RESCUE BEACON

NEWSLETTER OF

MONTEREY COUNTY SEARCH & RESCUE TEAM

RECENT EVENTS

May 18: Recruiting event at Marina REI (12:00-14:00)
May 23: SAR mission-cliff rescue
May 27: SAR mission-recovery
June 8: Rope Rescue Techniques (Training) & John's Farewell Party
June 15: SAR mission - injured hiker

UPCOMING EVENTS

June 19: Knotty Hour (volunteer meeting)
July 4: 2024 Monterey 4th July Parade
July 6: Monthly SAR Training

BOARD

Commander: Alain Claudel
Secretary: Vanessa Wennstrom
Treasurer: Scot Smythe
Volunteer & Social Media Coordinator: Sierra Rad
Training Coordinators: Wesley Hayward & Justin Kantor

In This Issue: Recent Missions; June Training and Electric Litter Update; Article "TTRS vs. SMSB Rope Systems"; Farewell Announcement

MISSION REPORT, MAY 16-JUNE 15

Cliff Rescue, May 23 - One local was rescued after descending down the cliff just south of granite creek. Monterey SAR utilized their cable hoist truck to send a rescuer down to perform a pick off. No injuries reported. Monterey SAR would like to remind the public of the dangers of breaking trail and also the legal liabilities that can come of it. Stay Safe.

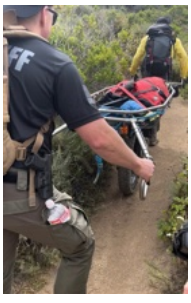
Recovery, May 27 - The team assisted the sheriff's office with a recovery.

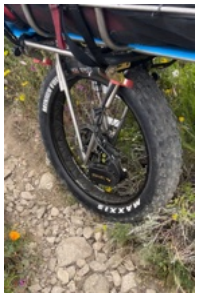
Injured hiker, June 15 - The team assisted in transitioning a patient from hoist to CALSTAR.

JUNE 9 TRAINING AND POWERED WHEEL UPDATE

We had our monthly training this weekend. The scenario was to rescue a subject with a broken leg at the top of a steep hill. Team members brought the electric litter, powered by Bimotal Elevate system, up three miles with 1900 feet of elevation gain, found the subject, packaged the patient, and brought her back down the hill through steep and rough terrain.

The wheel team was able to move nearly as fast as the hasty teams, instead of being three times slower. Everyone was impressed by the powered wheel's performance. With a 200 lb load we were able to climb over 1900 ft of elevation over three miles having only two rescuers at a time on the litter!
On the way down we opted to use a mule rig to supplement braking as the terrain was too loose and rocky for the litter brake alone to safely make the descent. Very positive day for the E-Litter!





ABOUT US

The Monterey County Sheriff's Office Search and Rescue (SAR) Team was created in 1963. The volunteer unit was established in 1989 to assist the sheriff's office. Monterey county SAR team is a nonprofit organization that supports the sheriff's office by providing trained personnel and equipment to aid in the recovery of sick, injured, lost or deceased persons in all areas of the County of Monterey. The Monterey SAR team is a full member of the Mountain Rescue Association as a Type I elite rescue unit. The Monterey SAR Team is composed of unpaid volunteers and is entirely self supporting. It receives no financial assistance except occasional grants and donations.

JOIN US

The Monterey County SAR Team is always looking for qualified new recruits. If you feel that you have what it takes to join the team, visit our website to for more information: mcosar.com/apply

TWO TENSIONED ROPE SYSTEM VS. SINGLE MAIN, SEPARATE BELAY. ARE WE READY TO SWITCH?

BY: ALAIN CLAUDEL

There is an evolution of systems employed by rescue teams in the literature. More and more, teams are using a TTRS (Two Tensioned Rope System) and replacement for a SMSB (Single Main, Separate Belay) system. What is the buzz all about? Is it safe? Is it nimble enough for a backcountry rescue? Both systems have numerous similarities, but the few differences may be important.

