

Taos Search and Rescue Technical Rescue Unit Guidelines

The TSAR Technical Rescue Unit is a Unit of Taos Search and Rescue (TSAR), a 501(c)(3) all-volunteer organization based in Northern New Mexico. TSAR works under the auspices of the New Mexico State Police to aid sick, injured and lost individuals primarily, but not solely, in wilderness settings. These guidelines are to provide clear and consistent objectives for all members of the TSAR Technical Rescue Unit.

1. Section I - Introduction

a. Mission Statement

- i. The mission of the TSAR Technical Rescue Unit furthers the Mission of Taos Search and Rescue through providing a specialty resource of exceptionally trained, professional and competent searchers to help locate and extract individuals who require technical rope rescue.

2. Section II - Definitions

a. Technical Rope Rescue

- i. Any mission that requires the use of ropes and equipment to locate, access, and extract subjects from hazardous geographic locations. This includes, but is not limited to:
 1. High angle rescue
 2. Medium angle “scree” rescue
 3. Rappelling/ascending
 4. Rock climbing
 5. Highline systems

b. Member

- i. For the purposes of this document, any reference to a “member” is any individual that participates in TSAR Technical Rescue Unit trainings and/or missions. This *does not* equate to the “Levels of Membership” as outlined in Section III of this document.

3. Section III - Levels of Membership

a. Technical Rescue Unit Trainee

- i. TSAR Technical Rescue Unit Trainees are prospective members of the TSAR Technical Rescue Unit. Trainees shall work to full certification by completing requirements on the TSAR Technical Rescue Unit Certification Sheet (Appendix B).
- ii. TSAR Technical Rescue Unit Trainees *must* attend 50% of all unit trainings.

- iii. TSAR Technical Rescue Unit Trainees may only participate in missions *if* there is a Technical Rescue Unit Full Member present *or* the Technical Rescue Unit Leader is present.
- b. *Technical Rescue Unit Full Member*
 - i. TSAR Technical Rescue Unit Full Members are Trainees who have completed the Technical Rescue Unit Member Certification Sheet (Appendix B).
 - ii. TSAR Technical Rescue Unit Full Members *must* attend 50% of all unit trainings.
 - iii. TSAR Technical Rescue Unit Full Members may participate in any technical rescue missions.

4. *Section IV - Safety Guidelines*

- a. All members *must* respond to missions in groups of two (2) or more, as outlined by TSAR Team Guidelines.
- b. All members *must* have required PPE outlined in Appendix A on trainings (unless given clear permission by the Technical Rescue Unit Leader).
- c. All members *must* have required PPE outlined in Appendix A on missions (NO EXCEPTIONS)
- d. All members *must* be “tied in” to a safety line when working within 10 ft of a cliff edge or otherwise hazardous location.
- e. All members *must* use their own judgement and situational awareness to keep themselves and other team members as safe as possible during trainings and/or missions.
- f. All members *must* perform a thorough inspection of their station during any technical rescue, and their rigging must be inspected by another member or the Safety Officer.
- g. All members *must* inspect their equipment for any damage prior to use.
- h. A belay line must be employed for all technical rescue situations whenever possible. This includes, but is not limited to, high-angle rescue, rappelling, ascending, and highlines.
- i. When working “on-rope” you *must* have at least two (2) points of attachment above the waist. This includes, but is not limited to, high angle rescue, rappelling, ascending, and highlines. Examples of this would be a main and belay line (raising and lowering operations) or a prusik hitch and separate belay line (on rappel). There *must always* be a *primary and secondary* point of attachment with redundancy for any given rope system.
- j. The use of Single Rope Technique (SRT) *must* be used with extreme caution and *only* in circumstances where a separate belay line is not feasible.

- k. All members *must not* operate outside of their scope of practice and will adhere to the TSAR Technical Rescue Unit Certification Sheet as to their level of participation on technical rescue missions.

5. Section V - Equipment Guidelines

- a. All unit equipment *must* be inspected thoroughly after each and every training and/or mission.
- b. All ropes *must* be thoroughly inspected and logged on the TSAR Technical Rescue Unit Rope Maintenance Log (Appendix D) after each and every training and/or mission. Rope Identification numbers can be obtained from Appendix E of this document.
- c. All equipment *must* be treated with the greatest level of care.
- d. Any defects/safety concerns with equipment *must* be reported immediately to the TSAR Technical Rescue Unit Leader.

6. Section VI - General Guidelines

- a. All members *must* adhere to strict standards of professional conduct. Loss of temper or a poor or negative attitude will be cause for immediate review and possible dismissal from the TSAR Technical Rescue Unit.
- b. The ICS (Incident Command System) will be followed and respected by all members of the TSAR Technical Rescue Unit.

7. Section VII - Termination of Membership

- a. Any member of the TSAR Technical Rescue Unit may be terminated by the Technical Rescue Unit Leader for inappropriate behavior and /or actions. This includes, but is not limited to:
 - i. Drug and/or alcohol use on trainings and/or missions.
 - ii. Failure to carry proper equipment on trainings and/or missions.
 - iii. Failure to adhere to TSAR Technical Rescue Unit Guidelines.
 - iv. Responding to technical rescue missions as a sole individual (not in a group of two (2) or more).
 - v. Lack of professionalism and poor conduct during trainings and/or missions.
 - vi. Misuse of TSAR Technical Rescue Unit equipment.
 - vii. Failure to meet attendance requirements for the unit.

