

1 Central Issues of Technical Rescue

In the contexts of rope rescue, what does central and peripheral mean? Central issues are those concepts that are non-negotiable in the eyes of any given individual or organization. Central issues are the law and they “shall” be followed. Peripheral issues are concepts that are not ironclad and offer more flexibility in the options available in accomplishing a given goal. An example of a central issue might be “All bowlines shall be used only when backed up with a Double Overhand”. Whereas the peripheral counterpart might read, “Bowlines may be backed up with an overhand, double overhand, Yosemite, or any recognized stopper knot”.

Furthermore, no two instructors will ever agree on what is central and what is peripheral. To put a definition on what issues in rope rescue rigging are central and what is peripheral is the number one source of disagreement and stress between instructors. Many of good friends have come close to blows over the best way to do this, or the best way to do that. Usually the one with the stronger personality, or the one with the greater organizational influence wins the battle. This outcome may, or may not be the best interest of the organization.

Is there a land where central issues are perfectly defined, where, despite all the good opinions, the central issue cannot be disputed? Most will say, “No, there is no such place.” They will argue that central and peripheral only defines an individual’s level of understanding of a given subject. To a large degree this is true, the more you know, the more peripheral everything appears. But, eventually we will always return to the question, “What is central”? After all, if everything is peripheral and indeed there is several ways to accomplish any given goal, then everything will work! If this were the case and “All roads lead to Rome” than just start walking and you will eventually get there. Commonsense tells us otherwise, depending on other influences, on any given day there is only one best way to reach our destination. The safest way is always our first factor, followed by what is the most efficient.

So, what is central? To fully understand this, everything must be broken down to its most elemental state, or in other words, we must travel to the sub-atomic state of rope rigging. This is where central issues can be found; this is the land of “Physics”, and the only language spoken there is math. Because most of us do not possess the required background in physics and mathematics, we must do the next best thing, which is to base our decisions on quality data from known and reliable sources.

There are no absolutes about rigging techniques, only absolutes about the physics of rigging. Most team leaders, instructor, and administrators will make a strong objection to this statement. They will say, we can not, and will not expect our team, or our students to understand the physics, or if you will, the “Why” of these many disciplines, our teams can only be expected to know “How”, anything else would promote freelancing.

True, learning “how” to perform is the beginning of a rope technician’s education, but just as important, is a basic education of the physics and math – the “why”. How and Why are inseparable in the education of a good rope rescue technician.

Lets get even more specific. How do we determine what is important in a singular area of rope rigging? What is the level of detail an instructor needs to obtain to be a value added resource for the student? Let us look at the subject of Knots. Knots offer a great starting point for this subject because they are the first task in transforming given rope rescue equipment into a living, breathing rescue system that humans will be asked to put their lives on.

I have been accused many times about being too fanatical about knots. Even some of my closes friends and respected rope rigging instructors have said I spend an excessive amount of time on the subject of knots. I will be the first to acknowledge that most journeymen rope rescue technicians only need to truly understand about ten combinations of knots. Instructors can just about double that total. The key words here are “truly understand”.

One of my favorite quotes is from Albert Einstein *“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”* Medical doctors will spend a lifetime of research and personal education in very specific areas of human medicine, yet our perception of their job is often limited to minor treatment during an office visit. We might say to ourselves, my God, I spent fifty dollars for a ten-minute visit and a prescription; those doctors are fanatical about their practice. What we fail to realize at times is the endless hours that doctors spent in the study of pharmacology, which make them a truly qualified expert in filling your simple prescription.

The young impatient piano student might complain to his teacher about practicing his major and minor scales, stating that Mozart probably never practiced piano scales. The fact that the young pianist does not understand is that Mozart not only practiced major and minor scales, but also the full range of Dorian, Phrygian, Lydian, Mixolydian, Aeolian, and Locrian scales on a daily bases. During his lifetime, Mozart was also labeled a fanatic.

I spend around two hours a day tying knots; most of them are not directly related to rope rescue. I spend another two hours on rigging skills specific to rope rescue. As a technician I feel I must have this dexterity, and feel of the rope to stay automatic and competent, no matter how bad the conditions or what time of day. I have committed well over 1000 knots to memory. I am fairly certain that I will never tie the *Bow-sen Mate's Whistle Lanyard* or a *Double Matthew Walker* during a rescue, but it is knots like these that has given me the feel that makes the knots I use in technical rescue so simple, it becomes almost like breathing.

