

BULLETIN

NO.: 15-137
DATE: September 8, 2015
TO: All Personnel
FROM: James Gaboury, Battalion Chief, Training Officer
SUBJECT: Safety Message: Team-Based Palm Tree Rescue

Attached is the September 2015 Safety Message focusing on Team-Based Palm Tree Rescue. All Safety Messages and Tailboard Safety Talks are maintained in Target Safety. Station Captain's, please print one copy and file it in the appropriate section of the Station Tailboard Safety Talk Manual.

This Safety Message was provided by Firefighter Kevin Pendleton from Station 12/A. Any questions can be directed to him at KPendleton@sandiego.gov.



San Diego Fire-Rescue Department Training Division **SAFETY MESSAGE**

Team-Based Palm Tree Rescue
September 2015

Think Safe, Work Safe, Be Safe

In San Diego tree trimmers are frequently becoming trapped during routine palm tree maintenance where they die from crush injuries and asphyxiation. From 2009-2013 there were 408 reported fatal accidents in the US tree care industry. From September 2013 – April 2015 alone there have been three such palm tree rescues carried out by SDFD personnel (FS13110696, FS14141601 & FS15044800). San Diego's palm trees average 40-50' in height and are capable of reaching 100'. The fronds on these trees grow from the center out. Dead fronds hang down and accumulate around the trunk towards the top of the tree, near the base of the live palm fronds. It is natural for the dead fronds to come loose and remain near the trunk, unattached but woven together in a skirt, or collar that needs to be trimmed by licensed professionals. This collar can slide down the tree naturally without being tampered with, and does so more frequently when disturbed by the trimming process. This drop is evident when you see a section of trunk in between the live fronds and the dead ones. When the collar drops, or sloughs without breaking apart during routine maintenance it traps the trimmer against the tree. Their only chance for survival is immediate extrication. Below please find some basic recommendations and use this document as a starting point for Team-Based Palm Tree Rescue.



DESCRIPTION: Tree trimmers use a length of rope wrapped around the trunk of a tree called a flip line that they sling upwards as they ascend and utilize cleats on their feet to climb the tree. While working below the collar, the collection of dead fronds can unexpectedly slough down the trunk and trap the trimmer. These skirts can weigh up to 100lbs per linear foot. The tree trimmer typically ends up with their backs hyper-extended with the weight of the skirt on their chest. Their flip line gets enveloped by the skirt pinning their lower body to the tree where their harness is attached, while the weight of the skirt pushes their upper body down and out. The large sections of dead fronds are covered in debris that can occlude the patient's airway while the sheer weight of this skirt crushes the patient. The mortality rate is high in these instances.

DISPATCH: As of April 2015 the response matrix for initial unit assignments has been updated to include a Tree Rescue Alarm. This dispatch includes 1 Engine (closest), 2 Trucks, 1 BC, 1 Type 1 Heavy Rescue Unit, Engine 4 or 41, 1 ALS and Shift Commander Notification.



TRUCK COMPANY OPERATIONS: Basic Palm Tree Rescue is ideally carried out with two aerials in place. In the best case scenario the patient is accessible with both ladders. Place the tip of the first ladder at the victim's shoulders and attempt to relieve some of the downward pressure on their chest. The firefighter at the tip of the ladder (brush coat, gloves, helmet, eye protection, ladder belt) should clip into a rung/beam then apply a harness to the patient and secure them to the ladder. If the patient is conscious use them to help remove the fronds one section at a time until the collar eventually falls off. This can be done by hand, with a pike pole (for reach), and with a chainsaw or reciprocating saw to cut away thicker fronds. The pike pole is best for striking down on the collar from above, or using the hook at the tip to pull off sections of fronds from below. The saws can help clear debris and assist with patient access.

The second aerial (if accessible) can go above/behind the rescue operation and begin removing the skirt one section at a time. The sections of fronds will un-zip, or come apart and eventually the whole collar will fall off allowing for access to the patient. If the tree is in a position for allowing two aerials, anticipated rig placement will be paramount. The arriving units need to position themselves in a way to allow space for two trucks in advance. The first aerial should be deployed with the anticipation of a second aerial if feasible.

This rescue has been done successfully with a single aerial ladder. Once the patient is stabilized the firefighter (and victim if conscious) can remove the dead fronds until the collar falls off. The victim can then be pulled up onto the ladder, or they can step onto the ladder independently if their injuries allow for it once the skirt is removed.



SAFETY CONSIDERATIONS: Aside from standard department SOP's, please consider these additional points:

- If the plan is to remove the skirt from the tree, it will fall to the ground and cause injury or damage to objects below. Keep the area below the tree clear.
- Utilizing ground ladders from below the skirt is dangerous and not recommended. The tree is an unstable object to rest the ladder against and the skirt will eventually fall down rendering the ladder useless.
- Care should be taken to ensure the tree trimmer is secure before the skirt, or collar falls off. This can be done with the aforementioned chest harness and can be supplemented with standard victim pick-off procedures.
- All ladder movements need to be coordinated between the engineer, the rescuer, the victim and the IC.
- Use caution when cutting or striking the tree as the patient's extremities are often hidden from view. Take care not to sever the tree trimmer's flip line (rope) with the saw.



- Additional common causes for death in trees include electrocution and being struck by the tree or parts of it. Accordingly, be aware of power lines and unstable structural elements of the tree itself.

SUMMARY: At a minimum please take away these points:

- This is a common occurrence and the scenario looks similar many times.
- One aerial ladder should be placed directly to the patient, with the other above the skirt.
- Secure the patient to the ladder as soon as possible.
- The ultimate objective is generally the removal of the skirt with a pike pole and a chain saw to free the victim.
- Once the collar of the tree is removed and falls to the ground, remove the victim using standard victim extrication practice.
- If the tree trimmer is not accessible by aerial ladder, alternative methods for patient access/extrication will be utilized at the IC's discretion with TRT level tactics.

ADDITIONAL RESOURCES: There are several YouTube videos available if you search "Palm Tree Rescue." You will find various techniques on display (some good, some questionable) as the fire service is yet to become uniform with this practice.

Included below is a link to a rescue in Engine 25's district. Pay attention to the following highlights:

- Challenging placement for aerial ladders.
- Use of chain saw for patient access.
- Harness application at 12min 57sec.
- Effectiveness of second truck with pike pole at 15min 30sec.



CONCLUSION: The information presented here is by no means intended to be the "end-all, be-all" tree rescue document. The intention is simply to provide awareness to a rescue scenario that has presented itself several times in recent history, and provide guidance for first arriving companies. Team-Based Palm Tree Rescue is not a cookie cutter operation and each scenario will provide unique challenges. Thank you for your time and consideration.

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