTICAL ROPE RESCUE TRAINING - “IS IT SAFE?”

The practice of using live rescuers as “victims” in vertical rope rescue training has been questioned and addressed by many agencies as being an unnecessary risk. This practice has been commonplace for many agencies and has many merits. The fire service and rescue service has always stated that “Safety” is the number one priority and we take many precautions when training. Are these precautions really enough though? It seems we have an excellent record, but recent studies have shown that some of the safety systems we use may be unreliable or downright dangerous. This presentation will address some concerns and question some current practices to help us determine if we are really as safe as we believe we are.

About the Presenter

Tom Finch has been a career firefighter with the Union Colony Fire/Rescue Authority in Greeley Colorado for 22 years and has been a volunteer with the Johnstown Fire Department for 10 years. He has been responsible for developing and delivering technical rescue training for his home agencies as well as Aims Community College and Red Rocks Community College in Denver in the areas of Rope Rescue and Confined space Rescue for 12 years. Tom teaches both career and volunteer fire departments most of which do not have dedicated rescue teams, but include training in these areas as part of their regular fire department training. He is certified as a Rescue Technician through ROCO and has attended numerous other training schools and seminars including NATRS and ITRS since 1994. You can reach Tom Finch @ 1007 N 2nd St. Johnstown, CO 80534 or ThomasF451@aol.com

Using Live Rescuers as “Victims” in Vertical Rope Rescue Training “Is It Safe?”

Purpose

My purpose in writing this report is not to dictate policy changes or recommend that national standards be developed. It is to discuss current accepted practices and the results of my research in this area. As an industry, we do our best to deliver realistic quality training in a very demanding and dangerous environment. I hope the many rescue professionals who provide training to others will find the information in this presentation useful when making decisions for delivering training to others.

Background

During a training session with my municipal fire department, I was directing truck company members in a single line litter lower exercise from a grain elevator tower. After some review of basic techniques, we were preparing to perform the lower with a firefighter as a victim in the litter. My Battalion Chief had arrived on scene to observe the training and asked me if we intended to use a “live” victim for the exercise. After I advised him of our intent, he directed me to halt the operation and use a rescue dummy instead. I tried to explain the common practice and importance of using a “live” firefighter in this role, but, was told that this was not up for discussion. Further contacts provided feedback that our Operations Division Chief and Chief of the Department also agreed that this was a totally unnecessary risk.

As a result of this incident, I decided to do some research to justify my actions and regain permission to “do what we’ve always done”.

My first step was to develop a survey that many of you completed in Salt Lake City at the ITRS in November of 2003. I have followed up with contacting standard development agencies, fellow instructors and administrators and sending requests for input on the internet.

The following report is a compilation of my findings, which are by no means conclusive, and some personal thoughts on our commitment to safety.

The Survey

I received 110 completed surveys. The numeric results are as follows without comments. Comments will be addressed later.

1. Type of Agency you represent

32 - Fire Service 48 - Rescue 4 - Industrial 21 - Teaching 2 - Manufacturer
Other: 1– Government 1– Military 1- Law enforcement

2. Does your agency use live persons for rescue victims in the Vertical environment?

102 - Yes (96%) 4 - No

3. Does your agency have specific policies or procedures that allow or prohibit this practice?

14 -Yes 94 - No (87%)

4. Has your agency had a documented injury or fatality due to a training accident with live subject?

6 - Yes 102 - No

5. Do you use additional precautions during training with a live victim? **32 - Yes 74 - No (70%)**

6. What advantages do you see to using live subjects during vertical training?

1. **___ See Comments on additional page ___**

7. Do you feel that these advantages outweigh the potential risk of injury or death in an

83 - Yes 6 - No 19 - Not Sure

8. Do you think the NFPA should consider addressing this issue for incorporation into a current or future standard? **50 - Yes 48 - No 10 - not sure or No answer**

Comments on Survey results

Item 1: Numbers show a diverse group of agencies with a typical cross section of the industries likely to attend the ITRS. All groups would have a very common bond in that we all are involved with rescue training in some form.

Item 2: 96% responded that they do use live victims.

Item 3: 87% had no written policy addressing this matter.

Item 4: Only 6 responded that they were aware of accidents. Comments attached to “yes” answers included:

“Injury only”

“but not rescue practice”

“injury only – not from victims in stokes”

“minor rockfall injury to patient. Could just as easily been the rescuer”

Item 5: 70% responded that they do not use additional precautions. Of those that said “yes” comments included:

“Victim always has two points of attachment”

“We use a top Safety line during all training & incidents attached to both victim and system”

“Sometimes run an extra line to Pt. Our jobs are dangerous enough without getting hurt in training.”