Appendix A

TSAR Technical Rescue Unit Personal Protective Equipment

Required Equipment (**Section A**):

1. Helmet (“cradle” style helmet recommended)
2. Climbing harness
3. 15 ft 1” Nylon tubular webbing (to construct chest harness)
4. 35 feet 7mm nylon kernmantle cord (to construct set of Purcell Prusiks)
5. 40 feet 8mm nylon kernmantle cord
6. Four (4) locking carabiners
7. Personal Descent Control Device (DCD) (“plaquette” style (Petzl Reverso or Black Diamond ATC Guide) or Petzl Gri-Gri recommended)
8. Headlamp
9. Leather or fingerless gloves (make sure they are supple and have good dexterity. **MUST** protect your hands from rope abrasion)
10. Sturdy hiking boots with grippy soles. Rope rescue is tough on the feet, and trail shoes will generally hurt the soles of your feet.
11. Cutting tool (trauma shears preferable)

Optional Equipment (*Section B*):

1. Climbing shoes
2. Nylon/spectra runners
3. Mechanical ascenders
4. Any other equipment you feel may be helpful to technical rescue. **MUST** be evaluated by the Technical Rescue Unit Leader before use on trainings and/or missions.

Appendix B

TSAR Technical Rescue Unit Certification Checklist

Skill	Description	Signature from Unit Leader	Date Completed
Personal Protective Equipment	Unit members have obtained all required gear outlined in Appendix A, Section A of the "TSAR Technical Rescue Unit Guidelines."		
Safety	Unit member understands the risks associated with technical rescue and demonstrates an ability to be safety conscious and "hazard aware" on all trainings and missions. Unit member strictly follows all safety rules as outlined in Section IV of the "TSAR Technical Rescue Unit Guidelines."		
Force/Load Analysis	Unit member is proficient in force/load analysis on any given rope system. Unit member can calculate the forces/loads in any given rope system and can identify the "weak link" in any given rope system.		
Material Analysis	Unit member understands the similarities/differences between different types of materials used in rope rescue. Unit member demonstrates an ability to choose the correct material(s) given a set of circumstances.		
Mechanical Advantage	Unit member demonstrates an ability to set up and calculate mechanical advantage in a given pulley system. Unit member is capable of setting up a simple 3:1, 5:1, and 9:1 mechanical advantage system.		
Anchoring	Unit member demonstrates an ability to set up and evaluate suitable rescue anchors. Unit member is capable of consistently building rescue anchors with a minimum strength of 20 kN with a static safety factor of 10:1 and a dynamic safety factor of 2:1.		
Rappelling	Unit member demonstrates proficiency in setting up and performing a safe rappel. Unit member		

	adheres to “on-rope” safety guidelines outlined in Section IV of the “TSAR Technical Rescue Unit Guidelines.”		
Ascending	Unit member demonstrates proficiency in setting up and performing the safe ascending of a rope. Unit member adheres to “on-rope” safety guidelines outlined in Section IV of the “TSAR Technical Rescue Unit Guidelines.”		
Inspections	Unit member is capable of inspecting and evaluating any rope system with 100% accuracy.		
Communication	Unit member demonstrates an ability to clearly and concisely communicate with other team members.		
High Angle Rescue	Unit member demonstrates an ability to perform and evaluate all duties necessary for high angle rescue. Unit member is capable of evaluating a high angle rope system as a whole and noting any flaws and/or safety concerns.		
“Scree” Evacuation	Unit member demonstrates an ability to perform and evaluate all duties necessary for scree evacuation. Unit member is capable of evaluating a scree evacuation rope system as a whole and noting any flaws and/or safety concerns.		
Knots	Unit member demonstrates proficiency in tying the knots outlined in Appendix C of the “TSAR Technical Rescue Unit Guidelines.”		
Single Rope Technique (SRT)	Unit member demonstrates an ability to perform SRT effectively and safely. Unit member is able to identify additional hazards and risks associated with SRT, and is able to evaluate when SRT may be required.		

Appendix C

TSAR Technical Rescue Unit Required Knots

1. Bowline
2. Interlocking Long-Tail Bowline
3. Figure Eight
4. Figure Eight Follow Through
5. Figure Eight on a Bight
6. Water Knot
7. Flat Overhand
8. Double Overhand
9. Half Hitch
10. Radium Release Hitch
11. Clove Hitch
12. Munter Hitch
13. Munter-Mule
14. Square Knot
15. Prusik Hitch (3-Wrap)
16. Trucker's Hitch

Appendix E
TSAR Rope Identification

ID Number	Length	Diameter	Color	Service Date
TECH 1	200 ft	11 mm	Red	05/2021
TECH 2	200 ft	11 mm	White	05/2021
TECH 3	200 ft	11 mm	Red	05/2021
TECH 4	200 ft	11 mm	White	05/2021
TECH 5	200 ft	12.7 mm	Blue	
TECH 6	200 ft	12.7 mm	Red	
TECH 7	200 ft	12.7 mm	Blue	
TECH 8	200 ft	12.7 mm	Red	