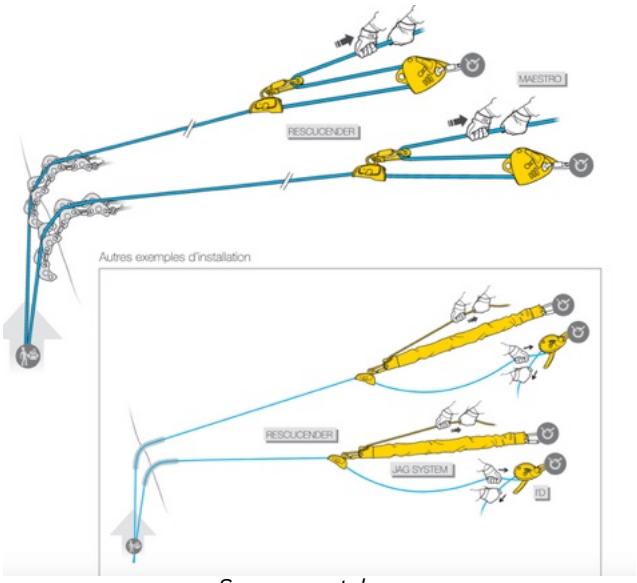
TTRS

ADVANTAGES:

- The system is advertised as sharing the load; both sides could take a full load of 1 to 4 kN at any time.
- If one rope breaks, the other is tensioned and can fulfill the BCCTR requirements (1 m drop on 3 m of 11 mm rope with 200 kg mass having less than 12 kN of maximal force and no more than 1 m stop distance).
- It provides redundancy but perhaps not independence between the two systems.

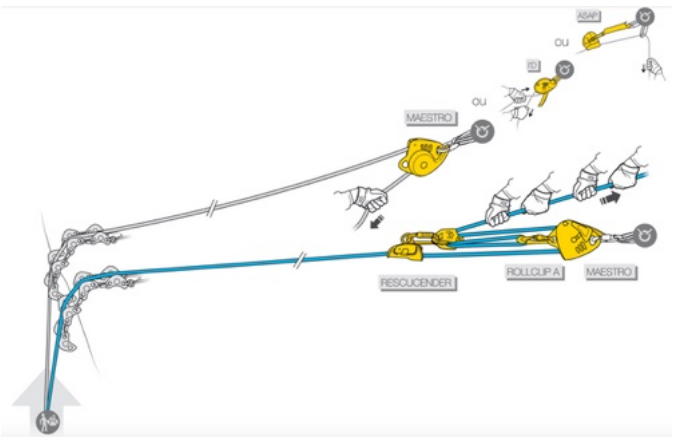
DISADVANTAGES:

- Good coordination is required (human factor).
- More personnel is required for hauling.
- Equal load sharing is never really achieved with at times, one rope fully bearing the entire load.
- Difficult edge transition (see below).



Source: petzl.com

SMSB



Source: petzl.com

ADVANTAGES:

- Two different systems can be used (which is obligatory when using the cable from the truck).
- MCSO SAR is familiar with the setup which can be put into place very quickly.
- The belay is always on the ground which prevents elongation and shock loading if the attendant slips or the main line breaks at the edge.
- Only one haul system is necessary.
- Fewer personnel required for hauling.

DISADVANTAGES:

- The belay rope must remain tight (no slack) at all times which is difficult after 30 m of rope is in play to prevent shock loading and elongation of the system if the main line breaks.
- Therefore, we use a descent control device as soon as 30 m of rope is in play which somewhat equates to a TTRS.

DISCUSSION

After 30 m of rope in service, a hand tight belay is proven to lose effectiveness due to increased stopping distance caused by rope elongation (even with the 10% of a static rope) and slack. To mitigate the slack, we use a DCD (descent control device) after 30 m of rope in play.

Research has been done by Rigging for Rescue and others on rope trauma against a sharp edge during drop test. Both systems perform similarly with a slight advantage to TTRS. In the TTRS, both ropes drop to the edge but are loaded only with 50% of the load (ideally). In SMSB, only the main is dropped on the edge with 100% of the load. Arguably, the drop test is an artificial circumstance that almost never happens (dropping a loaded rope on a sharp edge). It may, however, happen more often with TTRS (read on). Regardless, this is a good reminder that the sharp edges should always be managed by edge protection.

The real issue is the edge transition. To prevent a fall of the litter attendant at the edge, the transition must be smooth, controlled, and predictable. In other words, the rescuers managing the Maestro, Scarab or MPD need to be perfectly coordinated with the litter attendant so that both ropes advance at the same velocity at the edge. Given that the human factor accounts for 50% of incidents, it would appear that TTRS is more difficult as it requires two people or one person and two devices. Therefore, falls at the edge may happen more often with TTRS. To mitigate that, one may build a high directional. However, that may be difficult to rig with TTRS.