The fanatical point I'm trying to convey is that, simply practicing the minimum knots required by your team or your instructor is probably not going to elevate your skill of knot craft (the scales of rope rigging), to a level of automatic, conscious competency. As an instructor of rope rescue it is paramount that I maintain my personal growth in rope rigging. We should never cease to be students of this art. As we grow in the knowledge of rope rigging, we start to focus heavily on the physics that drive this practice. Within the rope rescue sub-subject of knot tying there lies the same physical rules such as force vectors, friction, tension and compression that drive the more obvious larger systems of rope rigging. It has become apparent to me that everything in the subject is related and that the central issues are indeed force vector, friction and tension and compression – the physics of our practice. The rope systems we build during a rescue are only as good as the skill level of the practitioners. There can be no weak links in the system, starting with quality knot skills.

Is there several ways to accomplish any given rigging task or is there only one best way to perform that same given task in rope rigging? Yes on both accounts, there are many roads to Rome, but only one is the shortest, only one is the safest, and only one is the combined shortest and safest. In theory, if there were a skill that was proven (through data, physics, and math), without question, to be the best for a given task, this skill should then be labeled as a "Central Issue". Why would we even entertain the many other (peripheral) ways to reach our goals?

This debate is the beauty of our profession, and the experience and research that drives it. Technical rescue is always evolving. As with evolution, weak skills and weak techniques will become extinct, and the more proficient, viable skills and techniques will come to the top. It should be the goal of the technician to ride this wave of skill-technique-evolution during his/her career, always striving for that one Central way to accomplish that specific task. Expect change, demand change.

The Bottom Line – Don't Get Anyone Hurt!

What is the bottom line? As professional technical rescuers, what is our biggest concern? What fears do we have when dealing with these and other technical rescue disciplines?

The National Fire Protection Association (NFPA), without question, is the most recognized Firefighter/rescuer general consensus standard in the United States. Although NFPA does not have any authority to enforce or regulate the standards it has published, they do offer substantial guidance for today's technical rescue technician. To quote NFPA 1670;

“While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in its codes and standards”.

“Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances”.

“The exercise of reasonable care in any given circumstances” is a key legal phrase in coping with our bottom line – “DON'T GET ANYONE HURT”

Don't get anyone hurt is our number one goal. A distant second place concern is, if someone does get hurt, did we do everything possible to avoid the injury? Finally, if an injury does occur, what will be the interpretation of our legal system?

How do we prevent death and injury in a profession that demands us to put our lives on the line? To borrow a training philosophy from the Army, keep it simple, applicable, and repetitive.

Safety is everything – when it comes down to it, it's the only thing. Lack of safety during a rescue becomes an emergency in its own right. It is the responsibility of each team member to be on guard against non-safe situations. Catastrophic failures can always be traced back to the accumulative effect of several “lesser” mess-ups, over-sights, or in many cases, simple lack of knowledge, and training. Safety is a mindset all rescuers must possess.

Some of these lesser mess-ups may have their beginnings in the purchase of sub-par equipment. Seek sound judgment and quality

training in the use of the best equipment available, no matter what the labeling is.

Most equipment standards have little legal impact on the type of equipment we use in technical rescue – more important – *did we use the equipment in accordance to the manufactures recommendations.*

This is not the case with NFPA 1670 Standard on Operations and Training for Technical Rescue Incidents, and NFPA 1006 Standard for Rescue Technician Professional Qualifications. Both of these standards have been adopted by the American National Standards Institute (ANSI), this could become a very good legal source of ammunition for a personal injury attorney.

NFPA 1670 applies to technical rescue procedures of the department, while NFPA 1006 is geared more to the skill level of the individual technician. Because these standards were adopted by ANSI, they both point their legal fingers at the Authority Having Jurisdiction (AHJ), or in other words, the local fire department and its leadership.

Most fire departments are very good at providing continued education and documenting the training of its members at the technician level, but if the AHJ is to be consistent with 1670, technical rescue awareness level and operational level training and documentation must be addressed as well.

