



# SERT

Best  
Practices for

in Arboriculture





TREE CARE INDUSTRY ASSOCIATION

## **Best Practices *for* SRT in Arboriculture**

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**This document is not intended to be a complete and exhaustive operations guide for all Single Rope Technique (SRT) climbing scenarios. Training by qualified and experienced SRT tree climbing professionals is required in addition to the information in this manual in order to safely accomplish any tree climbing method. To become a qualified trainer, contact the TCIA Safety Training Department at TCIA.**

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## Climbing: Get Your Mind Right

*By Steve Castrogiovanni*

March 6, 2012, is a day that will affect me for the rest of my life. It was a chilly day and I was joining some colleagues to prune trees for the upcoming 2012 MAC-ISA Tree Climbing Championship. I can remember not feeling well that morning and struggling to find the motivation to leave the office.



Once I arrived on site, I said hello to some of my friends that I only get to see one or two times a year. We had our safety briefing and then dispersed to begin pruning various trees at Wheaton Regional Park in Silver Spring, Maryland. Since I was competing in the event, I was not permitted to work on the trees that were going to be used in the competition. I picked out a 90-foot tulip poplar that had a few large pieces of deadwood in it and proceeded to set my access line in the top of the tree. Once I set my line in the tree, I began to ascend the tree using the tree frog system.

Then the unthinkable happened! According to witnesses, I fell 60 feet, landing on my head and right shoulder. I broke nine ribs and two vertebrae, punctured my lung, tore my anterior cruciate ligament (ACL) in my left knee and suffered a subdural hematoma (bleeding in the brain). I was rushed to Suburban Hospital where I spent the next two weeks in a coma while I recovered from my internal injuries.

During 21 hours of surgery, the doctors implanted five titanium ribs and a titanium vertebra, and fused my back. After four weeks in the ICU, I was transferred to a rehab hospital where I had to recondition myself to walk again.

Many of the details of the fall itself are unknown, as there were no witnesses and I do not remember what happened. Either the impact of the fall affected my memory or my brain has elected to block the event. After speaking to some folks who reviewed the accident, it was determined that all of my gear was in perfect working order. So how did this happen?

Since my accident, I have had many discussions regarding the details, and everyone wants to know what went wrong. It wasn't what went wrong, it was who went wrong. I should have never gone up the tree that day. All morning long, prior to going up the tree, I was in a complete fog. I wasn't feeling energetic and I had a lot on my mind. I was later told that I went up the tree and left all my saws in the truck. Others have said that I wasn't very sociable like I normally am. I am convinced that my mental state is the main reason for my accident. My mind was not 100 percent on what I was doing and I did not have my "head in the game."

Studies have shown that approximately 90 percent of all accidents can be attributed to human error. This was definitely one of those. Tree

climbing techniques are always changing. The more complex the system is, the more you have to think about. I was ascending the tree using the tree frog system, which consists of a Pantin (an ascender that straps to the ankle, enabling a user to virtually grab rope with the foot), croll (chest-mounted) ascender, and a double-handle (single line) ascender. My intention was to reach the top of the tree, then switch over to a more traditional double rope technique. For anyone who has ascended a tree this way, they know there is a lot to remember.

Not a whole lot has to go wrong for a serious accident to occur. I could have missed clipping in a carabiner or forgot to tie in before going off my SRT. As painful as it would be to remember exactly what happened, I wish I could, so I could pass along all of the details to prevent someone else from sharing the same fate. Your mind is your primary tool, and it has to be in good working order (i.e., proper state of mind) before you perform any tree care operation. You should check yourself as part of your daily inspection, the same way you would inspect your climbing gear. An accident like mine is just not worth it.

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# Chapter 1

## Single Rope Technique (SRT), an Introduction



Climbing arborists utilize specific rope and equipment.

Professional tree care operations rely heavily on the skill and knowledge of trained tree climbers. Climbers are expected to be part scientist, part equipment specialist and part athlete in order to work safely in tree tops. A firm grasp of forces in trees and experience with tree care operations, equipment and the skilled use of chain saws is the foundation of a **qualified arborist**. To safely employ tree care systems and equipment, the climbing arborist needs an efficient way to enter, descend and move around high in the tree. Climbing systems using arborist rope and components allow the worker to enter and position safely while aloft.

There are many types of climbing systems used in professional tree work. Each is categorized as either a dynamic rope system or a static rope system. In a dynamic rope system, the rope moves with the climber as he/she maneuvers throughout the tree. In a static rope system the rope is anchored in place and does not move with the climber. Instead, the climber moves along the anchored rope. A static rope system, such as single rope technique (SRT), can be an advantage when ascending a tree. The information that follows will explain this concept further.

### A Brief History of SRT Climbing



Climber prepares to attach a single line.

Single rope technique climbing can be traced back to early mountain climbers attempting first ascents of today's most famous high peaks. They would travel across these dangerous peaks using only friction hitches attached to fixed lines on the mountain to prevent falls.

The mountaineers called this technique "short roping," and it was single rope technique in its truest sense.

The 20th century began to see climbers scaling big rock faces in the Dolomites and the European Alps. They would employ free- and aid-climbing tactics to create bold ascents. Free- or aid-climbing requires a single climber to lead up a pitch or section of climb while on belay. Once the climber makes it to a ledge, the climber would either belay the others using his/her rope or establish a single fixed line and have the others ascend the line using hitches and rope-grabbing mechanisms. Single rope ascent began to be the preferred means of ascent within the "big wall" community and is still in use today on some of the most famous sheer rock faces in the world.

As the rock climbing craze began to take off, so did the world of caving. The 1930s saw caving become popular in Europe where several clubs in