In conclusion, it would require additional training for our team to adopt TTRS (but not impossible). Ideally, we would use load cells to check for equal loading. It is my opinion that training in a smooth transition with TTRS is not unrealistic; however, it should be limited to light loads such as when there is only the attendant and the litter going down at the edge. If we need to perform an edge transition with a victim and the leader attendant, it would be wise to continue using SMSB system. I personally do not think that a smooth transition with two scarabs is realistic. It is more likely to be smoother with the Maestro than any other device. The number of personnel (for hauling) and weight of devices used may be different; we would have to actually try it and see which system is more economical and nimble.

An excellent analysis of the two systems can be found in this article: *https://riggingforrescue.com/wp-content/uploads/2019/03/Two-Tension-or-Not-to-Tension.pdf*
Other source: *https://www.petzl.com/NL/en/Professional/Team-rescue-techniques-for-hauling-and-lowering?ProductName=ASAP-LOCK*

SUPPORT US

Give a little, help a lot

So That Others May Live

The Monterey County SAR Team is a nonprofit, charitable organization that receives a modest allowance each year from the Sheriff's Office to help offset the cost of equipment, uniforms, and training. But the great majority of our operational budget is funded directly by the volunteer unit from donations and fundraising efforts. Our volunteers are unpaid and have to purchase the personal gear they need themselves. We have a substantial and ongoing need to replace team equipment and to seek professional training in the many disciplines needed to be a proficient SAR unit. You can support us by donating online at MCOSAR.COM.

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FAREWELL ANNOUNCEMENT

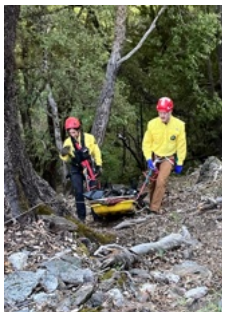
It is with mixed emotions that we announce the departure of John, one of our dedicated search and rescue volunteers. He came to the Monterey area in June 2022 for a master's program at the Naval Postgraduate School. Having learned about the Monterey County Search and Rescue team from one of his coworkers at his previous duty station, John thought search and rescue would be a great opportunity not only to get back into the outdoors and escape the academic environment, but to provide meaningful service in doing so.

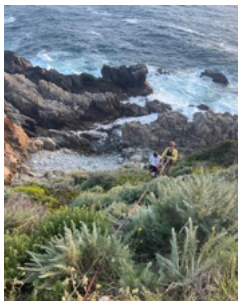
In November of that year, John was sworn into the team and became an invaluable asset to our team, consistently demonstrating a positive attitude and exceptional commitment to our mission.

Regarding his experience, John says "I've had a phenomenal experience ever since. We've done training on ropes, high and low-angle rescue, emergency medicine, swift water rescue, avalanche rescue and cold weather operations, and tracking to name a few. We've been flown into search areas by helicopter, recovered bodies in Big Sur, and rescued hikers stranded by landslides. But for all the amazing work that I've been fortunate enough to take part in over the past 18 months, what I've enjoyed the most was the team itself. I feel incredibly blessed to have been a part of such a tight-knit and dedicated group of individuals and I am sad that it is time for me to move on to my next duty station. I am so excited for the next group of Marines that have just been sworn in and I hope that the Marines at NPS will be serving with this team for many years to come."

John, we thank you for your service and dedication. We wish you all the best in your future endeavors and hope our paths cross again.

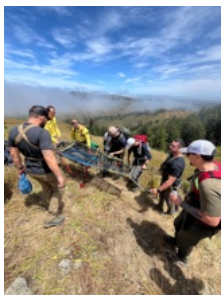
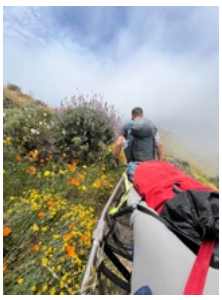
SAR IN ACTION





Cliff Rescue, Recovery, & Injured Hiker Missions



June Training - Extracting a Patient from the Backcountry

CONTACT US:

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