Although these standards imply that the AHJ has a tremendous amount of flexibility over what level of rescue it chooses to be involved in, there is one other notable area of liability. NFPA and ANSI require the AHJ to conduct periodic hazard analysis and risk assessment surveys in the organization's response area for the purpose of identifying the types of technical rescues that are most likely to occur. These hazard analysis and risks assessments shall be reviewed and updated on a scheduled basis and as operational or organizational changes occur.

The Art of Plate Spinning

My good friend Reed Thorne, a true pioneer in the art of modern rope rigging, fondly calls those of us in the fire service “a bunch of plate spinners”. He goes on to say that we're like the man in the circus who spins five or six plates on poles that are precariously balanced on various parts of his body, all the time being very careful not to make any fast or complex body movements for fear of a catastrophic chain reaction of dropping plates.

There's the EMS plate spinning on top of our head, the fire suppression plate spinning on our chin. The community involvement plate spins in our

left hand, while the hazmat plate spins in our right. Then there's the plates spinning on top of spinning plates like, rope rescue, confined space rescue, structural collapse, and swiftwater! You get the idea. Not only must we deal with spinning plates, but each spinning plate has a chief officer whose job is to make absolutely sure his plate spins faster and longer than the other spinning plates. Like the man in the circus, we don't dare try a skillful complex move, because as sure as we're talking, a plate is going to drop. How in the world do we balance so many spinning plates?

The answer to this three ring circus technical rescue technicians/firefighters are trying to survive in is called - SPAN OF CONTROL. Even the circus guy limits his plate spinning to five or six plates. When talking about incident command, the fire service is very quick to point out the virtues of a manageable span of control. This concept even filters down to supervisory positions. The fire chief has five assistant chiefs, each assistant oversees five deputy chiefs, each deputy is in charge of four or five battalion chiefs, the battalion chiefs have four or five stations, and the captains at those stations supervise four or five firefighters.

Firefighters are expected to maintain physical fitness, train and respond to fire and EMS incidents, and be somewhat involved in the community. These four demanding activities are a given, this is what firefighters do. What happens when these same firefighters are asked to tackle the many disciplines of technical rescue? Can firefighters maintain a heightened level of skill for each of these multiple disciplines? Is there enough hours in the day to do justice to these important duties? Is the fire service doing a disservice to the community because its employees are spread too thin and under trained? Here are three current trends that may be leading to this dangerous diluting of technical rescue skills.

First, labor/management process in the fire service throughout most of the US has come to promote the idea of minimum company standards; this "minimum standards" tends to make most departments train to the lowest denominator of skills.

Second, in many cases, technical rescue trainers within the departments simply have not had proper training themselves. This happens because the overwhelming demand on training in a minimal time span has forced the use of well intentioned, but unseasoned instructors.

Third, there seems to be a trend in the American fire service to do away with volunteerism. Historically, volunteers were the backbone of the fire service in the United States. More specific to our topic of rope rescue, some of the most seasoned veterans of high angle rescue are volunteers

who learned their skills through many years of training on mountain rescue teams. It is extremely critical that metropolitan fire department seek out and use these masters to train and raise the overall standards of their technical rescue teams.

The fire service, especially the smaller outline area departments, must resist this notion of “non-volunteerism”. Small departments typically have very large wilderness areas of responsibility and limited manpower. These rural areas usually possess individuals capable of bringing a wealth of experience and ability to a local department. This should not be an issue driven by territorialism or personal agenda building. Instead, we should strive to build our technical rescue programs around physically capable individuals who have the passion and talent for this type of vocation.

The central issues we will deal with in this book are those issues that will offer us the shortest and safest route to our ultimate goal of providing technical rescue to the best of our ability. When used in accordance to the manufacturers recommendations, today’s modern technical rescue gear rarely fails. Failure of a technical rescue operation is almost always caused by human error, which in most cases, can be traced to the lack of documented quality training, and documented hazard analysis and risk assessment.

Specific skills in technical rescue can not be mastered over night. Not unlike most medical doctors we trust and consider experts in their fields of practice, to become good at anything, one must devote two, three, sometime even more years of concentrated effort and study. To become great, one must devote a life time.

Excerpt from ***Urban Technical Rescue, Volume 1***, written by Pat Rhodes

Urban Technical Rescue, Volume 1
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