“Harness on victims with shock absorber w/ separate safety line”

“Face shields, etc. helmet, patient pkg & comfort (pad!)”

“Depends on type of training: for litters, NO; for pickoff, yes”

“All loads are tested with “Joe” (heavy dummy) first”

Item 6: Most responses included some variation of the following:

“Train as you fight – we rescue victims of flesh and bone, not Rescue Randy”

“Practice of patient packaging and determining areas that make patient uncomfortable”

“Allows rescuer to empathize with patient being in a litter – prevents manhandling”
“Places faith in fellow members of your team and their abilities”
“Gives immediate feedback to rescuer as you simulate medical problems (vomiting etc.)”
“Don’t have to drag around a mannequin to remote locations”
“Gives rescuers a sense of importance of ensuring skills are practiced and the rescuer’s attention to detail is enhanced”
“Live subject can yell, scream & whimper and otherwise better imitate real victim”
“There are great differences between working w/ static load vs a dynamic load. A dynamic load is a realistic situation and better prepares a team/individual for a “real” situation. A live subject can provide feedback that a weight or dummy cannot”
“The very first time rescuers move a stretcher with someone in it should not be on a rescue”
“Live victim can act out injury scenarios”
“Mannequins are expensive – rescuers are easily replaced. (just kidding)”

Item 7: 93% responded “yes”. Some additional comments were enlightening, some frightening.

“Potential risk of injury or death exists in all aspects of life. Risk assessment & risk mitigation are the key elements”
“Depends on training level and supervision”
“I am a firm believer. Last Wednesday I incorporated “live victims” into trench rescue”

Item 8: About half & half.

Specific Training types

Specific rescue scenarios require various levels of training, equipment and instructor expertise. Not all rope rescue training will lend itself to the use of a dummy.

Low Angle rope rescue:

Requires a relatively low level of training and has a fairly low risk to the victim even when lashed into a litter.

Rappelling:

The student must be on line to learn. No option to use a dummy.

Pick-off or line transfer:

The victim is typically conscious and may be able to assist (or resist) the rescue effort.

Individual safeties and freedom of movement make the victim able to assist in his own rescue if a problem arises.

Vertical rescue with rescue litter (lower or raise)

Most hazardous type of rescue to rescuers, attendants as well as the victim.

Once packaged, the victim is relatively defenseless. This type of rescue training is really the focus of the question of using a dummy.

I understand that there is a big difference in the wilderness SAR and the urban realm. I am primarily involved with structural rescue situations where we use I-beams and building

elements rather than BFR's for anchors. Mountain rescue also has an added hazard of rock fall to consider.

Levels of Response/Training

NFPA 1670 refers to three levels of response to technical rescue situations: Awareness, Operations, and Technical. Most training programs relate to this progression and train accordingly. In my organization, we do not have a specific "technical rescue team" and rely on truck company members to have advanced training in technical rescue. In most cases, we rely on a few members who have advanced training to guide the remaining company members in rescue attempts. By providing rope rescue training and practice only quarterly at best, it is impossible to be technically prepared for all types of responses.

Perhaps this is one area that may determine whether or not a live subject should be used as a victim. Several survey responses indicated that dummies are used exclusively in beginning or awareness training and live subjects are used only in advanced classes.

Using a "live" victim

Advantages

Specific advantages were covered quite thoroughly in the responses to the survey as listed in item 6 above. All are appropriate and valid.

Disadvantages

The primary risk of using a live victim is the risk of injury or death due to an equipment, system or human failure.

Using a Dummy

Advantages

There will be no risk to a student or volunteer in the role of the victim. Perhaps there will be less attention to detail by rescue students, but the instructor should control that. It is time consuming for instructors and/or students to position the dummy for an exercise, but that will also provide more training and hands on to get the job done.

Disadvantages

Positioning the dummy for training is time consuming and can expose instructors or students to some risk in the process. Cost of providing the dummy and any necessary harnesses is also a potential monetary drain.

Are we really safe?

Survey responses indicate that many agencies do provide additional safety measures during training when using a live subject. These include two or three points of contact with the victim, additional safety belays, increased attention to rigging and additional safety checks. Others indicate that "we train the same way we perform rescues". Are we really safe enough to absolutely guarantee the safety of a defenseless live victim strapped in a litter? Consider

some of the tried and true techniques we've been using and relying on for years that have been tested and presented to NATRS and ITRS attendees recently:

"The "What if" of Highline Failure" Kirk and Katie Mauthner 1996 (Las Vegas)
Will a tag line set up traditionally really catch a load if there is a track line failure?

"Boinnnggg!!!" Kirk and Katie Mauthner 1999 (Fort Collins)
Questioning the use of dynamic rope for rescue belays.

"Water Knot Testing" Tom Moyer 1999 (Fort Collins)
Knot failure after repeated load/unload cycles

"Rigging for Failure" Rod Dennison 1999 (Fort Collins)
Modes of failure in rope rescue systems

"Shock absorbers in Rope Rescue" Kirk Mauthner 2001 (Golden)
May be good for fall protection system, but not necessarily on a moving rescue belay.

"Bottom Belay Testing" Jim Kovach 2003 (Salt Lake City)
At 800 ft. bottom belays don't work well. What about 400 ft? 40ft?

Ever had a Close Call?

As most of us here at the ITRS are or have at one time been an instructor we need to look back and think about all the students you have been responsible for placing in a potentially dangerous environment. I know we use safety rules, techniques and belays to make sure they are safe, but, have you ever seen something at the last minute and stopped an evolution? Just in time? Have you ever been in the position of Safety Officer and proudly caught a potentially catastrophic mistake?

Have you ever taught a class and wondered to yourself if that one student who technically "passed" the course, but really didn't impress you, might be responsible to return to his or her home agency and teach others the same techniques?

Liability

Liability insurance is necessary to protect your livelihood and all of your personal assets. It gives us some assurance that if something would go wrong in training, we would not be liable for damages.

There are many issues that may arise from an injury or death of a rescuer that would not be covered. Even with insurance, our litigious society would go after you, your sponsoring agency and everyone else remotely involved.

I don't profess to be an expert or even very knowledgeable in the area of Tort Law and Liability issues.

IFSTA's "Fire and Emergency Services Instructor" (6th edition) gives the following information:

Torts – A tort is a private or civil wrong that is the result of a breach of legal duty or failure to perform based on society's expectations of conduct.

Negligence - In any training situation, there may be some factors that limit or control how an instructor will or can act. But the instructor has a responsibility to act in a reasonable manner based on known information, current conditions, and available resources. What is reasonable and prudent is often established by common sense or social norm, and the action taken is judged based what a reasonable person would prudently do in the same circumstances.

What actions are considered reasonable and prudent for instructors? If a person has a greater amount of expertise than another person, the duty of the expert person is greater in proportion to the nonexpert. If a potentially hazardous condition exists, instructors must consider the following factors, especially if resources are available to correct them:

- Potential for and degree of harm that may result from the condition.
- Likelihood that harm will occur because of the condition.
- Availability of alternate methods and/or appropriate equipment to correct the condition.
- Burden of removing or changing the condition.

In a court of law, the prosecution and defense will bring in their own "expert witness" who is considered to be a "reasonable and prudent person".

Defense witness – "It is common practice to expose a student to the possibility of a fatal fall because the benefits obtained during training outweigh the potential results."

Prosecution witness – "This evolution could have been done using a mannequin in the place of the student to negate all risk to the student".

Other Research Results

On-line searches

Requested input through several "forums" and had limited response. The few that did respond echoed ITRS survey results very closely.

Contacted NFPA 1500 committee

Search resulted in no comments or proposals to address this specific issue.

Contacted NIOSH

No records found documenting Injury or death resulting from rope rescue training.

Contacted several professional rescue training companies to follow up on survey comments.

Most had specific training and safety policies to ensure safety of student as victim.

Summary

With few exceptions, the use of live rescuers, students or trainees as victims in rope rescue is the standard. The benefits of the practice outweigh the risks in the eyes of most competent trainers and training entities.

Some agencies and instructors do feel that the risk of injury or death to a person dictates that this is never done, but most seem to qualify or limit this to packaging and moving the victim in a rescue litter.

We seem to have an excellent safety record as I was unable to find any documented serious injury or death incurred during rope rescue training.

Conclusion

The decision to use live rescue victims during rope rescue training must be made with a serious consideration for the safety of the victim vs the benefit and realism it gives to the students. With proper technique, a commitment to safety and the proper attitude of those operating and supervising the operation, we have shown that we can provide quality training to our students and team members without incident.

I do not wholly disagree with those who have chosen to take the "no risk" position of never exposing a student or firefighter to risk unnecessarily.

We must, however, consider where our trainees will go and what they may do with the skills and knowledge we have given them. In the fire service it is not uncommon to send one or two members to a technical training school and expect them to train their home agency members on their return. This is where I am concerned that skill levels and safety procedures may be overstepped.

In my own case, as mentioned at the beginning of this document, given the training level of the trainees and the limited supervisory personnel on scene, using a dummy for that particular event would have been reasonable and prudent. It's similar to a realization as I grew up that, "the older I get, the smarter my father gets".